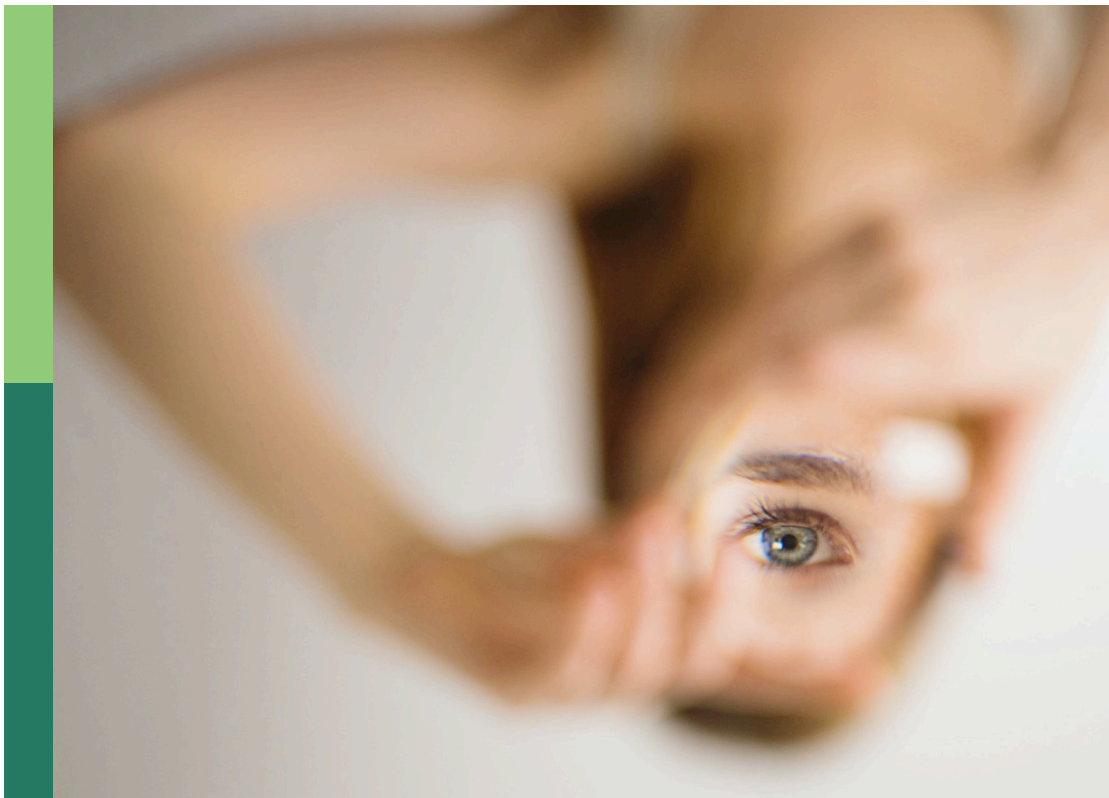
frontiers | Research Topics

Positive leadership and worker well-being in dynamic regional contexts

Edited by
Martijn Burger, Martine J. H. Coun, Jol Stoffers, Steven Van Den Heuvel, Thomas Van Waeyenberg and Arne Vanderstukken

Published in
Frontiers in Psychology



ISSN 1664-8714
ISBN 978-2-8325-4319-1
DOI 10.3389/978-2-8325-4319-1

About Frontiers

Frontiers is more than just an open access publisher of scholarly articles: it is a pioneering approach to the world of academia, radically improving the way scholarly research is managed. The grand vision of Frontiers is a world where all people have an equal opportunity to seek, share and generate knowledge. Frontiers provides immediate and permanent online open access to all its publications, but this alone is not enough to realize our grand goals.

Frontiers journal series

The Frontiers journal series is a multi-tier and interdisciplinary set of open-access, online journals, promising a paradigm shift from the current review, selection and dissemination processes in academic publishing. All Frontiers journals are driven by researchers for researchers; therefore, they constitute a service to the scholarly community. At the same time, the *Frontiers journal series* operates on a revolutionary invention, the tiered publishing system, initially addressing specific communities of scholars, and gradually climbing up to broader public understanding, thus serving the interests of the lay society, too.

Dedication to quality

Each Frontiers article is a landmark of the highest quality, thanks to genuinely collaborative interactions between authors and review editors, who include some of the world's best academicians. Research must be certified by peers before entering a stream of knowledge that may eventually reach the public - and shape society; therefore, Frontiers only applies the most rigorous and unbiased reviews. Frontiers revolutionizes research publishing by freely delivering the most outstanding research, evaluated with no bias from both the academic and social point of view. By applying the most advanced information technologies, Frontiers is catapulting scholarly publishing into a new generation.

What are Frontiers Research Topics?

Frontiers Research Topics are very popular trademarks of the *Frontiers journals series*: they are collections of at least ten articles, all centered on a particular subject. With their unique mix of varied contributions from Original Research to Review Articles, Frontiers Research Topics unify the most influential researchers, the latest key findings and historical advances in a hot research area.

Find out more on how to host your own Frontiers Research Topic or contribute to one as an author by contacting the Frontiers editorial office: frontiersin.org/about/contact

Positive leadership and worker well-being in dynamic regional contexts

Topic editors

Martijn Burger — Open University of the Netherlands, Netherlands
Martine J. H. Coun — Open University of the Netherlands, Netherlands
Jol Stoffers — Open University of the Netherlands, Netherlands
Steven Van Den Heuvel — Evangelical Theological Faculty, Belgium
Thomas Van Waeyenberg — Open University of the Netherlands, Netherlands
Arne Vanderstukken — Open University of the Netherlands, Netherlands

Citation

Burger, M., Coun, M. J. H., Stoffers, J., Van Den Heuvel, S., Van Waeyenberg, T., Vanderstukken, A., eds. (2024). *Positive leadership and worker well-being in dynamic regional contexts*. Lausanne: Frontiers Media SA.
doi: 10.3389/978-2-8325-4319-1

Table of contents

frontiers | Frontiers in Psychology

TYPE Editorial
PUBLISHED 08 January 2024
DOI 10.3389/fpsyg.2023.1349522

OPEN ACCESS

EDITED AND REVIEWED BY
Llewellyn Ellardus Van Zyl,
Optentia, North West University, South Africa

*CORRESPONDENCE
Jol Stoffers
✉ jol.stoffers@ou.nl

RECEIVED 04 December 2023
ACCEPTED 15 December 2023
PUBLISHED 08 January 2024

CITATION
Burger M, Coun MJH, Stoffers J, Van Den Heuvel S, Vanderstukken A and Van Waeyenberg T (2024) Editorial: Positive leadership and worker well-being in dynamic regional contexts. *Front. Psychol.* 14:1349522. doi: 10.3389/fpsyg.2023.1349522

Editorial: Positive leadership and worker well-being in dynamic regional contexts

Martijn Burger[1,2,3], Martine J. H. Coun[1], Jol Stoffers[1,4,5]*, Steven Van Den Heuvel[6], Arne Vanderstukken[1] and Thomas Van Waeyenberg[1]

[1]Department of Organisation, Open Universiteit, Heerlen, Netherlands, [2]Erasmus Happiness Economics Research Organisation (EHERO), Voor Erasmus University, Rotterdam, Netherlands, [3]School of Economics, University of Johannesburg, Johannesburg, South Africa, [4]Research Centre for Employability, Zuyd University of Applied Sciences, Sittard, Netherlands, [5]Research Centre for Education and the Labour Market (ROA), Maastricht University, Maastricht, Netherlands, [6]Department of Systematic Theology, Evangelical Theological Faculty, Leuven, Belgium

KEYWORDS

positive leadership, worker, employees, wellbeing, dynamic contexts

Editorial on the Research Topic
Positive leadership and worker well-being in dynamic regional contexts

Introduction

In this Research Topic, we present a collection of research articles that explore the interplay between positive leadership styles and worker wellbeing in dynamic regional contexts. In the literature, it has been well-established that leaders have an effect on employee performance and worker wellbeing (i.e., the general wellbeing of working people; Arnold, 2017; Wijngaards et al., 2022) within organizations (e.g., Kuoppala et al., 2008; Montano et al., 2017; Hendriks et al., 2020) and that destructive leadership is detrimental for worker wellbeing (Schyns and Schilling, 2013; Mackey et al., 2021). At the same time, the relationship between positive leadership styles and worker wellbeing is significantly influenced by the unique characteristics and dynamics of the context in which an organization is located through cultural norms in a country, industry trends, economic conditions, and demographic patterns (Stoffers, 2021, 2023).

Specifically, in this Research Topic several studies explore the relationship between positive leadership styles (e.g., empowering, health-related, transformational, self-sacrificial, servant, service, and virtuous leadership) and worker wellbeing. The included articles demonstrate that worker wellbeing can be operationalized in various ways, including life satisfaction, job satisfaction, and employee vigor. Some articles additionally examine more individual and organizational performance-related outcomes such as innovative behavior, employability and turnover intention. The diversity of articles in this Research Topic illustrates that positive leadership styles that work in one context (e.g., region or sector) does not necessarily work in other contexts. Hence, taking contextual factors into account—through case studies –, allows for a better understanding of *what works for whom under which circumstances* (Nielsen and Miraglia, 2017).

By using an interdisciplinary approach which incorporates insights from organizational psychology, organizational sociology, management sciences, human resource management, and labor economics, this Research Topic contributes to a better comprehension of the role of leadership and context in promoting worker wellbeing. We believe that the findings from

this Research Topic can enhance the development of more effective, adaptable, and context-sensitive leadership approaches, ultimately fostering worker wellbeing and promoting the flourishing of industries, regions and organizations. Furthermore, these insights can help shape future organizations and societies that prioritize worker wellbeing, leading to increased job satisfaction, engagement, and overall quality of life. We express our gratitude to all the contributing authors and reviewers, whose diligent efforts have shaped and refined the articles in this Research Topic.

In this Research Topic

The majority of the articles focus merely on one specific context concerning three themes: (1) conceptualization and measurement of positive leadership behavior and (2) the relationship between positive leadership and worker wellbeing, and (3) the relationship between positive leadership and individual and firm performance.

Three articles offer distinct perspectives on leadership behaviors and their conceptualization and measurement within organizational settings, each contributing unique insights to the overarching theme of positive leadership behavior.

The research of Slob et al. delves into Augustinian leadership principles, focusing on the centrality of community within organizations. The proposed Augustine leadership scale is notable for incorporating ethical dimensions such as veracity and empathy, alongside community orientation and temperance. This approach suggests that leadership success is rooted not only in organizational outcomes but also in the cultivation of a strong, value-driven community.

The work of Nöthel et al. introduces the Adaptive Leadership Behavior Scale (ALBS), a novel metric for gauging adaptive leadership behaviors, crucial for navigating dynamic and challenging environments. This scale measures leaders' abilities to perceive situational nuances, possess a versatile repertoire of behavioral strategies, and apply these behaviors flexibly and judiciously. The validation of the ALBS furthers our understanding of how leaders can effectively adjust to and manage change.

Henderikx and Stoffers' study shifts the focus to middle managers, particularly in the context of digital transformation—a radical and pervasive change affecting modern organizations. Through Group Concept Mapping, they identify crucial leadership behaviors and skills, emphasizing the significance of soft skills and people-oriented behaviors for successfully leading digital transformation efforts.

Connecting these articles, a comprehensive picture emerges, portraying leadership as multifaced behavior that thrives on ethical grounding (Augustinian leadership), adaptability to change (Adaptive Leadership Behavior), and a keen understanding of the human element in technological advancements (Middle-Managers' Leadership Skills). Together, they imply that positive leadership behavior is not a static trait but a dynamic set of skills and orientations that must evolve with organizational challenges and changes. This synthesis highlights the complexity of leadership and underscores the need for diverse and robust conceptualizations and measures to capture the essence of effective leadership across different contexts.

The subsequent five articles collectively explore the intricate relationship between various leadership styles and worker wellbeing, each contributing unique insights that, when connected, offer a multi-dimensional view of leadership effectiveness in diverse contexts.

Habets et al. set the stage with a cross-cultural examination of dark leadership in the Netherlands and China, observing its negative impact on Dutch workers' turnover intentions when moderated by a supportive learning climate. In contrast, this effect was not observed in the Chinese context, suggesting that cultural factors significantly influence how leadership styles affect employee outcomes.

Caniëls work extends the conversation to remote work environments, highlighting how positive leadership becomes even more crucial for employee vigor in the absence of traditional office interactions. Studied within the Netherlands and Flanders, the findings suggest that remote work amplifies the need for leaders to actively engage and support their teams to maintain productivity and wellbeing.

Cremers and Curşeu contribute to the theme by examining how empowering leadership during the COVID-19 pandemic in the Netherlands can alleviate adverse effects on work satisfaction and team effectiveness. Their research underscores the importance of leaders who facilitate autonomy and confidence among employees during crises.

Shek et al. explore the concept of self-leadership within the context of service leadership among Hong Kong university students. The study showcases self-leadership's positive correlation with wellbeing, indicating that the ability to self-direct and self-motivate is beneficial for psychological health in young adults.

Lastly, Stynen and Semeijn investigate the role of paradoxical leadership—a style that embraces contradictory behaviors for adaptability—on employee wellbeing during turbulent times. Their findings suggest that paradoxical leadership can enhance job, career, and life satisfaction by helping employees navigate and reframe challenging work conditions.

Connecting these articles, it's evident that leadership has a profound and varied impact on worker wellbeing across different cultural and situational contexts. From the detrimental effects of dark leadership to the empowering aspects of positive and paradoxical leadership, each study contributes to a broader understanding of how leaders can support or undermine employee wellbeing. The common thread is the significance of adapting leadership styles to the cultural, situational, and individual needs of workers to foster an environment conducive to satisfaction, effectiveness, and overall wellbeing.

The final four articles form a cohesive narrative around the theme of positive leadership's impact on individual and organizational performance, with a focus on employability, creativity, job satisfaction, and the mechanisms through which leadership exerts its influence.

Vermeeren and Van der Heijden delve into the public sector's employability, underscoring the interaction between individual traits like personality and risk-taking, and organizational features such as transformational leadership. Their study indicates that leadership styles interwoven with personal and institutional factors critically affect employees' career development and labor market agility.

Cao et al. pivot to explore the effect of leader humor on employee creativity in China, revealing that humor enhances creativity and is mediated by employees' willingness to voice ideas and concerns. They further elucidate the moderating role of contradiction thinking, which amplifies the impact of humor on more radical forms of creativity, with variations noted between state-owned and private sectors.

Coun et al. investigate the remote work landscape, examining how servant leadership and communication frequency across various channels contribute to job satisfaction among different generations. Their findings affirm that servant leadership and regular communication, particularly via email, are perceived as autonomy-supportive and positively influence employees' wellbeing across generational divides.

Hoedemakers et al. present a bibliometric analysis and systematic literature review probing how leadership influences employability. They underscore the dyadic relationship quality between leaders and followers as pivotal, as it determines leaders' propensity to provide resources such as training and feedback, thereby enhancing employability. The article posits that cultivating leadership skills is a strategic HRM investment that bolsters employability, offering a roadmap for future research and practical applications.

The common thread through these articles is that positive leadership behaviors—whether through humor, transformational practices, servant leadership, or effective communication—are fundamental drivers of employee and organizational outcomes. Leadership not only impacts immediate performance but also equips employees with the skills and motivation necessary for long-term employability and adaptability. These studies highlight then also the importance of understanding the nuances of leadership across cultural and generational contexts to optimize both individual growth and firm performance.

In sum, the studies in this Research Topic enhance our understanding of the interplay between leadership styles, worker wellbeing and worker performance. By considering context characteristics and dynamics, this research contributes to the development of more effective and adaptable leadership approaches that prioritize worker wellbeing, paving the way for thriving organizations and societies in an ever-evolving global economy. We invite you to explore the diverse range of topics and ideas presented in this Research Topic and engage with the authors and fellow readers to stimulate dialogue and mutual learning.

Future research

In this Research Topic, we showed that positive leadership behavior can play an important role in wellbeing of workers. Nevertheless, literature on the role of leadership for leader's own wellbeing and vice versa the interaction with employee's wellbeing is scarce (Inceoglu et al., 2018, 2021). Future research could address this gap by focusing on which factors influence the wellbeing of leaders and to what extent the behavior of leaders at one level (e.g., middle managers) influence the behavior and wellbeing of leaders at lower levels and to what extent does this in turn influence the wellbeing of the employees (see e.g., Lin et al., 2019).

Author contributions

MB: Writing—review & editing. MC: Writing—review & editing. JS: Writing—review & editing. SV: Writing—review & editing. AV: Writing—review & editing. TV: Writing—review & editing.

Funding

The author(s) declare that no financial support was received for the research, authorship, and/or publication of this article.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

References

Arnold, K. A. (2017). Transformational leadership and employee psychological well-being: a review and directions for future research. *J. Occup. Health Psychol.* 22, 381–393. doi: 10.1037/ocp0000062

Hendriks, M., Burger, M., Rijsenbilt, A., Pleeging, E., and Commandeur, H. (2020). Virtuous leadership: a source of employee well-being and trust. *Manag. Res. Rev.* 43, 951–970. doi: 10.1108/MRR-07-2019-0326

Inceoglu, I., Arnold, K. A., Leroy, H., Lang, J. W., and Stephan, U. (2021). From microscopic to macroscopic perspectives and back: the study of leadership and health/well-being. *J. Occup. Health Psychol.* 26, 459–468. doi: 10.1037/ocp0000316

Inceoglu, I., Thomas, G., Chu, C., Plans, D., and Gerbasi, A. (2018). Leadership behavior and employee well-being: an integrated review and a future research agenda. *Leadersh. Quart.* 29, 179–202. doi: 10.1016/j.leaqua.2017.12.006

Kuoppala, J., Lamminpää, A., Liira, J., and Vainio, H. (2008). Leadership, job well-being, and health effects—a systematic review and a meta-analysis. *J. Occup. Environ. Med.* 2008, 904–915. doi: 10.1097/JOM.0b013e31817e918d

Lin, S. H., Scott, B. A., and Matta, F. K. (2019). The dark side of transformational leader behaviors for leaders themselves: a conservation of resources perspective. *Acad. Manag. J.* 62, 1556–1582. doi: 10.5465/amj.2016.1255

Mackey, J. D., Ellen, III. B. P., McAllister, C. P., and Alexander, K. C. (2021). The dark side of leadership: a systematic literature review and meta-analysis of destructive leadership research. *J. Bus. Res.* 132, 705–718. doi: 10.1016/j.jbusres.2020.10.037

Montano, D., Reeske, A., Franke, F., and Hüffmeier, J. (2017). Leadership, followers' mental health and job performance in organizations: a comprehensive

meta-analysis from an occupational health perspective. *J. Org. Behav*. 38, 327–350. doi: 10.1002/job.2124

Nielsen, K., and Miraglia, M. (2017). What works for whom in which circumstances? On the need to move beyond the 'what works?' question in organizational intervention research. *Hum. Relat*. 70, 40–62. doi: 10.1177/0018726716670226

Schyns, B., and Schilling, J. (2013). How bad are the effects of bad leaders? A meta-analysis of destructive leadership and its outcomes. *Leadersh. Quart*. 24, 138–158. doi: 10.1016/j.leaqua.2012.09.001

Stoffers, J. (2021). *Oratie: Employability in de context van een innovatieve en lerende regio*. Heerlen: Open Universiteit.

Stoffers, J. (2023). Employability in de context van een innovatieve en lerende regio. *Gedrag Organisatie* 36, 235–255. doi: 10.5117/GO2023.3.002.STOF

Wijngaards, I., King, O. C., Burger, M. J., and van Exel, J. (2022). Worker well-being: what it is, and how it should be measured. *App. Res. Qual. Life* 17, 795–832. doi: 10.1007/s11482-021-09930-w

frontiers | Frontiers in Psychology

TYPE Original Research
PUBLISHED 16 December 2022
DOI 10.3389/fpsyg.2022.1041618

OPEN ACCESS

EDITED BY
Steven Van Den Heuvel,
Evangelical Theological Faculty,
Belgium

REVIEWED BY
Colin Lindsay,
University of Strathclyde,
United Kingdom
Razia Sultana,
Al Yamamah University, Saudi Arabia

*CORRESPONDENCE
Brenda Vermeeren
vermeeren@essb.eur.nl

SPECIALTY SECTION
This article was submitted to Positive Psychology, a section of the journal Frontiers in Psychology

RECEIVED 11 September 2022
ACCEPTED 29 November 2022
PUBLISHED 16 December 2022

CITATION
Vermeeren B and Van der Heijden B (2022) Employability in the public sector: The impact of individual and organizational determinants. *Front. Psychol.* 13:1041618. doi: 10.3389/fpsyg.2022.1041618

Employability in the public sector: The impact of individual and organizational determinants

Brenda Vermeeren[1]* and Beatrice Van der Heijden[2,3,4,5,6]

[1]Department of Public Administration and Sociology, Erasmus University Rotterdam, Rotterdam, Netherlands, [2]Institute for Management Research, Radboud University, Nijmegen, Netherlands, [3]Faculty of Management, Open University of the Netherlands, Heerlen, Netherlands, [4]Department of Marketing, Innovation and Organization, Ghent University, Ghent, Belgium, [5]School of Business, Hubei University, Wuhan, China, [6]Kingston Business School, Kingston University, London, United Kingdom

Introduction: The importance of employability within organizations is increasing, due to various developments that initiate organizational changes. This study focuses on the employability in the public sector. While there seems to be a clear need for an employable public sector workforce, up until now there is little empirical research into the employability of workers in this sector, and into which specific individual and organizational characteristics influence it.

Methods: We conducted structural equation modeling, using data from Dutch public sector employees (n = 13.471).

Results: Our outcomes show that public sector employees consider themselves to be reasonably employable internally, and that they rate their external employability slightly higher. Moreover, it was found that both individual (personality and risk-taking behavior) and organizational characteristics (transformational leadership and red tape) influence their employability.

Discussion: These results underline the dual responsibility of the employee and the organization in influencing workers' employability within the public sector.

KEYWORDS

personality, risk-taking behavior, transformational leadership, red tape, employability competences, internal employability, external employability

1 Introduction

The importance of employability within organizations is increasing, due to various developments that initiate organizational changes (e.g., globalization, technological progress and innovation, and demographic trends) (Fugate et al., 2021). Employability is the ability to perform the current job, to acquire a new job or to create work by making optimal use of existing competences (Van der Heijde and Van der Heijden, 2006). A high level of employability is seen as the responsibility of both organizations and their employees (Philippaers et al., 2019). In order to ensure that employees can continue to make a valuable contribution to the labor process, up until their retirement age, in a healthy manner and with a sense of well-being, research into employability

is of great importance. This scholarly work has three contributions: (1) we examine employability specifically in the public sector context, (2) we focus on both perceived employability competences and internal and external employability, and (3) we study determinants of employability on the individual and on the organizational level in one and the same study.

As regards the first contribution, so far, only a few studies have examined employability in public organizations (Van Harten and Rodrigues, 2021; Van Harten and Vermeeren, 2021). Nevertheless, there are specific reasons that make workers' employability an important issue for the public sector. Besides the general developments that initiate organizational changes, New Public Management (NPM) has come to play a central role within the public sector in recent decades, with values such as efficiency and effectiveness being emphasized (Osborne and Gaebler, 1992; Pollitt and Bouckaert, 2004; Boyne et al., 2006). Due to this business-oriented approach, strengthened by the economic crisis in the past years, many government organizations have been forced to adopt austerity measures and thereby to make changes in their organizational structures (Bozeman, 2010; Pandey, 2010; Raudla et al., 2013). At the same time, civil servants face new public service demands coming from an increasingly demanding society that is putting more emphasis on creating public value. Taken together, these changes call out for employable public sector workers, meaning that they need to adopt new roles and acquire new skills (OECD, 2017). The relevance of investing in workers' employability in the public sector could furthermore be justified using the concept of public value, and by seeing investments in employability as a retention strategy (De Cuyper and De Witte, 2011; Rodrigues et al., 2020). More specifically, as these investments are likely to result in an increase in organizational commitment and intention to stay with one's employer (ibid.), the public money that has been spent to these investments is valorized for the sector itself (i.e., return on investments). Retaining employable workers enables organizations to meet fluctuating demands for new products and services (Nauta et al., 2009). In this respect, employability provides a means for employers to match labor supply with demands in a changing environment (Thijssen et al., 2008).

Moreover, it should be noted that the public sector labor market has traditionally been different from that in the private sphere, and that its dominant practice in many countries is still lifetime employment (Bach and Bordogna, 2016) instead of lifelong employability (Thijssen et al., 2008). As a consequence, many public organizations in Western countries have even more elderly workforces than seen in the private sector. Public sector employers therefore need to manage workers' employability so that they can remain active and productive during all, including the later, stages of their careers. This is even reinforced by the raising of the retirement age in most Western countries. So, while there seems to be a clear need for an employable public sector workforce, up until now there is little empirical research into the employability of workers in this sector, and into which specific individual and organizational characteristics influence it. Our study, therefore, aims to contribute to existing research through our focus on public sector employees.

As far as the second contribution of this scholarly work is concerned, there are quite some differences in the way in which researchers conceptualize and measure the concept of workers' employability. Forrier et al. (2015) grouped different employability approaches into three categories. First, one group of researchers understand employability as an individual's range of abilities and attitudes (personal strengths) necessary to acquire a job. This is also referred to as movement capital (Forrier et al., 2009). Examples of employability variables in this category are employability competences (Van der Heijde and Van der Heijden, 2006), up-to-date expertise (Van Harten et al., 2016), and a willingness to develop and change (Van Dam, 2004). Second, employability is sometimes regarded as the individual's appraisal of available employment opportunities, in other words, their self-perceived job chances (Rothwell and Arnold, 2007; De Cuyper and De Witte, 2011). A third and less common perspective on employability addresses the realization of personal strengths and job chances, which is most noticeable when transitioning between jobs (Raemdonck et al., 2012). It is often assumed that these different notions of employability are interrelated (Forrier et al., 2015), but there is little scholarly work to confirm this. In our study, we include two of the three perspectives and look at whether an increase in workers' employability competences (Perspective 1) is related to an increase in individuals' perceptions of their employment opportunities (Perspective 2).

Knowing that employability has benefits, we posit that it is highly valuable to gain knowledge of its determinants, being the third contribution of our study. In previous scholarly work, a broad range of factors have been found to impact employability, and a review by Guilbert et al. (2016) categorized these into three groups of factors: (1) individual characteristics, (2) organizational characteristics, and (3) governmental and educational factors. In our empirical study, we focus on determinants on the individual and organizational level. In doing so, we adopt a multiple-stakeholder perspective on employability [see Fugate et al. (2021)] wherein the interaction between the individual and their employer form the basis for safeguarding both the workers' career potential (i.e., their employability; Van der Heijde and Van der Heijden, 2006) as a contemporary form of job security, and as a viable means for strategically managing talent and a sustainable source of competitive advantage (Fugate et al., 2021).

In terms of individual characteristics, we focus on personality and risk-taking behavior. From earlier scholarly work in this field, we know that personality determines individual behavior in the workplace (Penney et al., 2011) to a considerable extent, and it appears to be an important predictor of work and career success as well (e.g., Seibert and Kraimer, 2001; Wille et al., 2013). And although previous research indicated that personality differs between public and private sector employees (Sudha and Khan, 2013), empirical work into

the relationship between personality and employability of public sector employees is scarce so far.

Regarding employees' risk-taking behavior, individuals who show a high degree of risk-taking are attracted to alternatives and seek out risks (Weber and Bottom, 1989) which might positively influence their employability. At the same time, previous research indicated that risk-taking behavior differs between public and private sector employees (Buurman et al., 2012) and to our knowledge, up until now empirical work into the relationship between risk-taking behavior and employability of public sector employees is absent at all.

Next to the impact of individual characteristics in the light of employability, which has received relatively more attention in comparison to the impact of organizational characteristics, in this study we also incorporate the role of leadership style and red tape (regulatory pressure), which we posit to be two important determinants in the public sector. Regarding leadership style, one's direct supervisor plays a crucial role when it comes to maintaining and further promoting the employability of workers within an organization (Van der Heijden, 2005; Van der Heijden et al., 2017). As regards the second organizational factor, that is red tape, to the best of our knowledge, no research has been done into the relationship between red tape and employability yet. This is unfortunate as especially in research focusing on public sector employees, it is important to pay attention to the possible consequences of the ubiquitous amount of red tape (Steijn and Knies, 2021).

This paper is structured as follows. In the next section (see section "2 Theoretical framework"), we discuss the literature on employability competences and perceived employability in relation to its individual and organizational determinants. Based on these insights, our research hypotheses are formulated. Thereafter, we elaborate on the research method in Section "3 Methodology." Subsequently, we present the outcomes of our analysis in Section "4 Results," followed by a discussion of the findings and conclusions in Section "5 Conclusion and Discussion."

2 Theoretical framework

2.1 Self-perceived employability competences and self-perceived job chances

In the scholarly literature, different approaches to employability can be distinguished, namely (1) an individual's range of abilities and attitudes (personal strengths) necessary to acquire a job (movement capital), (2) an individual's appraisal of available employment opportunities (self-perceived job chances), and (3) the realization of personal strengths and job chances, which is most noticeable when transitioning between jobs (job transitions) (Forrier et al., 2015). The assumption is that these different notions of employability are interrelated (Forrier et al., 2015), but more empirical evidence is needed to safely conclude. Following the notion of individual agency in the sustainable career framework (Van der Heijden and De Vos, 2015), the micro-level of the individual has become the core of attention in scholarly work on employability [see Fugate et al. (2021) for an historical outline]. In this study, we therefore look at the interrelatedness of two approaches to employability, namely at an individual's range of abilities and attitudes (personal strengths) that are necessary to acquire a job (movement capital) on the one hand, and employee's self-perceived job chances on the other hand. Before we discuss this relationship, we will first more clearly outline both approaches.

First, regarding the personal strengths or movement capital approach to employability, the competence-based operationalization of employability alludes to a person's perception about their own abilities, capacities and skills that promote career possibilities (Van der Heijde and Van der Heijden, 2006), and which help them to maintain or enhance their functional, learning and career resources and skills (De Vos et al., 2011). This resource-based view clearly emphasizes personal agency as a mobilizer in achieving personal and career goals. In particular, Van der Heijde and Van der Heijden (2006) conceive competence-based employability as a positive resource for achieving beneficial career outcomes as well as for present and future performance.

Second, adopting a labor market perspective, employability can be regarded as the individual's appraisal of available employment opportunities, in other words, their self-perceived job chances (Rothwell and Arnold, 2007; De Cuyper and De Witte, 2011; Vanhercke et al., 2014). Advocates of the notion of self-perceived employability argue that it captures the interplay between individual and contextual factors since people take both their individual capabilities as well as enhancing and hindering factors in their surrounding context into account when assessing their employability (Forrier et al., 2009; De Cuyper et al., 2012). An individual's appraisal of employment opportunities can be perceived with their current employer (i.e., self-perceived internal employability) or with another employer (i.e., self-perceived external employability). Forrier et al. (2015) posited that the internal versus the external labor market are important foci in employability research that should be meaningfully integrated in one and the same study, herewith inspiring future researchers in this domain.

Combining the two perspectives and the two foci explained above in our scholarly work, and building on Forrier et al. (2015), we argue that competence-based employability can be regarded as an antecedent of self-perceived employability, because it enhances the individual's perception of job opportunities. More specifically, competence-based employability plays the role of (1) foundation of the added value that each person perceives they have in the labor market; (2) motivational forces that energize and direct the search for new

alternatives; and (3) dynamizer of the actions and decisions to respond to changes [see also Bargsted et al. (2021)].

Conservation of Resources (COR) theory (Hobfoll, 1989, 2001) provides a particularly useful framework to study the relationships between these employability perspectives (Bargsted et al., 2021), as it states that people strive for obtaining and protecting their resources (Hobfoll et al., 2018), defined as anything perceived as useful to attain personal goals (Halbesleben et al., 2014). Therefore, the acquisition of personal employability competences, such as the ones conceptualized and operationalized by Van der Heijde and Van der Heijden (2006), that improve work opportunities and aspirations, are relevant personal resources that help to maintain one's job and boost career improvements. These authors defined employability as "continuously fulfilling, acquiring or creating work through the optimal use of competences" (p. 453). Their domain-independent operationalization consists of five dimensions, namely, (a) occupational expertise (domain-specific knowledge and skills), combined with four generic competences: (b) personal flexibility, meaning that one has the capacity to adapt easily to all kinds of changes in the internal and external labor market that do not pertain to one's immediate job domain; (c) anticipation and optimization, that is, preparing for and adapting to future changes in a personal and creative manner and striving for the best possible results; (d) corporate sense, or one's participation and performance in different work groups, such as organizations, teams, occupational communities and other networks; and (e) balance, which means compromising between opposing employers' interests as well as one's own (employee) opposing work, career, and private interests (ibid.).

Given the increasing need for a more flexible workforce in the public sector (Colley, 2001), in this empirical work, we focus on *occupational expertise*, being a domain-related competence, and on two flexibility-related dimensions, namely, *personal flexibility* and *anticipation and optimization*, being more generic employability dimensions (Van der Heijde and Van der Heijden, 2006). Personal flexibility is reactive and adaptive in nature, while the dimension of anticipation and optimization is a proactive and creative form of flexibility. Although the public sector, in comparison with the private one, is still characterized by a relatively higher job security and probability of long-term careers with one and the same employer (Clarke, 2017), its nature and structure are changing, and available resources (among others budgets) are decreasing (Van den Elsen et al., 2022). Altogether, this implies that public sector workers' employability competences, in particular their knowledge and skills' level and their capacities to adjust to all kinds of challenges at the workplace and in the broader labor market, are more and more relevant.

Using COR theory (Hobfoll, 1989, 2001) as our underlying framework, we propose that people who are in the possession of more employability competences, being a key personal resource at nowadays' labor market, will perceive higher chances for obtaining, maintaining and/or improving their work positions and careers. Therefore, we hypothesize the following:

> ***H1:*** *The self-perceived employability competences of public sector employees are positively related to their internal (H1a) and external (H1b) employability.*

2.2 Employability determinants

Thijssen et al. (2008) stated that personal and contextual determinants are important factors influencing workers' employability. In this study, we focus on two individual-level, personal determinants (i.e., personality and risk-taking behavior) and two organizational-level, contextual determinants (i.e., leadership style and red tape).

2.2.1 Individual-level determinants

Focusing on individual-level factors that may foster one's employability can help to explain why some employees are more employable than others (Fugate et al., 2021). An example of how personal attributes may contribute to the attainment of competences can be found in the work by Dweck and Leggett (1988). In their social-cognitive approach to motivation and personality, they describe the role played by the mind-set of people in their process of orientation toward certain goals (learning orientation vs. performance orientation) leading to adaptive or maladaptive behavioral patterns. In this section, we first discuss personality and then risk-taking behavior, being the two hypothesized personal determinants of employability that are taken into account in our study.

Personality theory proposes that the dynamic organization of mental structures and coordinated mental processes determines individuals' emotional and behavioral adjustments to their environments (Allport, 1937, 1961; James and Mazerolle, 2001). Further, this theory states that there are recurring regularities or trends in psychological features – attitudes, emotions, and ways of perceiving and thinking – that exist inside a person that explain the recurring tendencies in an individual's behavior (Hogan, 1991). As such, a central assumption is that personality determines individual behavior in the workplace to a considerable extent (Penney et al., 2011). In empirical research, personality has been found to be an important predictor of work and career success (e.g., Seibert and Kraimer, 2001; Wille et al., 2013). Wille et al. (2013) conducted a 15-year longitudinal study on perceived employability (referring to perceived job chances) and found that the Big Five traits (i.e., neuroticism, extraversion, openness, agreeableness, and conscientiousness) had substantial effects, even after controlling for a number of demographic and career-related characteristics, on perceived job chances. In a similar vein, Semeijn et al. (2020) studied the relationship between these personality traits and career success, and found

significant associations between four of the five (agreeableness appeared not to be significant) personality traits and subjective career success outcomes. Following this line of reasoning and these empirical results, we assume personality to be related to public sector employees' employability. Therefore, our second hypothesis is:

> ***H2:*** *Personality is related to both the employability competences (H2a) as well as to the internal (H2b) and external (H2c) employability of public sector employees.*

In addition to personality, in this study we pay attention to employees' risk-taking behavior as a second individual-level determinant. Individuals who show a high degree of risk-taking are attracted to alternatives and seek out risks (Weber and Bottom, 1989). Individual risk-taking has a substantial impact on people's decision-making processes and, consequently, on their career behavior (Yi and Wang, 2015). For instance, Plomp et al. (2019), in their study on job crafting and employability, found that in an environment of psychological safety people are more likely to be engaged in job crafting, and as a result enhance their employability. As psychological safety refers to employee perceptions regarding the consequences of interpersonal risk-taking (Edmondson, 1999; Baer and Frese, 2003), we posit that, just like the line of reasoning that Plomp et al. (2019) used to frame their scholarly work, individuals that portray more risk-taking behavior are more likely to engage in voice behaviors, initiative taking, and proactive behaviors (ibid.), all being important elements of job crafting.

Previous research indicated that risk-taking behavior differs between public and private sector employees with public sector employees being more risk averse than private sector employees (Buurman et al., 2012). However, to the best of our knowledge, up until now, empirical work into the relationship between risk-taking behavior and employability of public sector employees is absent at all. Building upon Plomp et al. (2019), we argue that in case people engage more in activities that are aimed at modifying their job tasks and/or relationships to create a better fit with their personal needs, goals and preferences (i.e., job crafting) (Wrzesniewski and Dutton, 2001; Tims and Bakker, 2010), they will develop more positive perceptions of their competencies and their ability to move between organizations (Chakraborty et al., 2017).

This leads to the third hypothesis:

> ***H3:*** *Risk-taking behavior is positively related to both the employability competences (H3a) of public sector employees as well as to the internal (H3b) and external (H3c) employability of public sector workers.*

2.2.2 Organizational-level determinants

The second group of determinants in our study refers to organizational characteristics influencing employability. It is often argued that organizations have the responsibility to offer employees the support and facilities necessary to enhance their employability (Forrier and Sels, 2003; Thijssen et al., 2008). Although it is recognized that employers are often hesitant to support their employees in enhancing their employability, because of their fear of losing them to a competing organization (i.e., the employability or management paradox), various studies indicate that in case of resource investment by the employer a social exchange mechanism comes into play resulting in employees having a stronger intention to remain with their current employer (e.g., Nauta et al., 2009; De Cuyper and De Witte, 2011). Moreover, when employees perceive ample opportunities for internal employability or developmental opportunities to enlarge their existing competences within their organization, they also score higher on their level of self-perceived employability (De Vos et al., 2011).

Especially the direct supervisor plays a crucial role when it comes to maintaining and further promoting the employability of employees in an organization (Van der Heijden, 2005). Traditionally, HRM implementation was primarily the responsibility of HR professionals although, to some extent, line managers have always had some responsibility for HRM because they are held accountable for the work of their subordinates (McConville and Holden, 1999). However, the balance between line managers and HR specialists with respect to HRM implementation seems to have changed. There is clear evidence that, besides their traditional supervisory duties, line managers are increasingly expected to execute HRM activities as well, with many traditional personnel practices having been devolved to line managers (Purcell and Hutchinson, 2007). This seems particularly the case for employee development practices (Renwick and MacNeil, 2002). It is widely asserted that for career enhancement to be effective in organizations, line managers need to support the development of their staff and to have the necessary skills to coach and counsel them appropriately (Yarnall, 1998). In this respect, line managers influence their subordinates' employability via supportive and inspirational behaviors, particularly those associated with transformational leadership (Van der Heijde and Van der Heijden, 2014; Xie et al., 2019).

Previous research showed differences between public sector and private sector employees in terms of their perceptions of transformational leadership, with public sector employees perceiving less individualized support (Top et al., 2015). However, scholarly work into the relationship between transformational leadership and employability is still scarce (Van den Elsen et al., 2022). Moreover, a growing body of research suggests that public managers operate within contexts that require rather distinctive skills and knowledge (Tummers and Knies, 2016) which emphasizes the importance of studying the influence of leadership within the public sector context. Previous private sector research has shown that transformational leaders influence employees' attitudes and behaviors through individualized support and intellectual stimulation, which have been found to enhance their

employability (Van der Heijden and Bakker, 2011; Böttcher et al., 2018). Building on this theoretical outline, the following hypothesis was formulated:

> ***H4:*** *A transformational leadership style is positively related to both the employability competences (H4a) as well as to the internal (H4b) and external (H4c) employability of public sector employees.*

The second organizational factor that we consider in this study concerns red tape. Red tape has been viewed as a key concept in public administration for decades, and one that can significantly impact the HRM process (Blom et al., 2021). A central facet of red tape is the presence or perception of rules that entail a compliance burden and that have no legitimate goal (Bozeman, 1993), which separates it from concepts such as formalization and green tape (Pandey and Scott, 2002; DeHart-Davis, 2009). To the best of our knowledge, so far no research has been conducted into the relationship between red tape and employability. Theoretically, red tape is argued to (a) constrain organizational practices, (b) alienate employees from their organization and, ultimately, (c) lower performance (Blom et al., 2021). Employees' experiences of red tape, which is more prevalent in public than in private sector organizations, could hinder performance effects or further stimulate the turnover of employable individuals who perceive better job chances elsewhere (Quratulain and Khan, 2015; Shim et al., 2017). We hypothesize that the negative effects of red tape on employee satisfaction, and its positive influence on departure propensity and stress (Quratulain and Khan, 2015; Giauque et al., 2019), may also negatively affect workers' employability. This leads to the fifth hypothesis:

> ***H5:*** *Red tape is negatively related to both the employability competences (H5a) and to the internal (H5b) and external (H5c) employability of public sector employees.*

Our research model (**Figure 1**) shows the incorporated individual and organizational characteristics as determinants of employability competences, which in turn are considered to influence internal and external employability.

3 Methodology

3.1 Sample and procedure

Data were collected within the Dutch public sector by the Central Bureau of Statistics on the behest of the Dutch Ministry of Interior and Kingdom Relations. In total, almost 95,000 employees (including 7,500 private sector workers) received an invitation letter to participate in the so-called Work Survey. In this letter, the respondents were guaranteed complete confidentiality and anonymity, and it was explained that the data were managed in accordance with the Dutch Personal Data Protection Act. In addition, this research was approved by the faculty's ethics committee. The sampled respondents could complete the questionnaire online, and they received two reminders as encouragement. Responses were submitted between March 12th and June 2nd 2019. A total of 39,640 respondents replied, comprising a response rate of 41.7%. For our study, we only included the respondents without a supervisory position (N = 33,768) and from public administration sectors [central government (39%), regional government (13%), local government (31%), water boards (13%), and judicial authority (4%)] (N = 13,471). Employees from educational and health care subsectors were excluded.

In total 56.8% of the respondents were male. The respondents were asked to indicate their age group (0–24; 25–29; 30–34; 35–39; 40–44; 45–49; 50–54; 55–59; 60–64; ≥65), with the average corresponding to age group 6 (between 45 and 49 years old). Furthermore, respondents were asked about their highest completed education level (ranging from 1 = practical secondary school to 8 = bachelors/master's degree from university or Ph.D.). The predominant educational levels were in group 7 and 8 which together covered 63.6% of the answers. The gender and age distributions in the participating sample are close to that of the total amount of public sector employees in the sectors included in our study, according to the Ministry's employee information base.[1] Although there are no official figures for the educational level distribution of these combined sectors, the available values for individual subsectors do not suggest that our sample is unrepresentative.

3.2 Measurement

First, we conducted an Exploratory Factor Analysis (EFA) on all latent constructs using the full data base with 39,640 respondents. The criteria used for item selection were: (1) only items with a factor loading of 0.4 or higher were included, (2) minimum of 3 items per construct unless the Cronbach's alpha outcomes did not allow this, (3) one-dimensionality; and (4) Cronbach's alpha of 0.7 or higher (Field, 2000). This exploratory factor analysis clearly indicated that the expected factor structure was found with our data. Based on the criteria, we only had to remove one of the items for the external employability measure.

We then conducted a Confirmatory Factor Analysis on the public administration data file selection (13,471 respondents). All factor loadings were significant and above 0.4. The model fit scores showed a good fit (NFI 0.93, CFI 0.94, and RMSEA 0.034). To further assess the convergent and discriminant validity of our constructs, we calculated the average variance extracted

1 https://kennisopenbaarbestuur.nl/

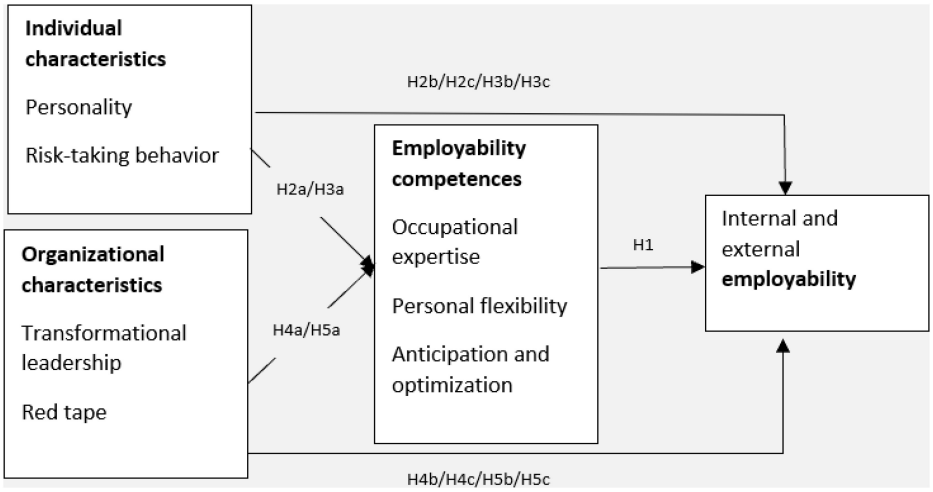


FIGURE 1
Research model.

(AVE) for each of them. The AVE scores were above 0.50 for almost all variables (Fornell and Larcker, 1981), herewith showing satisfactory convergent validity. Exceptions were found for internal employability (0.45) and for occupational expertise (0.49). However, these scores appeared to be only slightly below the threshold, and all other scores did not give cause for any concern. To assess the discriminant validity of our concepts, we assessed the squared correlation coefficients between all constructs. For none of the constructs, this coefficient was higher than the AVE scores which demonstrates discriminant validity.

Employability was measured using the items developed by Rothwell and Arnold (2007). This scale split into internal (Cronbach's alpha 0.76) and external employability (Cronbach's alpha 0.83 – 1 item removed). An example item for internal employability is "I have good prospects in this organization because my employer values my personal contribution" and an example item for external employability is "I could get any job, anywhere, so long as my skills and experience were reasonably relevant." The participants were asked to respond to the ten item statements on a five-point Likert scale (1 = fully disagree, 5 = fully agree).

The *employability competences* were measured using some of the items developed by Van der Heijde and Van der Heijden (2006). Respondents were asked about their perceived employability competences as previous research has shown that people act upon their own perceptions (Van Emmerik et al., 2012). Three dimensions of their employability competences were measured: occupational expertise (three items), personal flexibility (three items), and anticipation and optimization (four items). A sample item for occupational expertise is "In my work difficult tasks are given to me" (α = 0.72), for personal flexibility is "I am able to respond quickly to changes in my work environment" (α = 0.86), and for anticipation and optimization is "I plan further steps in my career" (α = 0.81). The participants were asked to respond to the ten item statements on a five-point Likert scale (1 = fully disagree, 5 = fully agree).

Personality was measured using the Big Five short-form 10-item measure by Rammstedt and John (2007) with 2 items for each of the five personality dimensions: neuroticism, extraversion openness, agreeableness, and conscientiousness. A sample item for neuroticism is "I am someone who gets nervous easily," for extraversion is "I am someone who is outgoing, sociable," for openness is "I am someone who has an active imagination," for agreeableness is "I am someone who is generally trusting," and for conscientiousness is "I am someone who does a thorough job." The participants were asked to respond to the ten item statements on a five-point Likert scale (1 = fully disagree, 5 = fully agree).

Risk-taking behavior was measured using three single items. (1) "Would you dare to take a controversial position openly in a group?", (2) "For your dream job, would you give up a permanent contract for a temporary one?", and (3) "Have you ever quit your job before you got a new one?". The participants were asked to respond 1 = no or 2 = yes to all three items.

Transformational leadership was measured using some items developed by Podsakoff et al. (1990). The respondents responded to six statements using a five-point Likert scale (1 = fully disagree, 5 = fully agree). A sample item is "My direct supervisor inspires us with his/her plans for the future." Again, the Cronbach's alpha was good (α = 0.86).

Red tape was measured using three items which has been used in previous research by Vermeeren and van Geest (2012) and Borst (2018) and were measured using a five-point Likert scale (1 = fully disagree, 5 = fully agree). The items were: (1) "It takes me a lot of time to comply with all the rules and obligations in my job," (2) "Rules and regulations in my

organization are more important than my experience," and (3) "Rules and procedures in my organization make it difficult for me to do my job." The Cronbach's alpha was 0.81.

Finally, five individual-level control variables were included in our analyses: gender, age group, highest completed education, contract hours per week, and contract type. We dummy-coded gender (0 = male, 1 = female). Age was categorized in ten age groups: 0–24; 25–29; 30–34; 35–39; 40–44; 45–49; 50–54; 55–59; 60–64; ≥65. Education was measured on an eight-level scale (1 = practical secondary school to 8 = bachelors/master's degree from university or Ph.D.). Contract hours was a continuous scale. Contract type was dummy-coded as 0 = permanent contract and 1 = temporary contract.

3.3 Analyses

First, the Exploratory Factor Analysis was conducted in IBM SPSS version 28. Second, the Confirmatory Factor Analysis was conducted using IBM AMOS version 28. Subsequently, we carried out structural equation modeling using IBM AMOS version 28 to test our research hypotheses.

This study was prone to suffer from common-source bias (CSB) because it fully relied on self-reported perceptual data (Podsakoff et al., 2012; Favero and Bullock, 2015). Despite such concerns, we used these data because employee perceptions and experiences are our key interest (George and Pandey, 2017). However, to properly address the possibility of CSB we conducted a Harman-1 factor analysis which showed no indication of inflated correlations in our data. The sums of squared% of variance was about 15%, which is well below the threshold of 50%.

4 Results

Table 1 shows the means (M), standard deviations (SD) and correlations between all model variables. The results show that public sector employees consider themselves to be reasonably internally employable (M = 3.26 on a five-point scale). However, they consider themselves more externally employable (M = 3.42 on a five-point scale) than internally employable. Regarding the employability competences, the results show that public sector employees feel that they have a reasonable amount of occupational expertise (M = 3.90 on a five-point scale) and personal flexibility (M = 3.90 on a five-point scale). The degree to which employees believe to be able to anticipate and optimize is on average a bit lower (M = 3.14 on a five-point scale) compared to the scores for occupational expertise and personal flexibility.

Of the big five personality traits, conscientiousness has the highest average score (M = 4.04 on a five-point scale) in comparison with the other four personality traits (2.17 for neuroticism, 3.36 for extraversion, 3.51 for openness, and 4.03 for agreeableness). Regarding risk-taking behavior, employees score relatively high on daring to take a controversial position openly in a group (M = 1.86 on a two-point scale). About half of the respondents indicated that they are willing to give up a permanent contract in exchange for a temporary contract for a dream job (M = 1.49 on a two-point scale). A small proportion of respondents indicated that in the past there was a situation wherein they already had quit their job before finding a new one (M = 1.21 on a two-point scale). Finally, on average, employees experience transformational leadership (M = 3.37 on a five-point scale) and red tape (M = 3.03 on a five-point scale) to a reasonable extent.

To test our research hypotheses, we conducted structural equation modeling. The outcomes of this structural model indicated an appropriate fit: NFI = 0.90, CFI = 0.91, and RMSEA = 0.037. In Figure 2, the overall results are presented. Only the statistically significant relationships are presented (with a significance level of 0.05). The numerical scores on all lines indicate standardized regression coefficients (β), and the scores in brackets are the explained variances. The control variables (gender, age group, highest completed education, contract hours per week, and contract type) are part of this tested model, but are for reasons of parsimoniousness not presented in the figure. These results can be found in Table 2.

First, we discuss the results of the control variables in Table 2. Gender (1 = female) appears to have a negative relationship with occupational expertise and with both internal and external employability, and a positive relationship with anticipation and optimization. Furthermore, the outcomes of our analyses show a negative relationship between age on the one hand, and all three of the incorporated employability competences, and both internal and external employability on the other hand. Educational level appears to be positively related to occupational expertise, anticipation and optimization, and external employability. Contract hours are positively related to all three included employability competences. Finally, contract type (1 = temporary) is negatively related to occupational expertise, and positively related to anticipation and optimization, and to both internal and external employability.

Hypothesis 1 stated that the self-perceived employability competences of public sector employees are positively related to their internal (H1a) and external (H1b) employability. The results in Figure 2 show that all three employability competences are indeed positively related to both internal employability (occupational expertise β = 0.209, $p < 0.001$; personal flexibility β = 0.108, $p < 0.001$; anticipation and optimization β = 0.132, $p < 0.001$) and external employability (occupational expertise β = 0.276, $p < 0.001$; personal flexibility β = 0.091, $p < 0.001$; anticipation and optimization β = 0.228, $p < 0.001$) thereby fully supporting Hypothesis 1a and 1b.

Regarding the second hypothesis, that personality is related to both the employability competences (H2a) as well as to

TABLE 1 Means (*M*), standard deviations (*SD*), and correlations.

	M	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Internal employability	3.26	0.69																			
2. External employability	3.42	0.79	0.433**																		
3. Occupational expertise	3.90	0.57	0.272**	0.367**																	
4. Personal flexibility	3.90	0.61	0.300**	0.303**	0.395**																
5. Anticipation and optimization	3.14	0.77	0.218**	0.408**	0.202**	0.307**															
6. Neuroticism	2.17	0.74	−0.094**	−0.154**	−0.303**	−0.334**	−0.075**														
7. Extraversion	3.36	0.84	0.142**	0.115**	0.119**	0.206**	0.116**	−0.135**													
8. Openness	3.51	0.80	0.073**	0.072**	0.111**	0.128**	0.133**	−0.022*	0.177**												
9. Agreeableness	4.03	0.61	0.110**	0.070**	0.086**	0.192**	0.038**	−0.124**	0.170**	0.171**											
10. Conscientiousness	4.04	0.70	−0.002	0.025*	0.114**	0.074**	0.000	−0.126**	0.038**	−0.080**	0.179**										
11. Risk-taking: take a controversial position	1.86	0.35	0.040**	0.093**	0.190**	0.145**	0.038**	−0.184**	0.200**	0.122**	−0.043**	−0.052**									
12. Risk-taking: give up permanent contract	1.49	0.50	0.089**	0.271**	0.081**	0.146**	0.307**	−0.035**	0.061**	0.075**	0.008	−0.093**	0.015								
13. Risk-taking: resign from job	1.21	0.41	−0.015	0.081**	0.052**	0.076**	0.103**	−0.019	0.044**	0.086**	0.000	−0.022	0.015	0.170**							
14. Transformational leadership	3.37	0.69	0.501**	0.119**	0.067**	0.146**	−0.003	−0.036**	0.055**	0.026**	0.114**	0.034**	0.018	−0.033**	0.004						
15. Red tape	3.03	0.88	−0.259**	−0.041**	0.037*	−0.136**	0.056**	0.056**	−0.031**	0.049**	−0.054**	−0.080**	0.038*	−0.011	0.005	−0.229**					
16. Gender (1 = female)	0.43	0.50	−0.008	−0.031*	−0.069**	0.021	0.108**	0.125**	0.123**	−0.023**	0.046**	0.138**	−0.152**	0.097**	0.094**	−0.018*	−0.154**				
17. Age	6.56	2.14	−0.201**	−0.345**	−0.052**	−0.120**	−0.402**	−0.099**	0.003	0.044**	0.012	0.079**	0.096**	−0.348**	−0.021	−0.036**	0.044**	−0.163**			
18. Educational level	6.41	1.72	0.104**	0.195**	0.210**	0.048**	0.193**	0.010	−0.031**	0.052**	−0.037**	−0.160**	0.032*	0.264**	0.026*	−0.026**	0.020*	0.064**	−0.217**		
19. Contract hours	33.30	6.47	0.065**	0.083**	0.134**	0.068**	0.059**	−0.091**	−0.017	0.009	−0.036**	−0.059**	0.091**	−0.002	−0.036**	0.009	0.070**	−0.321**	−0.014	0.042**	
20. Contract type (1 = flexible)	0.08	0.28	0.089**	0.161**	−0.064**	0.066**	0.168**	0.042**	0.006	−0.003	−0.008	−0.036**	−0.042**	0.193**	0.066**	0.028**	−0.047**	0.054**	−0.327**	0.074**	−0.023**

*$p < 0.05$; **$p < 0.01$.

10.3389/fpsyg.2022.1041618

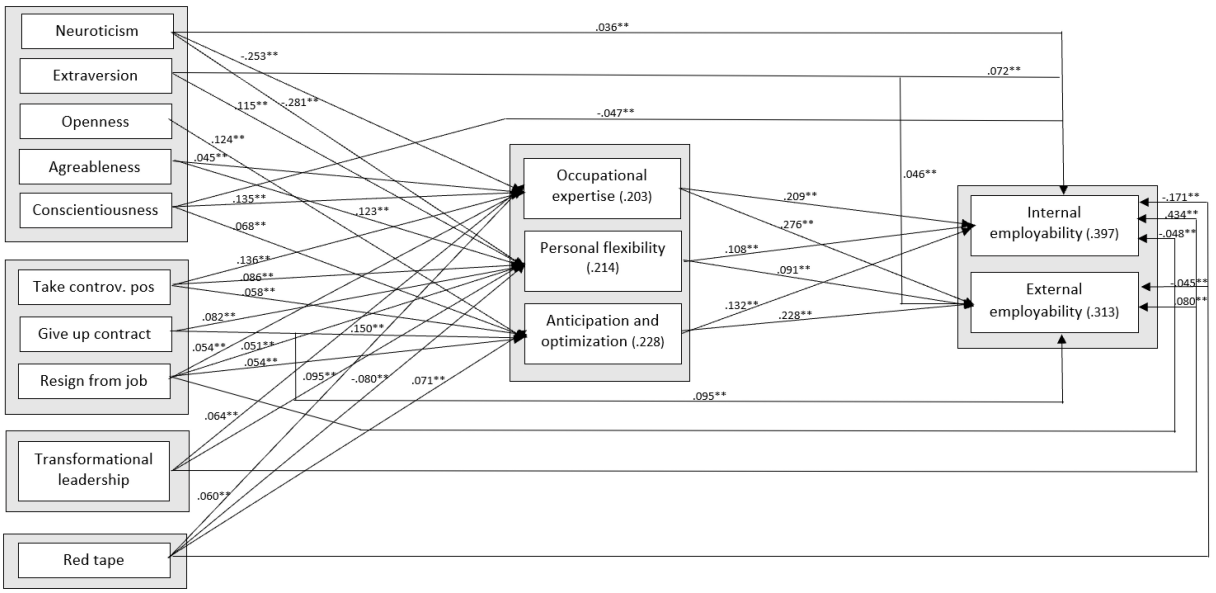


FIGURE 2
Structural equation model. **$p < 0.01$.

the internal (H2b) and external (H2c) employability of public sector employees, the results in Figure 2 show a statistically significant relationship between one or more of the personality dimensions and all three employability competences, thereby providing ample support for Hypothesis 2a. More specifically, neuroticism is negatively related to occupational expertise (β = −0.253, $p < 0.001$) and to personal flexibility (β = −0.281, $p < 0.001$). Extraversion is only positively related to personal flexibility (β = 0.115, $p < 0.001$). Openness is only positively related to anticipation and optimization (β = 0.124, $p < 0.001$). Agreeableness is positively related to occupational expertise (β = 0.045, $p < 0.001$) and to personal flexibility (β = 0.123, $p < 0.001$). Finally, conscientiousness is positively related to occupational expertise (β = 0.135, $p < 0.001$) and anticipation and optimization (β = 0.068, $p < 0.001$).

TABLE 2 Standardized regression weights.

			β	*P*
Occupational expertise	<—	Gender	−0.028	0.045
Anticipation and optimization	<—	Gender	0.064	***
Internal employability	<—	Gender	−0.048	***
External employability	<—	Gender	−0.094	***
Occupational expertise	<—	Age	−0.083	***
Personal flexibility	<—	Age	−0.122	***
Anticipation and optimization	<—	Age	−0.333	***
Internal employability	<—	Age	−0.095	***
External employability	<—	Age	−0.186	***
Occupational expertise	<—	Educational level	0.219	***
Anticipation and optimization	<—	Educational level	0.073	***
External employability	<—	Educational level	0.032	0.008
Occupational expertise	<—	Contract hours	0.086	***
Personal flexibility	<—	Contract hours	0.048	***
Anticipation and optimization	<—	Contract hours	0.066	***
Occupational expertise	<—	Contract type	−0.085	***
Anticipation and optimization	<—	Contract type	0.029	0.013
Internal employability	<—	Contract type	0.025	***
External employability	<—	Contract type	0.056	0.034

***$p < 0.001$.

As regards Hypothesis 2b, the results show a significant relationship between three of the five dimensions of personality and internal employability, thereby confirming our expectation. In particular, neuroticism (β = 0.036, $p < 0.01$) and extraversion (β = 0.072, $p < 0.001$) are positively related with internal employability, while conscientiousness (β = −0.047, $p < 0.001$) is negatively related with internal employability.

Finally, Hypothesis 2c, which assumes a positive relationship between personality and external employability is partly confirmed as well. In particular, the results of our analyses indicate that extraversion has a positive relationship with external employability (β = 0.046, $p < 0.001$).

Our third hypothesis was that risk-taking behavior is positively related to both the employability competences (H3a) as well as to the internal (H3b) and external (H3c) employability of public sector workers. The results in Figure 2 show that the higher the willingness to take risks, the higher the scores on the employability competences, thereby supporting Hypothesis 3a. Employees who dare to take a controversial position openly in a group score higher on all three employability competences

(occupational expertise β = 0.136, $p < 0.001$; personal flexibility β = 0.086, $p < 0.001$; anticipation and optimization β = 0.058, $p < 0.001$). Furthermore, employees who are willing to give up a permanent contract in exchange for a temporary contract for a dream job score higher on personal flexibility (β = 0.082, $p < 0.001$) and on anticipation and optimization (β = 0.150, $p < 0.001$). Finally, employees who indicated that they had already quit a job before finding a new one scored higher on all three employability competences (occupational expertise β = 0.054, $p < 0.001$; personal flexibility β = 0.051, $p < 0.001$; anticipation and optimization β = 0.054, $p < 0.001$). Altogether, with these outcomes Hypothesis 3a is strongly supported.

The results of our analyses do not show any support for Hypothesis 3b, which stated a positive relationship between risk-taking behavior and internal employability. On the contrary, our results indicated that employees who reported that they had already quit a job before finding a new one scored lower on internal employability (β = −0.048, $p < 0.001$).

Hypothesis 3c about the positive relationship between risk-taking behavior and external employability is partly supported with these data. Those who would be willing to give up a permanent contract for a temporary contract score higher on external employability (β = 0.095, $p < 0.001$).

Hypothesis 4 stated that a transformational leadership style is positively related to both the employability competences (H4a) as well as to the internal (H4b) and external (H4c) employability of public sector employees. The results presented in **Figure 2** show that Hypothesis 4a is largely confirmed with these data. More specifically, there is a positive relationship between transformational leadership, on the one hand, and both occupational expertise (β = 0.064, $p < 0.001$) and personal flexibility (β = 0.095, $p < 0.001$), on the other hand. Remarkably, there is no significant relationship between transformational leadership and anticipation and optimization.

Hypotheses 4b and 4c are fully confirmed in this study. There is a positive relationship between transformational leadership, on the one hand, and both internal (β = 0.434, $p < 0.001$) and external employability (β = 0.080, $p < 0.001$), on the other hand. In particular, when a manager displays more transformational leadership, employees experience higher internal and external employability.

Finally, we expected red tape to be negatively related to both the employability competences (H5a) and to the internal (H5b) and external (H5c) employability of public sector employees. The results are presented in **Figure 2**. With regard to Hypothesis 5a, it is striking that there is a positive relationship of red tape with occupation expertise (β = 0.060, $p < 0.001$), and with anticipation and optimization (β = 0.071, $p < 0.001$), while there appears to be a negative relationship with personal flexibility (β = −0.080, $p < 0.001$). Therefore, there is just weak support for Hypothesis 5a with our data.

Furthermore, in line with Hypothesis 5b, red tape appears to have a negative relationship with employees' internal employability (β = −0.171, $p < 0.001$). In other words, if people experience more red tape, they consider themselves less employable within their own organization. In a similar vein, red tape also appears to have a negative relationship with external employability (β = −0.045, $p < 0.001$), herewith confirming Hypothesis 5c as well.

5 Conclusion and discussion

In view of the increased aging of the population and the related labor shortages, which can be observed to a great extent in the public sector, and the speed at which changes (e.g., globalization, technological progress and innovation, and demographic trends) (Fugate et al., 2021) are taking place, paying attention to the employability of public sector workers is crucial. After all, public service delivery strongly depends on the employability of public sector employees.

Therefore, this scholarly work was aimed to examine both employability competencies and perceived internal and external employability, and their individual- and organizational-level determinants in the public sector context. Given the lack of empirical research on employability in public organizations, the first contribution of our work is that with our approach we partly close an important gap in the public sector literature. This is more and more important given the increasing and changing public service demands and skills' needs, and the graying of the public sector population. The latter urges management to protect and ideally further enhance their employability, also in their later career stages.

As regards the second contribution of our work, building on Forrier et al. (2015) who called for more research integrating different notions of employability, both employability competences (i.e., employability operationalized as movement capital; Perspective 1) and perceptions of one's internal and external employability opportunities (i.e., employability operationalized as self-perceived job chances; Perspective 2) have been incorporated in one and the same study. Last but not least, in line with the notion of sustainable careers (De Vos et al., 2020) which posits that both the individual career holder and their surrounding context, in particular their employer, are key stakeholders who need to safeguard workers' employability, both individual-level and organizational-level determinants are taken into account. Adopting such a systemic or multiple-stakeholder perspective (Colakoglu et al., 2006) is an important third contribution of our study. After all, the challenges surrounding sound employability management encompass a dual responsibility, and it is required that over and above individual career management, other parties, such as one's employer are actively involved [see also Van der Heijden (2005)].

The outcomes of our study show that public administration employees are reasonably internally and externally employable

so there is certainly room for improvement. This result supports our approach to gain more insight into the factors that can influence employability. In particular, our results indicate that the three employability competences (occupational expertise, personal flexibility, and anticipation and optimization) are all related with the internal and external employability of employees in public administration. Herewith, this study is one of the first providing empirical evidence for the interrelatedness between different notions of employability, i.e., movement capital on the one hand and self-perceived job chances on the other hand. In other words, people who are in the possession of more employability competences, being a key personal resource at nowadays' labor market, indeed perceive higher chances for obtaining, maintaining and/or improving their work positions and careers.

Furthermore, this empirical study shows that both individual and organizational characteristics influence the employability of public sector employees. This finding underlines the dual responsibility of the employee and the employer (Philippaers et al., 2019) (in this case, the immediate supervisor as well as the employer) with regard to monitoring and further promoting employability competences through this workers' perceptions about employment opportunities (both within and outside the organization). The individual characteristics (personality and risk-taking behavior) are mainly related to the employability competences, whereas the organizational characteristics (transformational leadership and red tape) appear to play a major role in the internal and external employability of public sector workers.

A notable result is the negative relationship between risk-taking behavior and internal employability. Our results indicated that employees who reported that they had already quit a job before finding a new one scored lower on internal employability. This is counter-intuitive in our opinion, as one would expect that people are not inclined 'to give up what they have,' especially not in case they lack trust in their knowledge and skills that are needed in nowadays' labor market. At the same time, our assumption was confirmed in case one's external employability was the outcome measure. In addition, this study shows quite large differences in the degree of risk-taking behavior, depending on the aspect one looks at, and the results show that the relationships of the three risk-taking items with employability competences and internal and external employability are also different. So, it seems to matter which aspect of risk-taking behavior you look at in relation to employability of public sector employees. Altogether these results call for more research, but above all it endorses the importance of distinguishing between internal and external employability in one and the same study, as also posited by Forrier et al. (2015).

Of the organizational characteristics, a transformational leadership style has a positive relationship with two of the three employability competences and with internal and external employability which emphasizes the important role of the supervisor (Van der Heijden, 2005) when we consider workers' employability in the public sector context. Remarkably, there is no significant relationship between transformational leadership and anticipation and optimization. This might indicate that managers are mainly occupied with stimulating the employability competences of employees in the current situation, and are less focused on influencing the competence of employees to prepare for and adapt to future changes, i.e., being proactive. This outcome is fully in line with previous research by Van der Heijden and associates and referred to by the concept of instrumental leadership (Van der Heijden, 2005), being leadership that is focused on the here-and-now and less future-oriented, instead of appropriate people management that also pays core attention to employees' career sustainability over time (De Vos et al., 2020) [see also Boerlijst et al. (1993)].

In line with our assumptions, red tape is negatively related to both internal and external employability. One striking result is that red tape shows a positive relationship with two of the three employability competences, namely with occupational expertise and with anticipation and optimization of employees. More research is needed to clarify this outcome. It could be that the specific content of the regulatory burden plays an important role. Based on our research, it seems that some rules can indeed lead to an increase in employees' competences, i.e., can have positive effects. Since, to the best of our knowledge, this is the very first study to examine the influence of red tape on employability, we recommend that follow-up research distinguishes between different types of rules, for instance, rules that are experienced as a major stressor/obstacle versus challenging rules or in other words by making a distinction between red tape (ineffective rules) and green tape (effective rules) and the way in which these rules are implemented within the organization (DeHart-Davis, 2009).

5.1 Limitations and future research

First of all, our research design is cross-sectional, which means that we are unable to establish evidence of a causal relationship between the variables under study. Longitudinal data is needed to better understand the causal and long-term effects of individual and organizational characteristics on employability competences and on internal and external employability. Research using multi-wave designs can help us to obtain more specific information about the stability and change of the variables, and about cross-lagged (i.e., over time) relationships (Spurk and Abele, 2014). A developmental approach to employability and consideration of the diversity of intra-individual change trajectories over time (Martin and Hofer, 2004; De Jonge and Dormann, 2006) might also be

a very appealing approach for future research. Furthermore, both experimental and qualitative studies have the potential to advance our insight in the phenomenon of employability, and its inherent dynamism.

Second, as already stated in the "3 Methodology" section, there might be a common-source bias, which may have inflated correlations among the variables in our research. To properly address the possibility of CSB we conducted a Harman-1 factor analysis which showed no indication of inflated correlations in our data. Moreover, we used these data because employee perceptions and experiences are our key interest (George and Pandey, 2017).

5.2 Practical implications

Based on the results of this study, it is recommended for the management of public sector organizations to pay careful attention to monitoring and, where possible, further promoting the employability of all workers throughout their career. In order to prevent for a loss of employability competences as people grow older, their direct supervisors should effortfully invest in opportunities for maintaining the employability competences of their employees by adopting tailored strategies that preferably take into account a broader conceptualization of age [see Sterns and Doverspike (1989) who differentiated between chronological, organizational, functional, psychosocial, and life-span development age for more details]. After all, the development and further enhancement of employability competencies across the life-span requires that both the individual worker and their employer take into account that aging at work is a multi-dimensional process indicating changes in psychological, physical, social as well as societal functioning across time (De Lange et al., 2006; Kooij et al., 2008). Obviously, this process of aging at work has a profound impact on workers' employability (De Lange et al., 2021).

In addition, the differences between men and women, differences between employees with different educational backgrounds and differences in the number of contract hours and contract type should also be taken into account. In doing so, individual customization can be carried out whereby HRM activities should be aimed at increasing those specific employability competences that require attention. We advocate a non-normative approach to this and to link up with the preferences, abilities possibilities and limitations of the employee, being the owner of his/her career as a person (Van der Heijden, 2005).

If one wants to influence the internal employability of employees, it is especially important to pay attention to the role of the supervisor. The more constructive (transformational) leadership employees experience, the more likely they are to consider themselves to be more internally employable. At the same time, it is important to reduce the amount of red tape in order to increase positive perceptions regarding one's internal employability. Personality and risk-taking are more difficult to influence, although, as this study shows, they do have an influence on employability competences and on internal and external employability.

If external employability is to be influenced, it is particularly important to invest in occupational expertise and in the anticipation and optimization of employees. These competencies are partly dependent on the personality and risk-taking behavior of the employee and partly on the experienced (degree of transformational) leadership style and red tape.

Data availability statement

Publicly available datasets were analyzed in this study. This data can be found here: https://easy.dans.knaw.nl/ui/datasets/id/easy-dataset:161487/tab/2.

Ethics statement

The studies involving human participants were reviewed and approved by Erasmus Research Services, Secretary Research Ethics Review. The patients/participants provided their written informed consent to participate in this study.

Author contributions

Both authors listed have made a substantial, direct, and intellectual contribution to the work, and approved it for publication.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

References

Allport, G. W. (1937). *Personality: A psychological interpretation*. PP. XIV, 588. New York, NY: Henry Holt & Co.

Allport, G. W. (1961). *Pattern and growth in personality*. Holt: Reinhart & Winston.

Bach, S., and Bordogna, L. (2016). "Emerging from the crisis: The transformation of public service employment relations?," in *Public service management and employment relations in Europe*, (London: Routledge), 19–46.

Baer, M., and Frese, M. (2003). Innovation is not enough: Climates for initiative and psychological safety, process innovations, and firm performance. *J. Organ. Behav.* 24, 45–68. doi: 10.1002/job.179

Bargsted, M., Yeves, J., Merino, C., and Venegas-Muggli, J. I. (2021). Career success is not always an outcome: Its mediating role between competence employability model and perceived employability. *Career Dev. Int.* 26, 119–139. doi: 10.1108/CDI-06-2020-0141

Blom, R., Borst, R. T., and Voorn, B. (2021). Pathology or inconvenience? A meta-analysis of the impact of red tape on people and organizations. *Rev. Public Pers. Adm.* 41, 623–650. doi: 10.1177/0734371X20924117

Boerlijst, J. G., Van der Heijden, B. I. J. M., and Van Assen, A. (1993). *Veertigplussers in de onderneming [Over-forties in the organization]*. Assen: Van Gorcum/Stichting Management Studies.

Borst, R. T. (2018). Comparing work engagement in people-changing and people-processing service providers: A mediation model with red tape, autonomy, dimensions of PSM, and performance. *Public Pers. Manag.* 47, 287–313. doi: 10.1177/0091026018770225

Böttcher, K., Albrecht, A. G., Venz, L., and Felfe, J. (2018). Protecting older workers' employability: A survey study of the role of transformational leadership. *German J. Hum. Resour. Manag.* 32, 120–148. doi: 10.1177/2397002218763001

Boyne, G. A., Meier, K. J., O'Toole, J. L. Jr., and Walker, R. (2006). *Public service performance: Perspectives on measurement and management*. Cambridge: Cambridge University Press.

Bozeman, B. (1993). A theory of government "Red Tape.". *J. Public Adm. Res. Theory* 3, 273–303. doi: 10.1093/oxfordjournals.jpart.a037171

Bozeman, B. (2010). Hard lessons from hard times: Reconsidering and reorienting the 'managing decline' literature. *Public Adm. Rev.* 70, 557–563. doi: 10.1111/j.1540-6210.2010.02176.x

Buurman, M., Delfgaauw, J., Dur, R., and Van den Bossche, S. (2012). Public sector employees: Risk averse and altruistic? *J. Econ. Behav. Organ.* 83, 279–291. doi: 10.1016/j.jebo.2012.06.003

Chakraborty, T., Gupta, D., and Saha, R. (2017). Role of psychological predisposition on employability of management students: Moderation analysis through soft skills training. *Int. J. Indian Psychol.* 4, 101–122.

Clarke, M. (2017). Building employability through graduate development programmes. *Pers. Rev.* 46, 792–808. doi: 10.1108/PR-12-2015-0321

Colakoglu, S., Lepak, D. P., and Hong, Y. (2006). Measuring HRM effectiveness: Considering multiple stakeholders in a global context. *Hum. Resour. Manag. Rev.* 16, 209–218. doi: 10.1016/j.hrmr.2006.03.003

Colley, L. (2001). The changing face of public sector employment. *Austr. J. Public Adm.* 60, 9–20. doi: 10.1111/1467-8500.00194

De Cuyper, N., and De Witte, H. (2011). The management paradox: Self-rated employability and organizational commitment and performance. *Pers. Rev.* 40, 152–172. doi: 10.1108/00483481111106057

De Cuyper, N., Mäkikangas, A., Kinnunen, U., Mauno, S., and Witte, H. D. (2012). Cross-lagged associations between perceived external employability, job insecurity, and exhaustion: Testing gain and loss spirals according to the conservation of resources theory. *J. Organ. Behav.* 33, 770–788. doi: 10.1002/job.1800

De Jonge, J., and Dormann, C. (2006). Stressors, resources, and strain at work: A longitudinal test of the triple-match principle. *J. Appl. Psychol.* 91, 1359–1374. doi: 10.1037/0021-9010.91.5.1359

De Lange, A. H., Taris, T. W., Jansen, P., Smulders, P., Houtman, I., and Kompier, M. (2006). "Age as a factor in the relation between work and mental health: Results from the longitudinal TAS survey," in *Occupational health psychology: European perspectives on research, education and practice*, Vol. 1, eds J. Houdmont and S. McIntyre (Maia: ISMAI Publications), 21–45.

De Lange, A. H., Van der Heijden, B., Van Vuuren, T., Furunes, T., De Lange, C., and Dikkers, J. (2021). Employable as we age? A systematic review of relationships between age operationalizations and employability. *Front. Psychol.* 11:605684. doi: 10.3389/fpsyg.2020

De Vos, A., De Hauw, S., and Van der Heijden, B. I. J. M. (2011). Competency development and career success: The mediating role of employability. *J. Voc. Behav.* 79, 438–447. doi: 10.1016/j.jvb.2011.05.010

De Vos, A., Van der Heijden, B. I. J. M., and Akkermans, J. (2020). Sustainable careers: Towards a conceptual model. *J. Vocat. Behav.* 117:103196. doi: 10.1016/j.jvb.2018.06.011

DeHart-Davis, L. (2009). Green tape: A theory of effective organizational rules. *J. Public Adm. Res. Theory* 19, 361–384. doi: 10.1093/jopart/mun004

Dweck, C. S., and Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychol. Rev.* 95:256. doi: 10.1037/0033-295X.95.2.256

Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Adm. Sci. Quart.* 44, 350–383. doi: 10.2307/2666999

Favero, N., and Bullock, J. B. (2015). How (not) to solve the problem: An evaluation of scholarly responses to common source bias. *J. Public Adm. Res. Theory* 25, 285–308. doi: 10.1093/jopart/muu020

Field, A. (2000). *Discovering statistics using SPSS:(and sex, drugs and rock'n'roll)*, Vol. 497. Thousand Oaks, CA: Sage.

Fornell, C., and Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *J. Mark. Res.* 18, 382–388. doi: 10.1177/002224378101800313

Forrier, A., and Sels, L. (2003). The concept employability: A complex mosaic. *Int. J. Hum. Resourc. Dev. Manag.* 3, 102–124. 002414 doi: 10.1504/ijhrdm.2003

Forrier, A., Sels, L., and Stynen, D. (2009). Career mobility at the intersection between agent and structure: A conceptual model. *J. Occup. Organ. Psychol.* 82, 739–759. doi: 10.1348/096317909X470933

Forrier, A., Verbruggen, M., and De Cuyper, N. (2015). Integrating different notions of employability in a dynamic chain: The relationship between job transitions, movement capital and perceived employability. *J. Voc. Behav.* 89, 56–64. doi: 10.1016/j.jvb.2015.04.007

Fugate, M., Van der Heijden, B., De Vos, A., Forrier, A., and De Cuyper, N. (2021). Is what's past prologue? A review and agenda for contemporary employability research. *Acad. Manag. Ann.* 15, 266–298. doi: 10.5465/annals.2018.0171

George, B., and Pandey, S. K. (2017). We know the Yin—But where is the Yang? Toward a balanced approach on common source bias in public administration scholarship. *Rev. Public Pers. Adm.* 37, 245–270. doi: 10.1177/0734371X17698189

Giauque, D., Anderfuhren-Biget, S., and Varone, F. (2019). Stress and turnover intents in international organizations: Social support and work–life balance as resources. *Int. J. Hum. Resour. Manag.* 30, 879–901. doi: 10.1080/09585192.2016.1254105

Guilbert, L., Bernaud, J. L., Gouvernet, B., and Rossier, J. (2016). Employability: Review and research prospects. *Int. J. Educ. Voc. Guid.* 16, 69–89. doi: 10.1007/s10775-015-9288-4

Halbesleben, J. R., Neveu, J. P., Paustian-Underdahl, S. C., and Westman, M. (2014). Getting to the "COR" understanding the role of resources in conservation of resources theory. *J. Manag.* 40, 1334–1364. doi: 10.1177/0149206314527130

Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *Am. Psychol.* 44, 513–524. doi: 10.1037/0003-066X.44.3.513

Hobfoll, S. E. (2001). The influence of culture, community, and the nested-self in the stress process: Advancing conservation of resources theory. *Appl. Psychol.* 50, 337–421. doi: 10.1111/1464-0597.00062

Hobfoll, S. E., Halbesleben, J., Neveu, J. P., and Westman, M. (2018). Conservation of resources in the organizational context: The reality of resources and their consequences. *Ann. Rev. Organ. Psychol. Organ. Behav.* 5, 103–128. doi: 10.1038/s41598-020-71501-0

Hogan, R. T. (1991). "Personality and personality measurement," in *Handbook of industrial and organizational psychology*, eds M. D. Dunnette and L. M. Hough (Washington, DC: Consulting Psychologists Press.), 873–919.

James, L. R., and Mazerolle, M. D. (2001). *Personality in work organizations*. Thousand Oaks, CA: Sage Publications.

Kooij, D., De Lange, A., Jansen, P., and Dikkers, J. (2008). Older workers' motivation to continue to work: Five meanings of age: A conceptual review. *J. Manage. Psychol.* 23, 364–394. doi: 10.1108/02683940810869015

Martin, M., and Hofer, S. M. (2004). Intraindividual variability, change, and aging: Conceptual and analytical issues. *Gerontology* 50, 7–11. doi: 10.1159/000074382

McConville, T., and Holden, L. (1999). The filling in the sandwich: HRM and middle managers in the health sector. *Pers. Rev.* 28, 406–424. doi: 10.1108/00483489910286738

Nauta, A., Van Vianen, A., Van der Heijden, B., Van Dam, K., and Willemsen, M. (2009). Understanding the factors that promote employability orientation: The impact of employability culture, career satisfaction, and role breadth self-efficacy. *J. Occup. Organ. Psychol.* 82, 233–251. doi: 10.1348/096317908X320147

OECD. (2017). *Skills for a high performing civil service*. Paris: OECD Publishing.

Osborne, D., and Gaebler, T. (1992). *Reinventing government: How the entrepreneurial spirit is transforming the public sector*. Reading, MA: Addison-Welsey.

Pandey, S. K. (2010). Cutback management and the paradox of publicness. *Public Adm. Rev.* 70, 564–571. doi: 10.1111/j.1540-6210.2010.02177.x

Pandey, S. K., and Scott, P. G. (2002). Red tape: A review and assessment of concepts and measures. *J. Public Adm. Res. Theory* 12, 553–580. doi: 10.1093/oxfordjournals.jpart.a003547

Penney, L. M., David, E., and Witt, L. A. (2011). A review of personality and performance:Identifying boundaries, contingencies, and future research directions. *Hum. Resour. Manag. Rev.* 21, 297–310. doi: 10.1016/j.hrmr.2010.10.005

Philippaers, K., De Cuyper, N., and Forrier, A. (2019). Employability and performance: The role of perceived control and affective organizational commitment. *Pers. Rev.* 48, 1299–1317. doi: 10.1108/PR-04-2017-0098

Plomp, J., Tims, M., Khapova, S. N., Jansen, P. G., and Bakker, A. B. (2019). Psychological safety, job crafting, and employability: A comparison between permanent and temporary workers. *Front. Psychol.* 10:974. doi: 10.3389/fpsyg.2019.00974

Podsakoff, P. M., MacKenzie, S. B., Moorman, R., and Fetter, R. (1990). The impact of transformational leader behaviors on employee trust, satisfaction, and organizational citizenship behaviors. *Leadersh. Q.* 1, 107–142. doi: 10.1016/1048-9843(90)90009-7

Podsakoff, P. M., MacKenzie, S. B., and Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annu. Rev. Psychol.* 63, 539–569. doi: 10.1146/annurev-psych-120710-100452

Pollitt, C., and Bouckaert, G. (2004). *Public management reform. A comparative analysis*. Oxford: Oxford University Press Inc.

Purcell, J., and Hutchinson, S. (2007). Front-line managers as agents in the HRM-performance causal chain: Theory, analysis and evidence. *Hum. Resour. Manag. J.* 17, 3–20. doi: 10.1111/j.1748-8583.2007.00022.x

Quratulain, S., and Khan, A. K. (2015). Red tape, resigned satisfaction, public service motivation, and negative employee attitudes and behaviors: Testing a model of moderated mediation. *Rev. Public Pers. Adm.* 35, 307–332. doi: 10.1177/0734371X13511646

Raemdonck, I., Tillema, H., de Grip, A., Valcke, M., and Segers, M. (2012). Does self-directedness in learning and careers predict the employability of low-qualified employees? *Voc. Learn.* 5, 137–151. doi: 10.1007/s12186-011-9072-7

Rammstedt, B., and John, O. P. (2007). Measuring personality in one minute or less: A 10-item short version of the big five inventory in english and German. *J. Res. Pers.* 41, 203–212. doi: 10.1016/j.jrp.2006.02.001

Raudla, R., Savi, R., and Randma-Liiv, T. (2013). *Literature review on cutback management. COCOPS workpackage 7 deliverable 1. European commission 7th framework programme*. Available online at: https://repub.eur.nl/pub/40927

Renwick, D., and MacNeil, C. M. (2002). Line manager involvement in careers. *Career Dev. Int.* 7, 407–414. doi: 10.1108/13620430210449939

Rodrigues, R., Butler, C. L., and Guest, D. (2020). Evaluating the employability paradox: When does organizational investment in human capital pay off? *Int. J. Hum. Resour. Manag.* 31, 1134–1156. doi: 10.1080/09585192.2019.1704825

Rothwell, A., and Arnold, J. (2007). Self-perceived employability: Development and validation of a scale. *Pers. Rev.* 36, 23–41. doi: 10.1108/00483480710716704

Seibert, S. E., and Kraimer, M. L. (2001). The five-factor model of personality andcareer success. *J. Voc. Behav.* 58, 1–21. doi: 10.1006/jvbe.2000.1757

Semeijn, J. H., Van der Heijden, B. I. J. M., and De Beuckelaer, A. (2020). Personality traits and types in relation to career success: An empirical comparison using the big five. *Appl. Psychol.* 69, 538–556. doi: 10.1111/apps.12174

Shim, D. C., Park, H. H., and Eom, T. H. (2017). Street-level bureaucrats' turnover intention: Does public service motivation matter? *Int. Rev. Adm. Sci.* 83, 563–582. doi: 10.1177/0020852315582137

Spurk, D., and Abele, A. E. (2014). Synchronous and time-lagged effects between occupational self-efficacy and objective and subjective career success: Findings from a four-wave and 9-year longitudinal study. *J. Voc. Behav.* 84, 119–132. doi: 10.1016/j.jvb.2013.12.002

Steijn, B., and Knies, E. (2021). "Introduction to the research handbook on HRM in the public sector," in *Research handbook on HRM in the public sector*, eds B. Steijn and E. Knies (Cheltenham: Edward Elgar Publishing).

Sterns, H. L., and Doverspike, D. (1989). "Aging and the retraining and learning process in organizations," in *Training and development in work organizations*, eds I. Goldstein and R. Katzel (San Francisco, CA: Jossey-Bass), 229–332. doi: 10.1016/j.neunet.2020.05.031

Sudha, K. S., and Khan, W. (2013). Personality and motivational traits as correlates of workplace deviance among public and private sector employees. *J. Psychol.* 4, 25–32. doi: 10.1080/09764224.2013.11885491

Thijssen, J. G. L., Van der Heijden, B. I. J. M., and Rocco, T. (2008). Toward the employability-link model: Current employment transition to future employment perspectives. *Hum. Resour. Dev. Rev.* 7, 165–183. doi: 10.1177/1534484308314955

Tims, M., and Bakker, A. B. (2010). Job crafting: Towards a new model of individual job redesign. *SA J. Industr. Psychol.* 36, 1–9. doi: 10.10520/EJC89228

Top, M., Akdere, M., and Tarcan, M. (2015). Examining transformational leadership, job satisfaction, organizational commitment and organizational trust in Turkish hospitals: Public servants versus private sector employees. *Int. J. Hum. Resour. Manag.* 26, 1259–1282. doi: 10.1080/09585192.2014.939987

Tummers, L., and Knies, E. (2016). Measuring public leadership: Developing scales for four key public leadership roles. *Public Adm.* 94, 433–451. doi: 10.1111/padm.12224

Van Dam, K. (2004). Antecedents and consequences of employability orientation. *Eur. J. Work Organ. Psychol.* 13, 29–51. doi: 10.1080/13594320344000237

Van den Elsen, J., Vermeeren, B., and Steijn, B. (2022). Valence of formal learning, employability and the moderating roles of transformational leadership and informal learning in the public sector. *Int. J. Train. Dev.* 26, 266–284. doi: 10.1111/ijtd.12258

Van Emmerik, I. H., Schreurs, B., De Cuyper, N., Jawahar, I. M., and Peeters, M. C. (2012). The route to employability: Examining resources and the mediating role of motivation. *Career Dev. Int.* 17, 104–119. doi: 10.1108/13620431211225304

Van der Heijde, C. M., and Van der Heijden, B. I. J. M. (2006). A competence-based and multidimensional operationalization and measurement of employability. *Hum. Resour. Manag.* 45, 449–476. doi: 10.1002/hrm.20119

Van der Heijden, B. I. J. M. (2005). *No one has ever promised you a rose garden. On shared responsibility and employability enhancing strategies throughout careers*. Heerlen: Open University of the Netherlands/Van Gorcum.

Van der Heijden, B. I. J. M., and Bakker, A. B. (2011). Toward a mediation model of employability enhancement: A study of employee-supervisor pairs in the building sector. *Career Dev. Q.* 59, 232–248. doi: 10.1002/j.2161-0045.2011.tb00066.x

Van der Heijden, B. I. J. M., and De Vos, A. (2015). "Sustainable careers: Introductory chapter," in *Handbook of research on sustainable careers*, eds A. De Vos and B. I. J. M. Van der Heijden (Cheltenham: Edward Elgar Publishing), 1–19.

Van der Heijden, B. I. J. M., Mulder, R. H., König, C., and Anselmann, V. (2017). Toward a mediation model for nurses' well-being and psychological distress effects of quality of leadership and social support at work. *Medicine* 96, 1–6. doi: 10.1097/MD.0000000000006505

Van der Heijde, C. M., and Van der Heijden, B. I. J. M. (2014). "Employability and social innovation: the importance of and interplay between transformational leadership and personality," in *Human Resource Management, Social Innovation and Technology. Advanced Series in Management*, eds T. Bondarouk, and M. R. Olivas-Luján (Bingley: Emerald Group Publishing Limited), 55–72.

Van Harten, J., and Rodrigues, R. (2021). "Future challenges related to retaining an employable workforce," in *Research handbook on hrm in the public sector*, (Cheltenham: Edward Elgar Publishing).

Van Harten, J., and Vermeeren, B. (2021). *Managing employees' employability. Managing for public service performance: How people and values make a difference*. Oxford: Oxford University Press.

Van Harten, J., Knies, E., and Leisink, P. (2016). Employer's investments in hospital workers' employability and employment opportunities. *Pers. Rev.* 45, 84–102. doi: 10.1108/PR-05-2014-0115

Vanhercke, D., De Cuyper, N., Peeters, E., and De Witte, H. (2014). Defining perceived employability: A psychological approach. *Pers. Rev.* 43, 592–605. doi: 10.1108/PR-07-2012-0110

Vermeeren, B., and van Geest, D. (2012). Research note: Pride and red tape within the public sector. *Tijdschrift Voor Arbeidsvraagstukken* 28, 315–327.

Weber, E. U., and Bottom, W. K. (1989). Axiomatic measures of perceived risk: Some tests and extensions. *J. Behav. Dec. Making* 2, 113–131. doi: 10.1002/bdm.3960020205

Wille, B., De Fruyt, F., and Feys, M. (2013). Big five traits and intrinsic success in the new career era: A 15-year longitudinal study on employability and work-family conflict. *Appl. Psychol. An Int. Rev.* 62, 124–156. doi: 10.1111/j.1464-0597.2012.00516.x

Wrzesniewski, A., and Dutton, J. E. (2001). Crafting a job: Revisioning employees as active crafters of their work. *Acad. Manag. Rev.* 26, 179–201. doi: 10.5465/amr.2001.4378011

Xie, Y., Baranchenko, Y., Lin, Z., Lau, C. K., and Ma, J. (2019). The influences of transformational leadership on employee employability: Evidence from China. *Employee Relat.* 41, 101–118. doi: 10.1108/ER-02-2018-0052

Yarnall, J. (1998). Line managers as career developers: Rhetoric or reality? *Pers. Rev.* 27, 378–395. doi: 10.1108/00483489810230325

Yi, X., and Wang, S. (2015). Revisiting the curvilinear relation between job insecurity and work withdrawal: The moderating role of achievement orientation and risk aversion. *Hum. Resour. Manag.* 54, 499–515. doi: 10.1002/hrm.21638

frontiers | Frontiers in Psychology

TYPE Original Research
PUBLISHED 20 January 2023
DOI 10.3389/fpsyg.2023.1088154

OPEN ACCESS

EDITED BY
Martijn Burger,
Open University of the Netherlands,
Netherlands

REVIEWED BY
Emma Pleeging,
Erasmus University Rotterdam,
Netherlands
Walter Toscano,
National University of La Matanza,
Argentina

*CORRESPONDENCE
Daniel T. L. Shek
✉ daniel.shek@polyu.edu.hk

SPECIALTY SECTION
This article was submitted to Positive Psychology, a section of the journal Frontiers in Psychology

RECEIVED 03 November 2022
ACCEPTED 09 January 2023
PUBLISHED 20 January 2023

CITATION
Shek DTL, Zhu X, Dou D and Tan L (2023) Self-leadership as an attribute of service leadership: Its relationship to well-being among university students in Hong Kong.
Front. Psychol. 14:1088154.
doi: 10.3389/fpsyg.2023.1088154

Self-leadership as an attribute of service leadership: Its relationship to well-being among university students in Hong Kong

Daniel T. L. Shek*, Xiaoqin Zhu, Diya Dou and Lindan Tan

Department of Applied Social Sciences, The Hong Kong Polytechnic University, Kowloon, Hong Kong SAR, China

Introduction: In the scientific literature, although conceptual models and empirical evidence have shown that leadership attributes are intimately linked to the well-being of followers, there is a lack of studies focusing on leadership in the service economy. According to the Service Leadership Theory, service leadership is a process that satisfies the needs of self, others, and systems (teams, organizations, communities, and societies) in ethical ways that is characterized by leadership competence, character, and care. With specific reference to self-leadership emphasized in service leadership, higher levels of service leadership attributes should promote personal well-being. However, the relationships between "service leadership attributes" and "well-being" in leaders at the intrapersonal level in leadership education among Chinese university students are rarely examined.

Methods: In this study, we collected data from 198 students to understand the linkages between "service leadership attributes" and "well-being" in university students taking a course on service leadership. For tracking changes in students, we collected both pretest and posttest data on validated measures of "service leadership attributes" (i.e., "knowledge," "attitude," and "behavior") and "well-being" (i.e., "positive youth development attributes" and "life satisfaction").

Results: Results showed that the posttest scores on all three domains of "service leadership attributes" as well as two dimensions of "well-being" encompassing life satisfaction and positive youth development attributes were higher than the respective pretest scores, suggesting that students experienced a shift in a positive direction after taking the course. Cross-lagged analyses showed that pretest service leadership attitude and behavior predicted posttest positive youth development attributes; pretest service leadership behavior predicted posttest life satisfaction. Pretest life satisfaction also predicted posttest service leadership behavior.

Discussion: Findings suggest that there is an intimate relationship between "service leadership attributes" and "well-being" in the "pre-work" context among university students.

KEYWORDS

life satisfaction, service leadership, positive youth development, pretest-posttest, leadership attitude, course evaluation

1. Introduction

Leaders undeniably perform a crucial role within an organization. In addition to setting organizational goals and strategies, leaders also consciously shape the development of their followers through supervision, coaching, training, and role modeling. Besides, leaders influence followers through their leadership attributes. For example, leaders focusing on achievements with authoritarian control alone would create much stress for the followers. On the other hand, leaders focusing on

achievement with care about the followers would create support, cohesion, and positive energies among the followers. Hence, it is important to understand the relationship between leadership attributes and mental well-being in the field of leadership.

1.1. Leadership style, self-leadership, and well-being

In the scientific leadership literature, studies have shown the association between the attributes of leaders and the development of followers and coworkers. Montano et al. (2017) conducted a meta-analysis to understand the linkages between leadership attributes (transformational, relationship-oriented, task-oriented, destructive, and leader-member exchange styles) and job performance as well as mental health of the followers (indexed by emotional problems, burnout, stress, wellness, mental functioning, and health problems). They found that while there were positive relationships between some leadership attributes (e.g., transformational and relations-oriented leadership) and mental health, a negative correlation was detected between destructive leadership attributes and mental health. They also found that mental health acted as a significant mediator in the association between leadership attributes and the job performance of subordinates. After reviewing studies and theories in the leadership field, Inceoglu et al. (2018) summarized that different leadership attributes (change-oriented, task-oriented, relational-oriented, passive leadership, and others) influenced different aspects of the well-being of followers, including hedonic, eudaimonic, negative, and physical indicators. They also identified several mediators in this relationship, including social-cognitive, affective components, motivating features, identification elements, and relational factors. They remarked that "as a starting point for future research, leadership researchers will need to take employee well-being more seriously as a criterion in and of itself—as an end goal rather than merely as a means to higher performance" (Inceoglu et al., 2018, p. 189).

Additionally, leadership qualities not only correlate with the well-being of subordinates, but also shape leaders' own well-being. This association demonstrates the importance of self-leadership in promoting personal development. Manz (1986) defined self-leadership as "a comprehensive self-influence perspective that concerns leading oneself toward performance of naturally motivating tasks as well as managing oneself to do work that must be done but is not naturally motivating" (p. 589). There are two key categories of strategies underlying self-leadership, including "behavior-focused strategies" (e.g., "goal setting," "rehearsal," "self-reward," and "self-punishment") and "cognitive-focused strategies" such as natural rewards (Manz and Sims, 1991, p. 24). Krampitz et al. (2021) argued that "effective leadership starts with effective self-leadership" (p. 22). In a meta-analysis involving 11 studies, Krampitz et al. (2021) showed that leadership interventions were effective in developing self-leadership skills. As concluded by Dolbier et al. (2001), "self-leadership can be learned and applied, coupled with the findings relating self-leadership to positive psychological, health, and work outcomes, the practical application of self-leadership is a worthwhile avenue to pursue" (p. 483). Obviously, service leadership education is a good way to promote self-leadership in leaders, which would eventually promote psychological well-being.

In the fields of management and business, there is support for the positive effects of self-leadership on individual and team performance, organizational sustainability, and national culture (Goldsby et al., 2021) as well as well-being and mental health (Uzman and Maya, 2019; Krampitz et al., 2021). Research shows that self-leadership has positive impacts on the lives of individuals. Focusing on adolescents, Uzman and Maya (2019) revealed a positive relationship between self-leadership strategies and well-being indexed by life satisfaction and self-esteem in university students. Similarly, Dolbier et al. (2001) demonstrated that self-leadership positively correlated with college students' hardiness, dispositional optimism, and health conditions but was negatively related to interpersonal mistrust, illness symptoms, and perceived stress.

The beneficial connection between self-leadership and well-being was also reported in studies involving adults. Dolbier et al. (2001) reported that self-leadership correlated positively with working relationships, job satisfaction, and perceived wellness. In another study in Finland, Sjöblom et al. (2022) showed that self-leadership strategies were negatively associated with burnout but positively associated with perceived meaningfulness of work. In addition, studies also documented the availability of self-leadership as the protective factor for psychological health: Şahin and Gülşen (2022) reported that self-leadership mediated the influence of basic psychological needs satisfaction and occupational adaptability. Based on a sample of German employees, Seubert et al. (2017) showed that "cognition-based strategies" significantly buffered the impact of overload at work on exhaustion tendencies. However, Roberts and Foti (1998) examined the moderating role of self-leadership between job structure and job satisfaction in 76 employees and surprisingly found that "high self-leaders who worked in highly structured work environments reported the least amount of satisfaction with their jobs" (p. 263).

1.2. Understanding the linkage between service leadership and well-being via the self-leadership perspective

Notably, from the review above, we can tentatively conclude that although there are intimate relationships between leadership style and the well-being of the followers, as well as the benefits of self-leadership on leaders' well-being, there are several gaps in the literature. First, although there are theoretical and empirical works on the linkages among diverse leadership attributes and follower well-being based on some leadership models (e.g., transformational leadership and servant leadership), not much work has been done based on leadership grounded in the service economy. With the rapid growth of the service economy, how leadership attributes in the context of the service economy (i.e., "service leadership attributes") are related to the well-being of followers is an important question to be addressed.

In response to the rapid development of service economies worldwide, Dr. Po Chung, Co-founder of DHL International Limited and Chairman Emeritus of DHL Express (Hong Kong) Limited, proposed the "Service Leadership Theory" (Shek et al., 2018a, 2022a). In this theory, it is asserted that service leadership is a process that satisfies the needs of self, others, and systems (teams, organizations, communities, and societies) in ethical ways (Shek et al., 2018a). It also highlights seven core beliefs (e.g., "everyone can be a leader," "a service leader is a service provider," and "leadership includes self-serving efforts for continuous improvement") and maintains that an effective service leader has three attributes ("competence," "character," and "care," 3 Cs) determining the leader-follower relationship and related outcomes.

Leadership competencies generally refer to generic competencies that enable leadership effectiveness, including management skills,

problem-solving capabilities, and skills that would facilitate the production process. In particular, Shek et al. (2015b, 2022a) focus on the prominence and valuation of "soft skills" or "21st Century skills," including "adversity quotient" (AQ), "emotional quotient" (EQ), and "spiritual quotient" (SQ). Character refers to moral character attributes such as integrity, a sense of righteousness, and courage. These character attributes can be understood through both Western (e.g., character strengths under the "Values in Action," Peterson and Seligman, 2004) and Chinese frameworks (e.g., traditional Chinese virtues, Shek et al., 2015c). Finally, an effective service leader exercises care about different stakeholders, particularly concern about the followers. Shek et al. (2021) further studied the origin of the "Service Leadership Theory." They concluded that the model is humanistic in nature with a strong emphasis on the importance of character and values.

Although other propositions emphasize distributed leadership (i.e., every employee takes leadership responsibilities) and service orientation in the service era (e.g., Grönfeldt and Strother, 2006; Snell et al., 2015), it can be argued that the "Service Leadership Theory" is unique in integrating all essential propositions regarding the requirements of the growing service economies. Shek et al. (2015a) compared the "Service Leadership Model" with some other contemporary leadership models, including the "trait approach," "servant leadership," "spiritual leadership," "authentic leadership," "ethical leadership," "transformational leadership," "charismatic leadership," and "top-down leadership approach." "Service Leadership Theory" emphasizes that leadership can be learned and is not based on inherent traits or charisma. Besides, this theory involves a comprehensive understanding of leadership qualities, including competencies, character, and a caring disposition, in contrast to other theories that focus on specific aspects of leadership, such as spiritual leadership and ethical leadership. The Service Leadership Theory also defines leadership at the individual, interpersonal, and systemic levels, unlike theories that only consider leaders' personal characteristics and leader-follower relationships, such as authentic leadership. Additionally, service leadership emphasizes the importance of self-leadership and ethical self-care, while other theories, such as transformational leadership and top-down leadership, do not specifically take this perspective into account. To conclude, "Service Leadership Theory" is unique in terms of incorporating people orientation, service orientation, system orientation, focus on the three "Cs" of leadership (competencies, character, and care) and personal qualities of leaders, the belief that "everyone can be a leader," emphasis on the significance of self-leadership, urge for constant self-improvement, emphasis on the significance of mentoring followers, and innovative integration of traditional Chinese virtues (Shek et al., 2015c). As such, it is interesting to ask how the "service leadership attributes" are related to the well-being of the leaders as well as followers.

Second, the linkage between leadership and well-being has been primarily addressed within the interpersonal context involving leaders and followers (or coworkers). For example, based on meta-analysis of 209 studies of Li P. et al. (2021) across different cultures, positive leadership styles (e.g., ethical and servant leadership) are universally positively associated with subordinates' work engagement and well-being. While this is a legitimate focus, we should ask another question—are leadership attributes related to the well-being of the leaders themselves (i.e., intrapersonal context)? According to the self-leadership perspective, before leading others, one has to learn how to lead oneself. Hence, the connection between leadership attributes and well-being in terms of the intrapersonal perspective should be examined. However, few researchers have examined the linkages between diverse leadership qualities (e.g., resilience) and well-being (e.g., life satisfaction). In a meta-analysis, Hoch et al. (2018) examined whether authentic leadership, ethical leadership, servant leadership, and transformational leadership are differently associated with organizational outcomes. Results supported the distinctiveness of servant leadership in explaining the linkage between leadership qualities and a wide range of organizational outcomes. As such, by examining the association between service leadership (in which character and care are two dominant dimensions) and personal well-being, the current study will contribute to the discussion on the role of positive leadership in the promotion of well-being in the leaders themselves.

Third, most of the studies on leadership and worker well-being were conducted in Western contexts with very few explorations rooted in Chinese settings. In their meta-analysis, Li P. et al. (2021) highlighted the importance of cultural characteristics in shaping the associations between leadership and organizational well-being. There are several reasons why this issue should be examined in Chinese people. Firstly, while conventional leadership theories often adopt individualistic assumptions, Chinese culture is more collectivist in nature (Shek et al., 2022c). Besides, given the huge population size of Chinese people, there is a need to examine whether the relationships between leadership and well-being apply to the Chinese context. Secondly, as China is experiencing a booming growth shift from the manufacturing economy to the service economy, understanding how service leadership contributes to leadership well-being is a timely question to be answered. Thirdly, the focus on character and caring dispositions are indeed consistent with the conception of leadership under Confucian thoughts. Finally, as there remain few studies on leadership psychological attributes in the Chinese setting, we need more effort to build up the database in this area.

The fourth limitation of the literature is that few studies have examined this issue in the "pre-work" context. According to the "Service Leadership Theory," everybody is (and can be) a leader. Hence, university students are (and can be) leaders. According to the self-leadership view that everyone is a leader of himself/herself, university students can be regarded as leaders at least leading themselves. Based on these beliefs, it is legitimate to ask whether service leadership education has any impact on the well-being of university students. Theoretically, examination of this issue in the higher education context would expand our understanding of the leadership-well-being relationship beyond the "work" context to the "pre-work" context. Practically, research findings would provide insight into the role of leadership education in nurturing student well-being in the higher education sector.

Finally, under the turbulence of the pandemic when courses are moved online, we rarely understand the role of leadership education in well-being and how "service leadership attributes" are related to individual "well-being" when the online mode is adopted. In a study evaluating the outcomes of synchronous and asynchronous online teaching modes during the pandemic, Zhu et al. (2021) revealed that the two teaching modes showed positive impacts. Using pretest and posttest data, participants exhibited significant improvement either in their well-being or their "service leadership attributes." Using the client satisfaction approach, students also responded positively with regard to course design, instructor performance, and personal gains obtained from the course. In another recent study examining the effectiveness of a leadership course, Chai et al. (2022) similarly revealed that 630 students showed improvement in life satisfaction, positive youth development traits, and desirable graduation qualities as a result of completing the course. Besides, students also demonstrated high satisfaction with

curriculum design, instructor performance and overall payoff derived from the course. There are also some studies showing the effectiveness of service-learning courses on service leadership (Lin et al., 2022; Zhu et al., 2022; Shek et al., 2022b).

1.3. "Service leadership attributes" and "well-being"

With reference to the "Service Leadership Model" (Chung and Bell, 2012; Shek et al., 2015a), there are three basic qualities of accomplished service leaders – "competence," "character," and "care." Obviously, we can ask whether there are any relationships between these "service leadership attributes" and "well-being," particularly in university students.

Concerning the relationship between resilience and well-being in young people, there are research findings demonstrating that these two domains are positively related in Nigerian students (Ifeagwazi et al., 2015) and Australian students (Turner et al., 2017). Similar findings were observed in adults. Zhao et al. (2021) reported that while four dimensions of resilience (persistence of effort, strength, tenacity, and optimism) were positively associated with life satisfaction among Chinese adults, only tenacity and optimism significantly predicted life satisfaction. Resilience also plays a protective role in well-being in leadership settings. Zhou et al. (2022) revealed that resilience was associated positively with caring ability and self-learning in student leaders. Hudgins (2016) revealed that resilience in nursing leaders was positively correlated with their job satisfaction. Walumbwa et al. (2010) also found that police officers' resilience predicted followers' job performance and psychological capital (e.g., efficacy, hope, and optimism). Finally, De Clercq et al. (2021) demonstrated that employee resilience in the telecommunications and banking sectors mitigated the negative effect of perceived leader arrogance on employee distrust for leaders' consistency in action.

There is also evidence of a strong positive association between emotional competence and well-being in managers (Sharma, 2011). Kafetsios et al. (2011) also found that supervisors' emotional use capacity was positively negatively correlated with subordinates' personal fulfillment and job satisfaction, while being associated negatively with followers' depersonalization in the school context. In a meta-analysis, Miao et al. (2016) concluded that leaders' emotional intelligence strongly predicted followers' job satisfaction, and followers' emotional intelligence played a significant mediating role in this link. Andrei et al. (2022) similarly revealed that trait emotional intelligence moderated the direct predictive effects of unemployment on the quality of life during the pandemic.

Tracking 116 general adults living in Europe, Berking et al. (2014) showed that deficits in emotion regulation skills were strongly associated with depressive symptoms, with incompetent emotion regulation predicting the severity of depression after 5 years. Llinares-Insa et al. (2020) also reported that emotional intelligence was positively correlated with subjective well-being in parents and parental moods played an important mediating role in the influence of emotional intelligence on subjective well-being. Recently, survey of Chinese university students of Li N. et al. (2021) showed that self-perceived emotional competence (emotion appraisal, regulation, and use) mediated the association between crisis exposure during COVID-19 and anxiety as well as depressive symptoms. However, it is noteworthy that some studies showed the possible negative effects of emotion induction (e.g., Petrides and Furnham, 2003).

Finally, studies have shown that spirituality, such as the meaning of life, was related to well-being in students (Shek and Lin, 2015; Pant and Srivastava, 2019). For example, Kleiman and Beaver (2013) showed that the presence of life meaning as a "suicide resiliency factor" significantly predicted a decrease in suicidal ideation over time. Similar findings were reported based on adults (Schnell and Krampe, 2020; Moafi et al., 2021). In the leadership literature, many scholars highlighted the benefits of spirituality for well-being in leadership contexts. As Fry (2003) asserted, "spiritual leadership comprises the values, attitudes, and behaviors necessary to intrinsically motivate oneself and satisfy fundamental needs for spiritual well-being, through calling and membership" (p. 711). Based on civil servants in Indonesia, Wahyono et al. (2021) reported that spiritual leadership promoted workplace spirituality and job satisfaction as well as reduced deviant behavior in the workplace. However, there are findings suggesting that while leadership spirituality promotes work meaning, it may also create negative emotions, particularly when leaders abuse their power (Rego et al., 2008; Chaston and Lips-Wiersma, 2015).

Regarding character, studies have examined the linkage between character and well-being in light of the character strengths framework (Peterson and Seligman, 2004). In the non-clinical populations, positive relationships between a wide range of character strengths and well-being were reported both in adults (Martínez-Martí et al., 2020) and young people (Shoshani and Slone, 2013; Zhang and Chen, 2018). In the clinical populations, there is also support for the beneficial effect of character strengths on well-being in first-episode psychosis patients (Browne et al., 2018). Umucu et al. (2021) also showed that higher levels of comprehensive character strengths could buffer the adverse impairment of COVID-19 stress on patient well-being, including positive emotions, engagement, and relationships. The beneficial role of character on well-being has also been reported in the leadership literature, particularly in relation to ethical leadership. Generally speaking, ethical leadership attributes had a positive association with employee job satisfaction and other well-being components in Pakistan (Aftab et al., 2022), Turkey (Demirtas et al., 2017), and the United States (Sosik et al., 2019).

In a cross-cultural context, character is not only identified as providing a "compass of a good life" (Martínez-Martí et al., 2020; Littman-Ovadia et al., 2021) in the Western contextual findings, but also noted for its crucial value as a "compass of moral" (Shek et al., 2022a) in the Chinese traditional culture. Advocating the presence of the philosophy of Confucianism in Chinese culture as the ideal of how the Chinese deal with themselves, others, and the world, Shek et al. (2013) pioneered a discourse on the relationship between adolescent mental health and the key Confucian character strengths. These included "zhong (loyalty), xiao (filial piety), ren (benevolence), ai (affection), xin (trustworthiness), he (harmony), ping (peace), li (propriety), yi (righteousness), lian (integrity), chi (shame), zhi (wisdom)" (p. 336).

Empirically, there are studies demonstrating that filial piety (Yang and Wen, 2021), interpersonal harmony (Hsiao et al., 2006), and forgiveness (Chan, 2013) were positively associated with well-being. To conclude, Zhou et al. (2021) revealed that moral character attributes, including traditional Chinese virtues, which embodied as polite, loyal, forgiving, sense of justice among others, not only positively associated with life satisfaction, but also significantly predicted life satisfaction among Hong Kong students ($N = 2,474$), and adolescent responsible behavior could significantly mediate such a link.

Finally, caring attributes include love, listening, and empathy (Shek et al., 2022a), the key properties of Positive Youth Development (PYD).

Caring attributes have been found to contribute to the well-being of the individual, family, and community. Research showed that love (Culshaw and Kurian, 2021), caring climate (Fry et al., 2012), family support displayed as active listening (Alsawy et al., 2020), and community support promoted community well-being (Berardi et al., 2020).

In the leadership literature, research also suggests that leadership care was significantly correlated to staff well-being (Kock et al., 2019). In Germany, Jacobs et al. (2013) revealed that a higher level of transformational leadership, characterized by caring and considering subordinates' feelings, in particular, was significantly and positively correlated with higher employee psychological well-being. In Denmark, Munir et al. (2010) also showed a negative link between transformational leadership style and employee depression over time. Moreover, Kock et al. (2019) revealed not only a positive association between empathetic leadership and follower job satisfaction, but also a significant moderating effect of empathetic leadership in the link between employee job satisfaction and innovative behavior. Nevertheless, there are views suggesting that over-use of care, such as "compassion fatigue" and "overloaded supervisor care," may lead to negative outcomes (e.g., Duarte and Pinto-Gouveia, 2017). For example, Boekhorst et al. (2021) showed that while managerial caring behavior was positively correlated with employee vitality in the workplace, its negative effect appears to be more pronounced when there were employee-rated manager overload and employee guilt.

1.4. The present study

To understand the relationship between "service leadership attributes" and "well-being" based on university students during the pandemic, we asked two research questions:

Research Question 1: Did students who took the "Service Leadership" course *via* online and hybrid modes during the pandemic demonstrate an improvement in their "service leadership attributes" as well as "well-being"? Based on previous studies and predictions of the "Service Leadership Theory," we anticipated that students would exhibit improvements in "service leadership attributes" (Hypothesis 1a) and "well-being" (Hypothesis 1b) after participating in the course.

Research Question 2: What are the inter-relationships between "service leadership attributes" and "well-being"? According to "Service Leadership Theory" and previous studies, we predicted the existence of positive correlations between "service leadership attributes" and "well-being" at the pretest and posttest (Hypothesis 2a). Based on the work of Zhu and Shek (2021b), we also expected that service leadership attitudes and behavior at the pretest would predict well-being at the posttest (Hypothesis 2b).

By answering the above two questions, the present study contributes to the existing literature by delineating whether university students demonstrate any changes regarding service leadership qualities and well-being after taking a leadership course during the pandemic. Answers to the second research question also shed light on the cross-sectional and longitudinal associations between service leadership attributes and well-being in the "pre-work" context among Chinese university students at the intrapersonal level from a self-leadership perspective.

2. Methods

To understand the linkages between "service leadership attributes" and "well-being," we utilized data collected from university students who enrolled in the "Service Leadership" offered in the summer term of 2021 and 2022. "Service Leadership" is a three-credit General Education course introducing the basics of "Service Leadership." Over 2 years, a total of 198 students took the course. For tracking changes in students, we collected both pretest and posttest data on validated measures of "service leadership attributes" (i.e., "knowledge," "attitude," and "behavior") and "well-being" (i.e., "positive youth development attributes" and "life satisfaction"). Using pretest and posttest data, we also examined the relationship between "service leadership attributes" in the three domains and "well-being" in two areas over time.

The "Service Leadership" course is a three-credit elective course that consists of 13 lectures of 3 h each, addressing a broad scope of service leadership-related knowledge. The lectures introduce the transition from manufacturing economies to service economy economies, seven essential beliefs (e.g., "everyone can be a leader"), key determinants of effective service leadership including competence ("intrapersonal competence" and "interpersonal skills"), character (different character strengths and traditional Chinese virtues), and care ("empathy" and "active listening"), and similarities and differences between "Service Leadership Theory" and other high-impact leadership theories (e.g., spiritual and servant leadership). Furthermore, real-life scenarios and examples are incorporated into different class activities (e.g., group discussions and case studies) to deepen students' learning and help them apply the knowledge in daily life.

Notably, the course adopts a student-centered teaching pedagogy characterized by interactive teaching and learning methods, such as reflective learning (e.g., self-reflection on own leadership practices and service leadership qualities), learning collaboratively (e.g., drawing, projects, and presentations in the group format), critically thinking (e.g., encouraging critical evaluate of various leadership theories and attributes), and other in-class interactions (e.g., role play, debate, and games). Affected by the COVID-19 pandemic and the associated measures of social distancing, the "Service Leadership" course was offered to students through a hybrid mode blending physical and online teaching since the 2019–2020 summer semester with in-class interactive activities being refined to an online version (Zhu et al., 2021).

2.1. Participants and procedures

In two summer semesters in the academic years of 2020–2021 and 2021–2022 academic years, the "Service Leadership" course was provided through an online teaching format over a period of 7 weeks (i.e., two lectures were offered per week). For the purpose of assessing course effect in terms of changes in students after taking the course and investigating the association between "service leadership attributes" and "well-being" (i.e., the two aforementioned research questions), a one-group pretest-posttest design was employed in this study. Despite the intrinsic shortcomings of this type of pre-experimental design as a result of not involving control groups (Campbell and Stanley, 1996), it is quite feasible and practically preferred, especially in educational settings. Particularly, Thyer (2002) pointed out several myths in evaluating changes in psychosocial outcomes, such as "you must control for the most relevant threats to internal validity" or "you must randomly assign clients to various control and experimental groups" (pp. 12–13). Of course, he also acknowledged the limitations of the one-group pretest-posttest design and the meaningful usage of evaluation designs without a control group. As such, scholars devoted to educational and other social science fields like social work and youth services have

advocated and adopted this research design in evaluating service or educational effectiveness (e.g., McElwain et al., 2016; Shek and Zhu, 2018; Zhu et al., 2022). In the present investigation, comparisons between the pretest and the posttest scores are expected to at least partially reflect students' changes as a result of service leadership education, as other confounding effects (e.g., maturation) are less likely to fully operate in such a short period (i.e., 7 weeks).

In each summer semester, students enrolled in the course were invited to participate in an online pretest survey to be completed within a week prior to the first lecture and to finish the posttest within a week of completing the final lecture. Before responding to survey questions, students provided their consent after reading an online information sheet that explained key principles upheld in collecting, analyzing, and using the data, including voluntary participation, anonymity, and confidentiality. The "Institutional Review Board (and its Delegate)" at the authors' university approved the present study.

In the summer semester of the 2020–2021 year, among the 118 enrolled students, 111 (response rate = 94.07%), and 100 (response rate = 84.75%) completed the pretest and posttest, respectively. A total of 93 cases (Mean age = 19.17 ± 1.51 years) were successfully matched (female = 55, 59.14%). In the summer semester of the 2021–2022 year, among the 113 enrolled students, 110 (response rate = 97.35%), and 107 (response rate = 94.69%) completed the pretest and posttest, respectively. A total of 105 cases (Mean age = 19.99 ± 1.64 years) were successfully matched (female = 44, 41.90%). The present study utilized the matched sample in two academic years (total N = 198, mean age = 19.61 ± 1.64 years, 50.00% female students).

2.2. Measures

The same indicators measuring the "service leadership attributes" (indexed by "knowledge," "attitude," and "behavior") and "well-being" [indexed by "life satisfaction" as a measure of hedonic well-being and "positive youth development (PYD) attributes" as a measure of eudaimonic well-being] were employed in the pretest and posttest questionnaires.

Service Leadership Knowledge (SLK) was assessed using the "Service Leadership Knowledge Scale" consisting of a set of 40 multiple-choice questions on service leadership concepts and knowledge points (e.g., the underlying economic, social, and cultural context in which the service economy is rooted) mentioned in the lectures (Shek et al., 2018c). Students' responses to each question were coded as "0″ or "1″ if the answer was incorrect or correct, respectively. The total score of SLK betwixt 0 and 40. This scale showed adequate psychometric properties in the validation study (Shek et al., 2018c) and had favorable reliability in previous studies (Zhu et al., 2021; Zhu and Shek, 2021b). As depicted in Table 1, the knowledge scale also had adequate internal consistency in both the pretest (α = 0.94; mean inter-item correlation = 0.30) and posttest (α = 0.95; mean inter-item correlation = 0.35) in the present study.

Service Leadership Attitude (SLA) was gaged from the "Service Leadership Attitude Scale" containing 23 items on a six-point scale ("1" = "strongly disagree"; "6" = "strongly agree"). Sample items included "a good leader listens to his/her subordinates' views" and "everyone has the potential to be a leader." The scale has been validated in samples of Chinese university students based in Hong Kong (Shek and Chai, 2019) and demonstrated satisfactory psychometric characteristics in prior research (Zhu et al., 2021; Zhu and Shek, 2021b). For the present research, the scale's Cronbach's alpha values were above 0.95 on two assessment occasions (see Table 1), indicating the scale's good internal consistency.

Service Leadership Behavior (SLB) was measured by a 19-item "Service Leadership Behavior Scale," which has also been validated among Hong Kong Chinese university students (Shek et al., 2018b, 2019) and utilized to assess students' service leadership behaviors covering the three Cs (competence, character, and care) in past studies (Zhu et al., 2021; Zhu and Shek, 2021b). Students were invited to rate each item (e.g., "I often try my best to help other people to overcome difficulties" and "I learn through reflecting on my experiences") on a six-point scale ("1″ = "strongly disagree"; "6″ = "strongly agree"). This scale exhibited good reliability as indicated by Cronbach's alpha values (0.95 and 0.97) and mean inter-item correlation (0.52 and 0.63; see Table 1) in this study.

Life Satisfaction was measured by the five-item Chinese "Satisfaction with Life Scale," which assessed people's cognitive ratings regarding their overall quality of life (Sun and Shek, 2010). Students rated each statement (e.g., "the conditions of my life are excellent") using a six-point

TABLE 1 Reliability of measures and participants' changes from the pretest to posttest (*N*=198).

Measures	Pretest		Posttest		*F*	η^2_p
	M (*SD*)	α (M_{IIC})	*M* (*SD*)	α (M_{IIC})		
Service leadership attributes					8.54***, [a]	0.12
SLK	27.68 (9.71)	0.94 (0.30)	29.10 (10.33)	0.95 (0.35)	5.99*	0.03
SLA	4.87 (10.52)	0.95 (0.55)	4.96 (0.65)	0.96 (0.59)	5.33*	0.03
SLB	4.67 (0.55)	0.95 (0.52)	4.86 (0.64)	0.97 (0.63)	20.17***	0.09
Positive youth development attributes					5.91***, [b]	0.11
CBC	4.58 (0.58)	0.90 (0.51)	4.79 (0.66)	0.93 (0.61)	16.65***	0.08
PI	4.40 (0.78)	0.86 (0.57)	4.64 (0.80)	0.89 (0.63)	6.13***	0.09
GPYD	4.54 (0.53)	0.87 (0.33)	4.65 (0.62)	0.88 (0.39)	7.35**	0.04
TPYD	4.53 (0.55)	0.94 (0.39)	4.69 (0.62)	0.96 (0.47)	15.50***	0.07
Life satisfaction	4.10 (0.88)	0.92 (0.69)	4.37 (0.92)	0.92 (0.70)	20.58***	0.10

SLK, service leadership knowledge; SLA, service leadership attitude; SLB, service leadership behavior; CBC, cognitive-behavioral competence; PI, positive identity; GPYD, general positive youth development qualities; TPYD, total positive youth development score; and M_{IIC}, mean inter-item correlation; [a]adjusted Bonferroni value (0.017), [b]adjusted Bonferroni value (0.013); *$p < 0.05$, **$p < 0.01$, and ***$p < 0.001$.

scale ("1" = "strongly disagree"; "6" = "strongly agree"). This instrument has been applied extensively in research involving Chinese young people and demonstrated adequate reliability (e.g., Zhang, 2016; Shek et al., 2017; Zhu and Shek, 2020). In this study, this scale also certainly exhibited good internal consistency at pretest (α = 0.92; mean inter-item correlation = 0.69) and posttest (α = 0.92; mean inter-item correlation = 0.70; see Table 1).

PYD Attributes were measured by a total of 10 subscales selected from the validated "Chinese Positive Youth Development Scale" (Shek and Ma, 2010), which followed previous practices in assessing PYD attributes in leadership education (Lin and Shek, 2019; Zhu and Shek, 2021b). The 31 items in the 10 subscales evaluated 10 corresponding PYD attributes, such as "emotional competence" and "resilience," which can be further grouped under three "higher-order factors." The first "higher-order factor" was "cognitive-behavioral competence" (CBC) summarizing "cognitive competence," "behavioral competence," and "self-determination." The second "higher-order factor," namely "positive identity" (PI), combined "clear and positive identity" and "belief in the future." The third "higher-order factor" entitled "general PYD qualities" (GPYD) summed up five individual PYD attributes, including "emotional competence," "social competence," "moral competence," "resilience," and "spirituality (e.g., life meaning and purpose)." In the present study, we utilized a six-point scale ("1" = "strongly disagree"; "6" = "strongly agree") to score all items. Besides, we calculated four composite scores, including scores of the three "higher-order factors" and a total rating across all individual attributes (i.e., total PYD). The scales were proven to possess adequate internal consistency with Cronbach's alpha values varying between 0.86 and 0.96 and mean inter-item correlations ranging between 0.33 and 0.63 (see Table 1).

2.3. Data analysis

In line with previous practices (Zhu and Shek, 2021b; Zhu et al., 2022), we used SPSS Version 26.0 (IBM Corp., Somers, NY, United States) to test and capture changes in students' "service leadership attributes" as well as "well-being" that occurred from the pretest to the posttest through repeated-measures multivariate general linear model (R-GLM) analyses. For "service leadership attributes" and PYD attributes that involved multiple indicators, a Bonferroni correction procedure was utilized to control the inflated type I error rate due to the multiple numbers of individual tests in detecting the multivariate effect. If the omnibus time effect was significant, we would perform follow-up univariate analyses to further test students' changes in individual measures. Given that the variables of age, gender, and academic year as between-participant variables in R-GLM did not show significant interactions with the time effect (F ranged between 0.19 and 2.51, $ps > 0.05$), final analyses were based on the combined whole sample ($N = 198$; Table 2 shows the correlations among variables).

The relationship between "service leadership attributes" and "well-being" was examined in six cross-lagged path models using AMOS Version 26.0 (IBM Corp., Somers, NY, United States), with each model involving one "service leadership attribute" (i.e., "knowledge," "attitude," or "behavior") and one "well-being" measure (i.e., "life satisfaction" or TPYD). As shown in Figure 1, after statistically controlling for the concurrent association (CA) between the pretest scores, autoregressions of "service leadership attributes" (AR1), and "well-being" measure (AR2), and the correlated change (CC) indexed by the correlation between the two residuals at posttest, the two cross-lagged effects (CLE1 and CLE2) would estimate the possible overtime effects between "service leadership attributes" and "well-being." This analytical procedure has also been adopted in previous research (Lin and Shek, 2019; Zhu et al., 2022).

3. Results

As shown in Table 1, the R-GLM yielded significant omnibus time effects regarding "service leadership attributes" ($F = 8.54$, $p < 0.001$, $\eta^2_p = 0.12$), PYD attributes ($F = 5.91$, $p < 0.001$, $\eta^2_p = 0.11$), and life satisfaction ($F = 20.58$, $p < 0.001$, $\eta^2_p = 0.10$). Following univariate analyses demonstrated significant improvement in each measure of "service leadership attributes" ($F = 5.33$–20.17, $ps < 0.05$, $\eta^2_p = 0.03$–0.09) and PYD attributes ($F = 6.13$–16.65, $ps < 0.01$, $\eta^2_p = 0.04$–0.09). In general, the students demonstrated significant changes in both "service leadership attributes" and subjective "well-being" from the pretest to the posttest in a positive way.

For the cross-lagged path analyses, all six models were saturated models characterized by zero degrees of freedom and perfect model fitness since all variables in each model were revealed to be interrelated. The results of the cross-lagged path analyses are presented in Table 3. After other types of effects were statistically controlled, four cross-lagged effects were significant. Specifically, while service leadership knowledge and attitude did not have significant cross-lagged effects on life satisfaction, service leadership behavior, and life satisfaction showed significant reciprocal impacts on each other over time (service leadership behavior→life satisfaction: $\beta = 0.14$, $p < 0.05$; life satisfaction→service leadership behavior: $\beta = 0.14$, $p < 0.05$). In addition, while there were no significant cross-lagged effects between service leadership knowledge and the total PYD score, both service leadership attitude ($\beta = 0.14$, $p < 0.05$) and behavior ($\beta = 0.36$, $p < 0.01$) demonstrated a significant one-way effect on the total PYD score over time. The findings suggest service leadership behavior, in comparison to service leadership knowledge and attitude, was a stronger predictor of later well-being measures.

4. Discussion

With regard to the above-mentioned research gaps, there are several constructive responses in this paper. First, we utilized the "Service Leadership Theory" to examine the linkages between leadership attributes and well-being. Second, based on the belief that everyone is a leader and the notion of self-leadership, we tested the ties between "service leadership attributes" and subjective and psychological "well-being" from an intrapersonal perspective. Third, the present study provides an expansion of the limited body of scientific literature regarding leadership specifically situated in Chinese settings. Fourth, we examined the linkage between leadership attributes and well-being in university students (i.e., pre-work context).

With reference to Research Question 1, results indicated that upon completion of the "Service Leadership" course, students showed positive changes. This finding generally supports prior research suggesting that service leadership education is efficacious in fostering leadership attributes along with the well-being of college students (Lin and Shek, 2019; Zhu et al., 2021; Zhu and Shek, 2021b). The present finding is important from the perspective of replication because there are few related studies in the field, especially concerning the online delivery

TABLE 2 Correlations between variables.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Age	--																
2. Gender[a]	−0.10	--															
3. SLK_pretest	−0.06	0.30***	--														
4. SLA_pretest	0.08	0.16*	0.32***	--													
5. SLB_pretest	−0.03	−0.02	−0.05	0.60***	--												
6. LS_pretest	−0.10	−0.02	−0.10	0.26***	0.55***	--											
7. CBC_pretest	0.02	−0.05	−0.01	0.45***	0.79***	0.57***	--										
8. PI_pretest	−0.01	−0.10	−0.09	0.34***	0.77***	0.66***	0.78***	--									
9. GPYD_pretest	0.03	0.02	0.07	0.52***	0.81***	0.64***	0.79***	0.76***	--								
10. TPYD_pretest	0.02	−0.03	0.00	0.49***	0.86***	0.67***	0.92***	0.89***	0.95***	--							
11. SLK_posttest	−0.04	0.29***	0.67***	0.33***	−0.06	−0.05	−0.08	−0.11	0.04	−0.04	--						
12. SLA_posttest	−0.07	0.14*	0.27***	0.55***	0.29***	0.12	0.11	0.07	0.21**	0.16*	0.35***	--					
13. SLB_posttest	−0.01	0.03	−0.02	0.38***	0.53***	0.37***	0.36***	0.36***	0.45***	0.44***	0.08	0.72***	--				
14. LS_posttest	−0.14*	−0.02	−0.10	0.14*	0.38***	0.57***	0.24***	0.34***	0.39***	0.36***	−0.13	0.42***	0.68***	--			
15. CBC_posttest	−0.05	0.00	−0.05	0.25***	0.44***	0.31***	0.34***	0.36***	0.38***	0.40***	0.00	0.65***	0.82***	0.65***	--		
16. PI_posttest	−0.02	−0.06	−0.09	0.22**	0.50***	0.46***	0.39***	0.52***	0.46***	0.50***	−0.04	0.52***	0.78***	0.77***	0.83***	--	
17. GPYD_posttest	−0.05	0.05	0.08	0.35***	0.51***	0.43***	0.38***	0.38***	0.55***	0.50***	0.13	0.67***	0.84***	0.69***	0.83***	0.78***	--
18. TPYD_posttest	−0.05	0.01	0.004	0.31***	0.52***	0.43***	0.40***	0.43***	0.51***	0.50***	0.05	0.67***	0.87***	0.74***	0.94***	0.90***	0.96***

[a]1 = male; 2 = female. SLK, service leadership knowledge; SLA, service leadership attitude; SLB, service leadership behavior; LS, life satisfaction; CBC, cognitive-behavioral competence; PI, positive identity; GPYD, general positive youth development qualities; TPYD, total positive youth development score; and *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

10.3389/fpsyg.2023.1088154

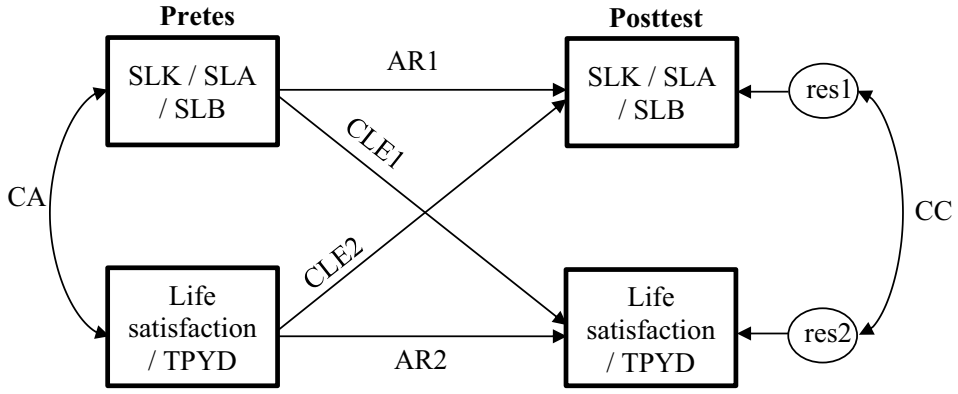


FIGURE 1
Cross-lagged path analyses of the relationships between service leadership attributes and well-being indicators. SLK, service leadership knowledge; SLA, service leadership attitude; SLB, service leadership behavior; TPYD, total positive youth development score; res, residual; CA, concurrent association; AR1, autoregression of service leadership attributes; AR2, autoregression of well-being indicator; CLE1, cross-lagged effect of service leadership attributes on well-being indicator; CLE2, cross-lagged effect of well-being indicator on service leadership attributes; and CC, correlated change.

TABLE 3 Standardized path coefficients of cross-lagged path analyses (N=198).

Models	CC	CA	AR1	AR2	CLE1	CLE2
Service leadership knowledge and life satisfaction	−0.12	−0.10	0.68***	0.59***	−0.03	0.03
Service leadership attitude and life satisfaction	0.49***	0.26***	0.58***	0.59***	0.04	0.02
Service leadership behavior and life satisfaction	0.63***	0.55***	0.49***	0.53***	0.14*	0.14*
Service leadership knowledge and positive youth development	0.09	0.01	0.68***	0.52***	0.02	−0.02
Service leadership attitude and positive youth development	0.74***	0.49***	0.61***	0.47***	0.14*	−0.07
Service leadership behavior and positive youth development	0.83***	0.86***	0.56***	0.23*	0.36**	0.00

CC, correlated change; CA, concurrent association; AR1, autoregression of service leadership attributes; AR2, autoregression of well-being measure; CLE1, cross-lagged effect of service leadership attributes on well-being measure; and CLE2, cross-lagged effect of well-being measure on service leadership attributes; *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

mode. Together with previous findings, the present findings suggest that service leadership education, regardless of its delivery mode (face-to-face or online), is a promising approach to facilitating the well-being of university students. There are studies showing that mental health issues are growing in the higher education sector (Li X. et al., 2021), particularly during the pandemic (Shek, 2021). To tackle the issue, university administrators and educators are searching for ways to promote the mental health of young people. In conjunction with other studies, it is arguable that service leadership education can be meaningfully implemented as a means of promoting life satisfaction and personal growth among university students.

It is noteworthy that the present service leadership education was effective during the pandemic, when lessons have been delivered in online and hybrid modes intermittently since the outbreak of the pandemic in early 2020. One obvious concern regarding online teaching and learning is its effectiveness. In particular, there are very few studies exploring the efficacy of programs in leadership training during the pandemic, which is seen as a health crisis and educational challenge. Consistent with previous studies, the present study showed that students improved after they had taken the online and hybrid "Service Leadership" course. Actually, such positive findings are consistent with research findings based on an online service-learning course on service leadership (Lin et al., 2022; Zhu et al., 2022; Shek et al., 2022b). In short, the present findings reinforce the conclusion that students change in a positive direction after they have taken the online "service leadership" course.

Given that the "Service Leadership" course has been found to be effective in different delivery modes, including face-to-face, asynchronous, and synchronous online modes (Lin and Shek, 2019; Zhu et al., 2021; Zhu and Shek, 2021b), the meticulously designed course content and engaging and reflective learning pedagogies may be the most essential factors contributing to the success of the course. First, the topics covered in the course, such as self-leadership, interpersonal skills, character strengths, and care, are desired in the service era and highly relevant to the students and may cost students much if they take courses on such topics in the commercial field. In addition, the positive beliefs and strength-based perspective (e.g., every student can become an effective service leader by cultivating and applying leadership attributes) underlying the course design empower the students to have more positive learning experiences. Thus, students are intrinsically motivated to learn the topics in the course, which may promote students' positive changes. Second, we used experiential learning strategies and activities, such as group discussion, group reflection, role play, and debate which are fun and engaging for the students. These activities promote the engagement and responsibility of the students in their studies. In contrast to the didactic teaching and learning in the traditional Chinese setting, this course is relatively interactive. Third, we emphasize personal reflection in this course which would facilitate knowledge acquisition and the development of service leadership attitudes. Active engagement in collaborative learning and reflective activities can promote learning effectiveness (Roberts, 2008; Kolb, 2014), which may cumulatively promote students' gains and development in this course. Because of

these unique features, this course has won several awards, including Bronze Award (Ethical leadership in 2016) and Gold Award (Nurturing Student Well-Being and Purpose in 2021) in QS Reimagine Education Awards, and the University Grants Committee Teaching Award in 2018.

Regarding the second research question on the linkages between core "service leadership attributes" and "well-being," concurrent correlation coefficients provided support for Hypothesis 2a. The cross-lagged analyses showed service leadership attitude and behavior at the pretest predicted posttest PYD attributes, partially supporting Hypothesis 2b. Meanwhile, leadership behavior and life satisfaction showed bidirectional effects on each other. Overall speaking, the findings showed that leadership attitudes and behavior, but not knowledge, are likely to shape both subjective well-being and psychological well-being over time. The outcome is in line with the prior observation that service leadership knowledge and well-being do not statistically significantly relate to one another (Lin and Shek, 2019). In other words, mere acquisition of service leadership knowledge does not contribute to well-being. This finding is not unexpected because understanding (e.g., the importance of exercise) will not lead to happiness if one does not spend time on exercise. Hence, on top of teaching leadership knowledge, cultivating the service mindset (i.e., attitude) and service practices may be more important in promoting students' well-being through service leadership education. This may be the reason that service-learning courses, where students develop and apply their leadership qualities through "doing" (i.e., serving needy people), have been found to be especially useful in promoting students' good feelings about themselves (e.g., Lin et al., 2022; Zhu et al., 2022). Nevertheless, Lin and Shek (2019) did not observe a significant cross-lagged effect of leadership attitude on life satisfaction. To further confirm the findings presented here, replications are needed.

Compared to knowledge, service leadership attitude and behavior exert a stronger influence on the development of mental well-being indicated by PYD attributes. Zhu and Shek (2021b) argued that when students internalize service leadership beliefs (such as the belief that "leadership can be nurtured") and practice service leadership behavior (such as showing empathy to others), they are more likely to unleash their potential and gain greater personal growth. The present finding also supports the social change model in leadership (Stephens and Beatty, 2015), which holds that leadership cultivation and development would enable transformation in many developmental domains such as social connectedness and positive mentality. In terms of student development, researchers (e.g., Komives et al., 2009) have argued that "knowing" and "being" are important factors in shaping well-being among young people. As service leadership attitudes are "humanistic" and "systemic" in nature (Shek et al., 2021), such as the belief that everybody can be a leader and that an effective leader cares for coworkers, nurturing such attributes among students would eventually contribute to their overall wellness.

We also found the predictive effect of life satisfaction on service leadership behavior characterized by demonstrating competence, care and moral character in leading self and others. It is possible that inherently, a bidirectional relationship exists between leadership behavior and life satisfaction (Zhu and Shek, 2021a). While internalization of service leadership beliefs and application of these beliefs in leadership practice may enable students to enjoy a productive and happy life (Hausler et al., 2017; Zhu and Shek, 2021b), feeling good about oneself and satisfaction with life may, in turn, serve as valuable emotional resources to help students cope and behave more effectively and adaptively (Fredrickson, 2001; Park, 2004). While the reciprocal relationship between individual behavior and life satisfaction has drawn much attention in youth development (e.g., Zhu and Shek, 2021a), it has been understudied in the leadership field. Additional studies are desired to further validate the present discoveries.

In general, the present study findings indicate that it is likely to be more important to nurture the attitudinal and behavioral growth of students (i.e., development of attitudes and behavior) rather than merely knowledge learning (Owen, 2012). Instructors engaged in leadership education will find these observations tremendously instructive and illuminating. While much leadership training often prides itself on equipping and empowering leadership knowledge and skills, leadership educators are expected to clearly recognize that it is far from sufficient, as leadership attitude transformation and behavioral applications are of greater importance for students to harvest a well-lived life than knowledge acquisition. Attitude transformation, however, can never be forced (Owen, 2012). Thus providing the insight that leadership programs should promote student initiative and then enhance acquisition under the mentorship of teachers by creating better opportunities and circumstances.

Although the present study replicated the previous findings and underscored the validity of online delivery of service leadership training during the pandemic, there are several limitations of the study. First, we adopted the one-group pretest-posttest design in this study. While this design is widely adopted in the field, the addition of a control group is important. Without a control group, we are not able to establish a causal relationship between the course effect and student changes. In other words, we are not able to completely rule out alternative explanations (e.g., student maturation and effects of other activities during the course period) in addition to the course effect for the changes in students. However, as the course was offered in 7 weeks during the summer term, the chance for students to naturally have significant improvements in leadership qualities and well-being in such a short time period was not high. In particular, previous studies concluded that university students did not necessarily make gains in their leadership competence and well-being merely because of maturation during the university period (Roohr et al., 2017; Yu et al., 2019). Therefore, the positive changes in service leadership qualities and well-being among students revealed in the present study are unlikely to be entirely attributed to maturation. As for the effects of other activities, as we have not collected such information, it is logically possible that such an alternative explanation exists. However, given the tight time schedule and assessment requirements (students need to do a group project and an individual writing project), students were unlikely to take other courses or programs during the same time period. In short, the present findings provide support for the hypothesis that students changed in a positive direction after taking the course, although we should also note the existence of alternative explanations as constrained by the research design. Nevertheless, future research will benefit from conducting quasi-experimental studies by involving a comparative control group of students who do not join the "Service Leadership" course, which would be methodologically preferred to establish the causal relationship between course effect and student changes.

Second, we only recruited students from one university in Hong Kong, which may limit the generalizability of the present findings to other samples of students. As the "Service Leadership" course adopts experiential and interactive teaching and learning approaches, it is unknown whether students in other universities in and outside Hong Kong also engage in such a learning pedagogy and benefit from their service leadership course participation experience. Hence, future

research needs to collect data from more universities within and outside Hong Kong and replicate the present study by involving a more representative sample of university students, which helps generate more conclusive findings that can also be generalized to a broader population.

Third, as the study was conducted in a "pre-work" context, treating university students as leaders and followers, it would be stimulating if data could be collected from the "work" context with the involvement of leaders and followers in the interpersonal context. Thus, another future research direction is to offer service leadership training in the "work" context and investigate the training effect and the associations between service leadership attributes and well-being among both leaders and followers. In particular, such studies can further assess actual leadership behavior in the work context by using different methods, such as observations, diaries, and behavioral checklists.

Fourth, it would be theoretically exciting to study how service leadership attributes of the leaders would influence the psychological well-being of the leaders which would eventually shape the well-being of the followers. This would generate theoretical models on the intimate relationship between leadership and well-being in the leaders themselves and the followers. Finally, as there are three elements of effective service leadership (i.e., competence, character, and care), it would be helpful to examine how different aspects are differentially related to well-being outcomes. This can help researchers to further understand how positive leadership contribute to personal and organizational outcomes, which is relatively neglected in the existing scientific literature on leadership (Hoch et al., 2018).

Despite these limitations, the present study suggests that online "Service Leadership" course during the pandemic is proven to be efficacious in boosting no matter the "service leadership attributes" or "well-being" of university students. Besides, there is evidence supporting the predictive role of both attitudes and behaviors of service leadership on well-being.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by the Institutional Review Board (or its Delegate) at The Hong Kong Polytechnic University. The patients/participants provided their written informed consent to participate in this study.

Author contributions

DS designed the research project and contributed to all the steps of the work. XZ contributed to the statistical analyses and drafting work. DD planned the data collection, collected the data, and prepared the data set. LT contributed to literature review and drafting of the manuscript. All authors contributed to the article and approved the submitted version.

Funding

This work is financially supported by Li and Fung Endowed Professorship in Service Leadership Education, Wofoo Foundation and the Research Matching Fund of the Research Grants Council (R.54. CC.83Y7).

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

References

Aftab, J., Sarwar, H., Kiran, A., Qureshi, M. I., Ishaq, M. I., Ambreen, S., et al. (2022). Ethical leadership, workplace spirituality, and job satisfaction: moderating role of self-efficacy. *IJOEM* doi: 10.1108/IJOEM-07-2021-1121 (Epub ahead of print).

Alsawy, S., Tai, S., McEvoy, P., and Mansell, W. (2020). 'It's nice to think somebody's listening to me instead of saying "oh shut up". People with dementia reflect on what makes communication good and meaningful. *J. Psychiatr. Ment. Health Nurs.* 27, 151–161. doi: 10.1111/jpm.12559

Andrei, F., Mancini, G., Agostini, F., Epifanio, M. S., Piombo, M. A., Riolo, M., et al. (2022). Quality of life and job loss during the COVID-19 pandemic: mediation by hopelessness and moderation by trait emotional intelligence. *Int. J. Environ. Res. Public Health* 19:2756. doi: 10.3390/ijerph19052756

Berardi, M. K., White, A. M., Winters, D., Thorn, K., Brennan, M., and Dolan, P. (2020). Rebuilding communities with empathy. *Local Dev. Soc.* 1, 57–67. doi: 10.1080/26883597.2020.1794761

Berking, M., Wirtz, C. M., Svaldi, J., and Hofmann, S. G. (2014). Emotion regulation predicts symptoms of depression over five years. *Behav. Res. Ther.* 57, 13–20. doi: 10.1016/j.brat.2014.03.003

Boekhorst, J. A., Hewett, R., Shantz, A., and Good, J. R. L. (2021). The double-edged sword of manager caring behavior: implications for employee wellbeing. *J. Occup. Health Psychol.* 26, 507–521. doi: 10.1037/ocp0000313

Browne, J., Estroff, S. E., Ludwig, K., Merritt, C., Meyer-Kalos, P., Mueser, K. T., et al. (2018). Character strengths of individuals with first episode psychosis in individual resiliency training. *Schizophr. Res.* 195, 448–454. doi: 10.1016/j.schres.2017.09.036

Campbell, D. T., and Stanley, J. C. (1996). "Experimental and quasi-experimental designs for research on teaching" in *Handbook of Research on Teaching*. ed. N. L. Gage (Chicago, IL: Rand McNally), 171–246.

Chai, W., Li, X., and Shek, D. T. L. (2022). The effectiveness of a leadership subject using a hybrid teaching mode during the pandemic: objective outcome and subjective outcome evaluation. *Int. J. Environ. Res. Public Health* 19:9809. doi: 10.3390/ijerph19169809

Chan, D. W. (2013). Subjective well-being of Hong Kong Chinese teachers: the contribution of gratitude, forgiveness, and the orientations to happiness. *Teach. Teach. Educ.* 32, 22–30. doi: 10.1016/j.tate.2012.12.005

Chaston, J., and Lips-Wiersma, M. (2015). When spirituality meets hierarchy: leader spirituality as a double-edged sword. *J. Manag. Spiritual. Relig.* 12, 111–128. doi: 10.1080/14766086.2014.938244

Chung, P., and Bell, A. H. (2012). *Service Reborn: The Knowledge, Skills and Attitudes of Service Companies*. New York: Lexingford Publishing

Culshaw, S., and Kurian, N. (2021). Love as the lifeblood of being-well: a call for care for teachers in England's schools. *Pastor. Care Educ.* 39, 269–290. doi: 10.1080/02643944.2021.1938647

De Clercq, D., Fatima, T., and Jahanzeb, S. (2021). Gossiping about an arrogant leader: sparked by inconsistent leadership, mitigated by employee resilience. *J. Appl. Behav. Sci.* 57, 269–289. doi: 10.1177/0021886320917520

Demirtas, O., Hannah, S. T., Gok, K., Arslan, A., and Capar, N. (2017). The moderated influence of ethical leadership, via meaningful work, on followers' engagement, organizational identification, and envy. *J. Bus. Ethics* 145, 183–199. doi: 10.1007/s10551-015-2907-7

Dolbier, C. L., Soderstrom, M., and Steinhardt, M. A. (2001). The relationships between self-leadership and enhanced psychological, health, and work outcomes. *Aust. J. Psychol.* 135, 469–485. doi: 10.1080/00223980109603713

Duarte, J., and Pinto-Gouveia, J. (2017). Empathy and feelings of guilt experienced by nurses: a cross-sectional study of their role in burnout and compassion fatigue symptoms. *Appl. Nurs. Res.* 35, 42–47. doi: 10.1016/j.apnr.2017.02.006

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: the broaden-and-build theory of positive emotions. *Am. Psychol.* 56, 218–226. doi: 10.1037//0003-066x.56.3.218

Fry, L. W. (2003). Toward a theory of spiritual leadership. *Leadersh. Q.* 14, 693–727. doi: 10.1016/j.leaqua.2003.09.001

Fry, M. D., Guivernau, M., Kim, M.-S., Newton, M., Gano-Overway, L. A., and Magyar, T. M. (2012). Youth perceptions of a caring climate, emotional regulation, and psychological well-being. *Sport Exerc. Perform. Psychol.* 1, 44–57. doi: 10.1037/a0025454

Goldsby, M. G., Goldsby, E. A., Neck, C. B., Neck, C. P., and Mathews, R. (2021). Self-leadership: a four decade review of the literature and trainings. *Administr. Sci.* 11:25. doi: 10.3390/admsci11010025

Grönfeldt, S., and Strother, J. (2006). *Service Leadership: The Quest for Competitive Advantage*. California, CA: SAGE

Hausler, M., Strecker, C., Huber, A., Brenner, M., Höge, T., and Höfer, S. (2017). Distinguishing relational aspects of character strengths with subjective and psychological well-being. *Front. Psychol.* 8:1159. doi: 10.3389/fpsyg.2017.01159

Hoch, J. E., Bommer, W. H., Dulebohn, J. H., and Wu, D. (2018). Do ethical, authentic, and servant leadership explain variance above and beyond transformational leadership? A meta-analysis. *J. Manag.* 44, 501–529. doi: 10.1177/0149206316665461

Hsiao, F.-H., Klimidis, S., Minas, H., and Tan, E.-S. (2006). Cultural attribution of mental health suffering in Chinese societies: the views of Chinese patients with mental illness and their caregivers. *J. Clin. Nurs.* 15, 998–1006. doi: 10.1111/j.1365-2702.2006.01331.x

Hudgins, T. A. (2016). Resilience, job satisfaction and anticipated turnover in nurse leaders. *J. Nurs. Manag.* 24, E62–E69. doi: 10.1111/jonm.12289

Ifeagwazi, C. M., Chukwuorji, J. C., and Zacchaeus, E. A. (2015). Alienation and psychological wellbeing: moderation by resilience. *Soc. Indic. Res.* 120, 525–544. doi: 10.1007/s11205-014-0602-1

Inceoglu, I., Thomas, G., Chu, C., Plans, D., and Gerbasi, A. (2018). Leadership behavior and employee well-being: an integrated review and a future research agenda. *Leadersh. Q.* 29, 179–202. doi: 10.1016/j.leaqua.2017.12.006

Jacobs, C., Pfaff, H., Lehner, B., Driller, E., Nitzsche, A., Stieler-Lorenz, B., et al. (2013). The influence of transformational leadership on employee well-being: results from a survey of companies in the information and communication technology sector in Germany. *J. Occup. Environ. Med.* 55, 772–778. doi: 10.1097/JOM.0b013e3182972ee5

Kafetsios, K., Nezlek, J. B., and Vassiou, A. (2011). A multilevel analysis of relationships between leaders' and subordinates' emotional intelligence and emotional outcomes. *J. Appl. Soc. Psychol.* 41, 1121–1144. doi: 10.1111/j.1559-1816.2011.00750.x

Kleiman, E. M., and Beaver, J. K. (2013). A meaningful life is worth living: meaning in life as a suicide resiliency factor. *Psychiatry Res.* 210, 934–939. doi: 10.1016/j.psychres.2013.08.002

Kock, N., Mayfield, M., Mayfield, J., Sexton, S., and De La Garza, L. M. (2019). Empathetic leadership: how leader emotional support and understanding influences follower performance. *J. Leadersh. Org. Stud.* 26, 217–236. doi: 10.1177/1548051818806290

Kolb, D. A. (2014). *Experiential Learning: Experience as the Source of Learning and Development* (*2nd Edn.*). Upper Saddle River, NJ: FT Press

Komives, S. R., Lucas, N., and McMahon, T. R. (2009). *Exploring Leadership: For College Students Who Want to Make a Difference*. San Francisco: Jossey-Bass

Krampitz, J., Seubert, C., Furtner, M., and Glaser, J. (2021). Self-leadership: a meta-analytic review of intervention effects on leaders' capacities. *J. Leadersh. Stud.* 15, 21–39. doi: 10.1002/jls.21782

Li, N., Li, S., and Fan, L. (2021). Risk factors of psychological disorders after the COVID-19 outbreak: the mediating role of social support and emotional intelligence. *J. Adolesc. Health* 69, 696–704. doi: 10.1016/j.jadohealth.2021.07.018

Li, X., Shek, D. T. L., and Shek, E. Y. W. (2021). Psychological morbidity among university students in Hong Kong (2014–2018): psychometric properties of the depression anxiety stress scales (DASS) and related correlates. *Int. J. Environ. Res. Public Health* 18:8305. doi: 10.3390/ijerph18168305

Li, P., Sun, J.-M., Taris, T. W., Xing, L., and Peeters, M. C. W. (2021). Country differences in the relationship between leadership and employee engagement: a meta-analysis. *Leadersh. Q.* 32:101458. doi: 10.1016/j.leaqua.2020.101458

Lin, L., and Shek, D. T. L. (2019). Does service leadership education contribute to student well-being? A quasi-experimental study based on Hong Kong university students. *Appl. Res. Qual. Life* 14, 1147–1163. doi: 10.1007/s11482-018-9644-x

Lin, L., Shek, D. T. L., and Li, X. (2022). Who benefits and appreciates more? An evaluation of online service-learning projects in mainland China during the COVID-19 pandemic. *Appl. Res. Qual. Life*, 1–22. doi: 10.1007/s11482-022-10081-9

Littman-Ovadia, H., Dubreuil, P., Meyers, M. C., and Freidlin, P. (2021). Editorial: VIA character strengths: theory, research and practice. *Front. Psychol.* 12:653941. doi: 10.3389/fpsyg.2021.653941

Llinares-Insa, L. I., Casino-García, A. M., and García-Pérez, J. (2020). Subjective well-being, emotional intelligence, and mood of parents: a model of relationships. *Impact Gifted. Sustain.* 12:8810. doi: 10.3390/su12218810

Manz, C. C. (1986). Self-leadership: toward an expanded theory of self-influence processes in organizations. *Acad. Manag. Rev.* 11, 585–600. doi: 10.5465/amr.1986.4306232

Manz, C. C., and Sims, H. P. (1991). Superleadership: beyond the myth of heroic leadership. *Organ. Dyn.* 19, 18–35. doi: 10.1016/0090-2616(91)90051-A

Martínez-Martí, M. L., Theirs, C. I., Pascual, D., and Corradi, G. (2020). Character strengths predict an increase in mental health and subjective well-being over a one-month period during the COVID-19 pandemic lockdown. *Front. Psychol.* 11:584567. doi: 10.3389/fpsyg.2020.584567

McElwain, A., Finnegan, V., Whittaker, A., Kerpelman, J., Adler-Baeder, F., and Duke, A. (2016). Evaluation and lessons learned from an undergraduate service learning course providing youth-focused relationship education. *Eval. Program Plann.* 58, 116–124. doi: 10.1016/j.evalprogplan.2016.06.002

Miao, C., Humphrey, R. H., and Qian, S. (2016). Leader emotional intelligence and subordinate job satisfaction: a meta-analysis of main, mediator, and moderator effects. *Personal. Individ. Differ.* 102, 13–24. doi: 10.1016/j.paid.2016.06.056

Moafi, F., Momeni, M., Tayeba, M., Rahimi, S., and Hajnasiri, H. (2021). Spiritual intelligence and post-abortion depression: a coping strategy. *J. Relig. Health* 60, 326–334. doi: 10.1007/s10943-018-0705-0

Montano, D., Reeske, A., Franke, F., and Hüffmeier, J. (2017). Leadership, followers' mental health and job performance in organizations: a comprehensive meta-analysis from an occupational health perspective. *J. Organ. Behav.* 38, 327–350. doi: 10.1002/job.2124

Munir, F., Nielsen, K., and Gomes Carneiro, I. (2010). Transformational leadership and depressive symptoms: a prospective study. *J. Affect. Disord.* 120, 235–239. doi: 10.1016/j.jad.2009.03.020

Owen, J. E. (2012). Using student development theories as conceptual frameworks in leadership education. *New Dir. Stud. Serv.* 2012, 17–35. doi: 10.1002/ss.20029

Pant, N., and Srivastava, S. K. (2019). The impact of spiritual intelligence, gender and educational background on mental health among college students. *J. Relig. Health* 58, 87–108. doi: 10.1007/s10943-017-0529-3

Park, N. (2004). The role of subjective well-being in positive youth development. *Ann. Am. Acad. Pol. Soc. Sci.* 591, 25–39. doi: 10.1177/0002716203260078

Peterson, C., and Seligman, M. E. P. (2004). *Character Strengths and Virtues: A Handbook and Classification*. New York: American Psychological Association

Petrides, K. V., and Furnham, A. (2003). Trait emotional intelligence: Behavioural validation in two studies of emotion recognition and reactivity to mood induction. *Eur. J. Personal.* 17, 39–57. doi: 10.1002/per.466

Rego, A., Cunha, M. P. E., and Oliveira, M. (2008). Eupsychia revisited: the role of spiritual leaders. *J. Humanist. Psychol.* 48, 165–195. doi: 10.1177/0022167807312202

Roberts, C. (2008). Developing future leaders: the role of reflection in the classroom. *J. Leadersh. Educ.* 7, 116–130. doi: 10.12806/V7/I1/AB1

Roberts, H. E., and Foti, R. J. (1998). Evaluating the interaction between self-leadership and work structure in predicting job satisfaction. *J. Bus. Psychol.* 12, 257–267. doi: 10.1023/A:1025067128193

Roohr, K. C., Liu, H., and Liu, O. L. (2017). Investigating student learning gains in college: a longitudinal study. *Stud. High. Educ.* 42, 2284–2300. doi: 10.1080/03075079.2016.1143925

Şahin, E. E., and Gülşen, F. U. (2022). The mediating role of self-leadership in the relationship between basic psychological needs satisfaction, academic self-efficacy and career adaptability of Turkish undergraduates when life satisfaction is controlled. *Personal. Individ. Differ.* 195:111709. doi: 10.1016/j.paid.2022.111709

Schnell, T., and Krampe, H. (2020). Meaning in life and self-control buffer stress in times of COVID-19: moderating and mediating effects with regard to mental distress. *Front. Psychol.* 11:582352. doi: 10.3389/fpsyt.2020.582352

Seubert, C., Hornung, S., and Glaser, J. (2017). "Examining the role of self-leadership in an integrated model of work characteristics and health-related outcomes" in *Advances in Human Factors, Business Management and Leadership*. eds. I. K. Jussi, T. Barath and S. Nazir (Cham, Switzerland: Springer Nature), 477–489.

Sharma, R. R. (2011). An empirical investigation into the role of EQ/emotional intelligence competencies in mental well-being. *Vision* 15, 177–191. doi: 10.1177/097226291101500208

Shek, D. T. L. (2021). COVID-19 and quality of life: twelve reflections. *Appl. Res. Qual. Life* 16, 1–11. doi: 10.1007/s11482-020-09898-z

Shek, D. T. L., and Chai, W. Y. (2019). Psychometric properties of the service leadership attitude scale in Hong Kong. *Front. Psychol.* 10:1070. doi: 10.3389/fpsyg.2019.01070

Shek, D. T. L., Chung, P. P. Y., and Leung, H. (2015a). How unique is the service leadership model? A comparison with contemporary leadership approaches. *Int. J. Dis. Hum. Dev.* 14, 217–231. doi: 10.1515/ijdhd-2015-0403

Shek, D. T. L., Chung, P. P. Y., and Leung, H. (2015b). Manufacturing economy vs. service economy: implications for service leadership. *Int. J. Dis. Hum. Dev.* 14, 205–215. doi: 10.1515/ijdhd-2015-0402

Shek, D. T. L., Chung, P., and Zhu, X. (2018a). "Service leadership in the service era" in *Encyclopedia of Business and Professional Ethics*. eds. D. C. Poff and A. C. Michalos (Cham: Springer), 1–7.

Shek, D. T. L., Chung, P., and Zhu, X. (2022a). "Service leadership as the backbone of university social responsibility" in *University Corporate Social Responsibility and University Governance*. ed. D. C. Poff (Cham: Springer), 105–118.

Shek, D. T. L., Dou, D., and Ma, L. K. (2019). Development and validation of a pioneer scale on service leadership behavior in the service economies. *Front. Psychol.* 10:1770. doi: 10.3389/fpsyg.2019.01770

Shek, D. T. L., Li, X., Yu, L., Lin, L., and Chen, Y. (2022b). Evaluation of electronic service-learning (e-service-learning) projects in mainland China under COVID-19. *Appl. Res. Qual. Life* 17, 3175–3198. doi: 10.1007/s11482-022-10058-8

Shek, D. T. L., and Lin, L. (2015). Intrapersonal competencies and service leadership. *Int. J. Dis. Hum. Dev.* 14, 255–263. doi: 10.1515/ijdhd-2015-0406

Shek, D. T. L., and Ma, C. M. S. (2010). Dimensionality of the Chinese positive youth development scale: confirmatory factor analyses. *Soc. Indic. Res.* 98, 41–59. doi: 10.1007/s11205-009-9515-9

Shek, D. T. L., Peng, H., and Zhou, Z. (2022c). Editorial: children and adolescent quality of life under socialism with Chinese characteristics. *Appl. Res. Qual. Life* 17, 2447–2453. doi: 10.1007/s11482-021-09999-3

Shek, D. T. L., Sun, R. C. F., and Liu, T. (2015c). Character strengths in Chinese philosophies: relevance to service leadership. *Int. J. Dis. Hum. Dev.* 14, 309–318. doi: 10.1515/ijdhd-2015-0452

Shek, D. T. L., Yu, L., and Fu, X. (2013). Confucian virtues and Chinese adolescent development: a conceptual review. *Int. J. Adolesc. Med. Health* 25, 335–344. doi: 10.1515/ijamh-2013-0031

Shek, D. T. L., Yu, L., Wu, F. K. Y., Zhu, X., and Chan, K. H. Y. (2017). A 4-year longitudinal study of well-being of Chinese university students in Hong Kong. *Appl. Res. Qual. Life* 12, 867–884. doi: 10.1007/s11482-016-9493-4

Shek, D. T. L., and Zhu, X. (2018). "Pretest-posttest designs" in *The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation*. ed. B. B. Frey (Thousand Oaks, CA: Sage Publications), 1293–1295.

Shek, D. T. L., Zhu, X., and Chan, K.-M. (2018b). Development of service leadership behavior scale: background and conceptual model. *Int. J. Child Adolesc. Health* 11, 415–424.

Shek, D. T. L., Zhu, X., Dou, D., and Merricke, J. (2021). *Service Leadership Theory: Origin and Nature*. New York, NY: Nova Science Publishers Inc

Shek, D. T. L., Zhu, X., and Zhu, A. Y. F. (2018c). Conceptual background and the development of service leadership knowledge scale. *Int. J. Child Adolesc. Health* 11, 395–404.

Shoshani, A., and Slone, M. (2013). Middle school transition from the strengths perspective: Young adolescents' character strengths, subjective well-being, and school adjustment. *J. Happiness Stud.* 14, 1163–1181. doi: 10.1007/s10902-012-9374-y

Sjöblom, K., Juutinen, S., and Mäkikangas, A. (2022). The importance of self-leadership strategies and psychological safety for well-being in the context of enforced remote work. *Challenges* 13:14. doi: 10.3390/challe13010014

Snell, R. S., Chan, M. Y. L., Ma, C. H. K., and Chan, C. K. M. (2015). A road map for empowering undergraduates to practice service leadership through service-learning in teams. *J. Manag. Educ.* 39, 372–399. doi: 10.1177/1052562914545631

Sosik, J. J., Chun, J. U., Ete, Z., Arenas, F. J., and Scherer, J. A. (2019). Self-control puts character into action: examining how leader character strengths and ethical leadership relate to leader outcomes. *J. Bus. Ethics* 160, 765–781. doi: 10.1007/s10551-018-3908-0

Stephens, C. M., and Beatty, C. C. (2015). Leading and thriving: how leadership education can improve first-year student successes. *J. Leadersh. Educ.* 14, 119–131. doi: 10.12806/V14/I3/T1

Sun, R. C. F., and Shek, D. T. L. (2010). Life satisfaction, positive youth development, and problem behaviour among Chinese adolescents in Hong Kong. *Soc. Indic. Res.* 95, 455–474. doi: 10.1007/s11205-009-9531-9

Thyer, B. A. (2002). "Evaluation of social work practice in the new millennium: myths and realities" in *Advances in Social Welfare in Hong Kong*. ed. D. T. L. Shek (Hong Kong: Chinese University Press), 3–18.

Turner, M., Scott-Young, C. M., and Holdsworth, S. (2017). Promoting wellbeing at university: the role of resilience for students of the built environment. *Constr. Manag. Econ.* 35, 707–718. doi: 10.1080/01446193.2017.1353698

Umucu, E., Tansey, T. N., Brooks, J., and Lee, B. (2021). The protective role of character strengths in COVID-19 stress and well-being in individuals with chronic conditions and disabilities: an exploratory study. *Rehab. Counsel. Bull.* 64, 67–74. doi: 10.1177/0034355220967093

Uzman, E., and Maya, I. (2019). Self-leadership stategies as the predictor of self-esteem and life satisfaction in university students. *Int. J. Progress. Educ.* 15, 78–90. doi: 10.29329/ijpe.2019.189.6

Wahyono, Prihandono, D., and Wijayanto, A. (2021). The influence of spiritual leadership on spirituality, conscientiousness and job satisfaction and its impacts on the reduction of workplace deviant behavior. *J. Econ. Administr. Sci.* 37, 90–113. doi: 10.1108/JEAS-02-2019-0015

Walumbwa, F. O., Peterson, S. J., Avolio, B. J., and Hartnell, C. A. (2010). An investigation of the relationships among leader and follower psychological capital, service climate, and job performance. *Pers. Psychol.* 63, 937–963. doi: 10.1111/j.1744-6570.2010.01193.x

Yang, Y., and Wen, M. (2021). Filial piety and parental depressive symptoms: all children matter—evidence from rural Northern China. *J. Cross Cult. Gerontol.* 36, 155–167. doi: 10.1007/s10823-021-09430-2

Yu, L., Shek, D. T. L., and Zhu, X. (2019). General education learning outcomes and demographic correlates in university students in Hong Kong. *Appl. Res. Qual. Life* 14, 1165–1182. doi: 10.1007/s11482-018-9645-9

Zhang, R. (2016). Positive affect and self-efficacy as mediators between personality and life satisfaction in Chinese college freshmen. *J. Happiness Stud.* 17, 2007–2021. doi: 10.1007/s10902-015-9682-0

Zhang, Y., and Chen, M. (2018). Character strengths, strengths use, future self-continuity and subjective well-being among Chinese university students. *Front. Psychol.* 9:1040. doi: 10.3389/fpsyg.2018.01040

Zhao, Y., Sang, B., and Ding, C. (2021). The roles of emotional intelligence and adversity quotient in life satisfaction. *Curr. Psychol.* 41, 9063–9072. doi: 10.1007/s12144-021-01398-z

Zhou, Z., Shek, D. T. L., Zhu, X., and Lin, L. (2021). The influence of moral character attributes on adolescent life satisfaction: the mediating role of responsible behavior. *Child Indic. Res.* 14, 1293–1313. doi: 10.1007/s12187-020-09797-7

Zhou, H., Wang, Y., and Cheng, L. (2022). The mediating effect of self-directed learning in the relationship between caring and resilience among Chinese nursing students: a multi-center cross-sectional study. *Nurse Educ. Today* 119:105598. doi: 10.1016/j.nedt.2022.105598

Zhu, X., Chai, W., Shek, D. T. L., and Lin, L. (2022). Promotion of meaning in life and wellbeing among university students during the COVID-19 pandemic via a service-learning subject. *Front. Public Health* 10:924711. doi: 10.3389/fpubh.2022.924711

Zhu, X., and Shek, D. T. L. (2020). The influence of adolescent problem behaviors on life satisfaction: parent–child subsystem qualities as mediators. *Child Indic. Res.* 13, 1767–1789. doi: 10.1007/s12187-020-09719-7

Zhu, X., and Shek, D. T. L. (2021a). Problem behavior and life satisfaction in early adolescence: longitudinal findings in a Chinese context. *J. Happiness Stud.* 22, 2889–2914. doi: 10.1007/s10902-020-00346-1

Zhu, X., and Shek, D. T. L. (2021b). Promoting service leadership qualities and well-being among university students: evaluation findings in Hong Kong. *Appl. Res. Qual. Life* 16, 2475–2495. doi: 10.1007/s11482-021-09922-w

Zhu, X., Shek, D. T. L., and Chan, C. H. M. (2021). Promoting service leadership qualities and well-being among university students through an online course during COVID-19 pandemic. *Int. J. Environ. Res. Public Health* 18:8162. doi: 10.3390/ijerph18158162

frontiers | Frontiers in Psychology

TYPE Original Research
PUBLISHED 20 January 2023
DOI 10.3389/fpsyg.2023.1089557

OPEN ACCESS

EDITED BY
Steven Van Den Heuvel,
Evangelical Theological Faculty,
Belgium

REVIEWED BY
Sheila Keener,
Old Dominion University,
United States
Mahfuzur Rahman,
University of Lincoln,
United Kingdom

*CORRESPONDENCE
Marjolein C. J. Caniëls
✉ marjolein.caniels@ou.nl

SPECIALTY SECTION
This article was submitted to Positive Psychology, a section of the journal Frontiers in Psychology

RECEIVED 04 November 2022
ACCEPTED 04 January 2023
PUBLISHED 20 January 2023

CITATION
Caniëls MCJ (2023) How remote working increases the importance of positive leadership for employee vigor.
Front. Psychol. 14:1089557.
doi: 10.3389/fpsyg.2023.1089557

How remote working increases the importance of positive leadership for employee vigor

Marjolein C. J. Caniëls*

Faculty of Management, Open Universiteit, Heerlen, Netherlands

Introduction: Leadership is essential for creating a healthy and happy work environment for employees. Due to the COVID-19 pandemic, working remotely from home has become prevalent for many employees, which challenges leaders to reach out to their followers even if these followers are not physically at work. Drawing on positive psychology theories, the aim of this study is to investigate the relationship between positive leadership and psychological energy (i.e., vigor), and particularly the extent in which this relationship is affected by whether employees are working from home, as well as the tenure of the leader-follower relationship.

Methods: A two-wave time-lagged study design is used with a sample of 186 followers.

Results: Findings indicate that the effect of positive leadership on followers' vigor is especially strong when employees work from home, and even more so when leaders and followers have a long lasting work relationship.

Discussion: The study shows that positive leadership behaviors are positively related to employee vigor. Such positive leadership behaviors consist of praising follower's individual performance, personally thanking followers, cheering them up, and helping them with specified tasks.

KEYWORDS

positive leadership, well-being, vigor, psychological energy, remote working, turbulent times, COVID-19

1. Introduction

Leadership has been found to be associated to organizationally relevant outcomes, such as employee motivation, work behavior, and performance (Tummers and Bakker, 2021). Also the link between leadership and employee wellbeing has been topic of abundant study (e.g., Gilbreath and Benson, 2004; Kelloway et al., 2012), indicating that leadership is an important predictor of the mental and physical wellbeing of followers (Gilbreath and Benson, 2004). Adopting the argumentation of positive psychology (Seligman and Csikszentmihalyi, 2000), this study will focus on positive leadership. i.e., "behaviors that are enacted by leaders and result in increasing followers' experience of positive emotions" (Kelloway et al., 2013, p. 108). Positive leadership entails behaviors such as thanking and praising followers and cheering them up. Positive leadership is expected to be especially relevant in turbulent times (Sinclair et al., 2020).

Over the past years, the nature of work has changed. The COVID-19 pandemic caused many people to lose their jobs, change their jobs, or adapt their ways of working to working remotely from home (Kniffin et al., 2021). In these years, remote work has become vastly more accepted for a large variety of jobs. Technical innovations, such as fast and safe internet connections, have provided the opportunity to many employees to schedule meetings *via* video conferencing and working on the office computer from home *via* Virtual Private Network (VPN services). Furthermore, working from home has become more socially accepted at the workplace, as even the most technically challenged and computer-averse people have experimented with working from their home office during the height of the pandemic and have discovered its advantages (Aczel et al., 2021; Ipsen et al., 2021). With the established habit of working remotely on at least some workdays each week, the workplace has changed. Therefore, also

leadership has to change to ensure happy, healthy, and high-performing workers (Coun, 2021; Foss, 2021).

A useful indicator of employee wellbeing is vigor (Bakker et al., 2008; Shirom, 2011). Vigor is an important dimension of work engagement. It refers to the extent in which employees feel strong and vigorous when working and attain a work-related positive and fulfilling state of mind (Schaufeli and Bakker, 2004a; Schaufeli and Salanova, 2007). Vigor reflects "individuals' feelings that they possess physical strength, emotional energy, and cognitive liveliness" (Shirom, 2011, p. 50). Due to the COVID-19 pandemic, working from home has become prevalent for many employees, which provides challenges to leaders, as it may become more difficult for them to reach out to their followers when these followers are not physically present at the workplace. It may be so that employees working from home have more need for positive leadership than employees who are physically present at work, especially during mentally and physically taxing times. Therefore, the question becomes whether and to what extent positive leadership behaviors contribute to vigor (i.e., psychological energy) of employees, and whether this relationship is conditioned by the extent to which employees work from home and by the duration of the leader-follower relationship.

Drawing on positive psychology theories (Seligman and Csikszentmihalyi, 2000), the aim of this study is to investigate the relationship between positive leadership and vigor, and particularly the extent in which this relationship is moderated by a three-way interaction between positive leadership × remote work × tenure of the leader-follower relationship. To this end, a two-wave time-lagged study design is used with a sample of 186 leader-follower dyads from Dutch and Flemish organizations. Findings indicate that the effect of positive leadership on followers' vigor is especially strong when employees work from home, and even more so when leaders and followers have a long-lasting work relationship.

This study contributes to the literature by exploring the moderating effect of remote work on the relationship between perceived positive leadership behaviors and employee psychological energy. Thereby, it responds to the call for leadership research that takes account of the changing nature of work (Coun, 2021), given turbulent times (Burger et al., 2022). By exploring the relationship between positive leadership and employee vigor, this study answers to the call for empirical studies that address the impact of increased working from home due to COVID-19 (e.g., Kniffin et al., 2021). Furthermore, this study's theoretical viewpoint and empirical results signify a meaningful contribution to the overall occupational health psychology literature. Occupational health psychology has posed the question of how to create and shape "healthy" organizations, that are characterized by the creation of work environments that encourage employee work-related wellbeing and health over time (Cooper et al., 2001; Nerstad et al., 2020). Given turbulent times with increased levels of remote working, there is a need for more insights about psychosocial work environments that foster wellbeing, and consequently, more study is needed of the antecedents of vigor (Fritz et al., 2011; Shirom, 2011). In practice, the current study could offer guidance to organizations and their leaders with respect to how employees can be enabled to maintain their vigor and energy levels, and thus foster their wellbeing at work.

The remainder of the study is organized as follows. Section 2 provides the theoretical background to the hypotheses by justifying the theoretical basis for direct, moderated, and three-way relationships between the key variables of this study. Section 3 discusses characteristics of the sample as well as the method that was employed to gather the data and techniques that were used to analyze the data. Results of relevant analyses are shown in Section 4. Sections 5–7 discuss the results, provide theoretical and practical implications of the study and address limitations, respectively.

2. Theoretical background and hypotheses

2.1. Vigor and positive leadership

Various studies have connected vigor to employee-level outcomes, such as increased performance, subjective work capacity, and physical health (Shirom et al., 2008; Halbesleben, 2010; Shirom, 2010). Given that vigor captures positive functioning and wellbeing at work, it is of critical importance to further gain insights about the antecedents of vigor (Shirom, 2010, 2011; Nerstad et al., 2020).

Studies have shown that leadership style is an important predictor of vigor (e.g., Shirom, 2011). With the advent of positive psychology (Seligman and Csikszentmihalyi, 2000) and the study of positive organizational behavior (Luthans, 2002; Wright, 2003) scholars have sought to increase their understanding of workplace wellbeing and work engagement and found evidence of a positive relationship between several leadership styles and vigor. Avolio (1999) showed that transformational leadership leads to energizing emotions among employees. Leaders displaying relationship-building behaviors have been found to induce vigor among their followers, either directly, or through a mediation by interpersonal trust and cohesiveness that are fostered by relationship-building behaviors (Carmeli et al., 2009; Shirom, 2011).

While various leadership styles and behaviors have been associated with wellbeing and work engagement, none of these leadership styles fully capture leader positivity. For example, transformational leadership refers to a leadership style in which leaders inspire and motivate followers to not only achieve their goals, but also to perform beyond expectations in order to address collective organizational values and needs (Bass, 2005). Transformational leaders encourage their followers to strive for excellence, try out new ideas, and challenge the status quo in order to bring about positive change in the organization (Bass, 2005). Different definitions of transformational leadership may place emphasis on different aspects, but all agree that inspiring and supporting followers to achieve success for the organization is at the core of transformational leadership (Bass, 2005; Van Dierendonck et al., 2014). In contrast, positive leadership emphasizes leader behaviors that create positive emotions in employees to benefit followers' wellbeing (Kelloway et al., 2013). Positive leaders prioritize building relationships and creating a workplace where employees feel valued and supported (Kelloway et al., 2013). In other words, whereas transformational leadership focuses on organizational effectiveness (Van Dierendonck et al., 2014), positive leadership primarily emphasizes followers' needs and wellbeing.

Positive leadership focuses on creating positive work experiences for employees (Kelloway et al., 2013) and it is associated with positive self-concepts (Hannah et al., 2009) and positive (but not negative) affect toward work (Kelloway et al., 2013) and the organization (Youssef-Morgan and Luthans, 2013). Studies have shown a positive association between positive leadership and employees' positive emotions (Lilius et al., 2008; Cameron and Plews, 2012). Building on Fredrickson's (2001) broaden-and-build theory of positive emotions, which suggests that positive affective states generate personal resources that are essential for psychological and physical wellbeing (Fredrickson, 1998), it is likely that positive leadership behaviors, by inducing positivity in followers, are positively associated with follower vigor. This idea is consistent with Affective Events Theory (AET, Weiss and Cropanzano, 1996), which indicates that work events may trigger affective reactions in employees, which, in turn, determine their attitudes and behaviors at work. Positive

leadership behaviors are expected to create positive work events for their followers and thereby induce vigor. Therefore:

> *Hypothesis 1*: Perceived positive leadership is positively associated with follower vigor.

2.2. The moderating effect of remote working

The COVID-19 pandemic forced organizations to develop new work routines, including the facilitation of remote working for employees (Kniffin et al., 2021). In the aftermath of the pandemic, it has become clear that remote work is here to stay (Kniffin et al., 2021; Mckinsey, 2021) and currently organizations are considering how to adapt their work routines to this development (Muzio and Doh, 2021). Against this backdrop, it is expected that remote workers' vigor (as compared to on-site workers' vigor) may particularly benefit from positive leadership behaviors. The main reason for this relates to the fact that remote-working employees may be especially prone to social isolation, negative thoughts, and feelings of unhappiness (Ipsen et al., 2021). Remote working has been shown to restrain the possibilities for social and informal exchanges with colleagues (Tremblay and Thomsin, 2012; Boell et al., 2016). Remote work and the increased risk of social isolation have been linked to reduced wellbeing and poor performance (Marshall et al., 2007). Furthermore, social isolation and psychological distress mutually affect each other over time, which may induce a negative spiral (Van Zoonen and Sivunen, 2022), specifically for remote workers.

Positive leadership evokes positive feelings in followers (Lilius et al., 2008; Cameron and Plews, 2012). Positive behaviors of leaders may provide rays of sunlight on a dark day, especially for remote workers. Given their proneness to social isolation and detachment, it is expected that for remote workers (more than for office workers), positive interactions with their leaders show them that they are a valuable contribution to the organization and that they are an appreciated part of a workgroup. Positive leadership is invigorating and it may be exactly what remote workers need to remain happy and healthy while doing their job. This is not to deny that office workers also need to feel valued. Yet, by being in the office, office workers have more opportunities to observe their leaders for behavioral cues and they may therefore have less need for explicit confirmations, such as provided by positive leadership. Hence, it is likely that the positive relationship between positive leadership and vigor is particularly strong for remote workers (as compared to office workers).

> *Hypothesis 2*: Remote working moderates the positive relationship between positive leadership and vigor, such that this relationship is strengthened for remote workers.

2.3. Leader-follower relationship tenure

Leader-follower relationship tenure reflects the duration of the work relationship between a leader and his/her follower and is often associated with leader–follower relationship quality (Guarana and Barnes, 2017). The strength of the leader-follower exchange relationship increases over time (Guarana and Barnes, 2017). When leader-follower relationship tenure is short, leaders and followers are not familiar with each other, which changes when tenure increases and the social exchange relationship becomes stronger (Dienesch and Liden, 1986; Guarana and Barnes, 2017). Long-lasting work relationships are characterized by mutual trust and understanding (Dienesch and Liden, 1986). Leaders in long-lasting leader-follower relationships have a good knowledge about their followers and what makes them tick. Later in the relationship (i.e., at a higher tenure), leaders and followers have a wide set of observations of each other by which they can evaluate the stability of emotional cues, making it easier for leaders to influence these followers. Therefore, leader-follower relationship tenure is expected to further strengthen the moderating effect of remote work on the positive leadership–vigor relationship.

When leader-follower relationship tenure is high, it is expected that positive leadership relates more strongly positive to vigor for remote workers than for office workers. Remote workers are expected to need extra confirmation that their performance is up to par and that they are fulfilling their leaders' expectations (because of their otherwise social isolation). The positive leadership behaviors (compliments, thanking, and cheering up) provide such confirmations for them. On-site workers with a long dyad tenure may have less need for such explicit confirmations as they may pick them up from less explicit gestures and eye-contact with their leader on-site.

In contrast, when leader-follower relationship tenure is low, no significant difference is expected to be found between remote workers and office workers with respect to the positive leadership-vigor relationship. The justification being that the duration of the leader-follower relationship has been too short for leaders to be able to evaluate stability of emotional cues of office workers and remote workers alike.

In other words, the effect of positive leadership on followers' vigor is expected to be especially strong for employees who work from home and have a long-lasting work relationship with their leader. That is, a three-way interaction between positive leadership, remote work, and leader-follower relationship tenure may exist.

> *Hypothesis 3*: The relationship between positive leadership and vigor is dependent on the interaction effect between remote working and leader-follower relationship tenure. Specifically, given high leader-follower relationship tenure and high levels of remote working, the relationship between positive leadership and vigor becomes more positive, compared to the relationship for individuals with low levels of remote working.

Figure 1 summarizes all hypothesized relationships.

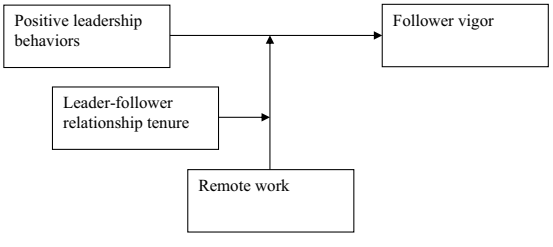


FIGURE 1
Conceptual model.

3. Methods

3.1. Sample

Data were gathered in two waves by using the online open-source survey platform LimeSurvey. In the study, 186 employees from various Dutch and Flemish organizations participated. They represented the follower-side in a leader-follower dyad. For the goal of this study, participants filled out two questionnaires, 7 weeks apart. At the first measurement point (T1), data were collected among followers about the perceived leadership behaviors that were shown by their own leader. In this wave also, self-reported data were gathered from employees about whether they have been working from home more than usual due to COVID-19 and its effects on their work. Furthermore, data were collected about the tenure of followers' work relationship with their leader. Data about the dependent variable, followers' vigor, were collected at the second measurement point (T2). The Ethics Committee of the researcher's university approved the study. Informed consent was provided by the participants in the study and a number of procedures were employed to limit common method bias, including pseudonymization, request for honest answers, and the opportunity to stop anytime without the need to provide a reason.

The choice for a 7-week time interval was partly based on established conduct and partly on practical reasons. Other studies capturing behavioral outcomes have used a similar lag (e.g., Cui et al., 2008; Vasey et al., 2014) and have shown that a lag of several weeks is appropriate for extracting information on behavioral patterns (Cui et al., 2008). A 7-week delay between measurements reduces the likelihood that responses given in the first measurement will be remembered and influence responses in the second measurement. There was also a practical reason. The design of the timeline for this study was influenced by the restricted possibilities for respondents of accessing the survey tool.

Two inclusion criteria were employed when selecting respondents for the sample. First, inclusion depended on whether there was a hierarchical leadership relation between the leader and the follower in the dyad. Second, given that the survey was in Dutch, inclusion depended on mastery of the Dutch language.

In total, 246 followers were invited to participate in the study. At the first measurement point, 218 followers completed the questionnaire. After the second wave of data collection, the final sample consisted of 186 followers who filled in the survey on both measurement points (T1 and T2). In this dataset, 57.9% of followers were female. On average, followers were 42.7 years old ($SD = 12.6$) and more than 50% of followers had a bachelor degree or higher.

Respondents were recruited from a multitude of sectors and from organizations of various sizes. For 163 respondents, information about sector and size of the organization was disclosed in the survey. The three most represented sectors are healthcare (27%), financial services (21%), and manufacturing (18%). Most respondents work in large companies with more than 1,000 employees (63%), but also smaller organizations with between 0 and 99 employees are represented in the sample (9%), as well as middle-sized companies (100 to 499 employees: 15%; 500 to 999 employees: 12%).

3.2. Measures

Validated scales from prior studies were used to assess the key variables in the current study. Items originating from English scales were translated into Dutch by adopting the back-translation procedure recommended by Brislin (1986).

3.2.1. Positive leadership

At the first measurement (T1), positive leadership was measured by a 5-item scale, validated by Kelloway et al. (2013). Participants were asked to reflect on the past months of work and to indicate how often their supervisor had displayed positive leadership behaviors. An example item is "My leader praised me for my job performance." Each item was rated on a 5-point scale with higher scores representing a higher frequency of the specific leader behavior. Reliability of the scale was assessed using McDonald's (1999) omega (ω) in addition to Cronbach's alpha (α). The reliability analysis showed good internal reliability of the vigor scale ($\omega = 0.90$, $\alpha = 0.90$).

3.2.2. Working from home

Respondents were asked whether they were working completely from home, or working from home more than usual because of (the aftermath of) COVID-19 (T1). Respondents could answer "yes" (coded "1") or "no" (coded "2").

3.2.3. Tenure of the leader-follower relationship

Following Vasquez et al. (2021), leader–follower relationship tenure was measured using the single item "How long have you been working with your current leader?." Answer categories ranged from "less than one year" (coded "1") to "more than four years" (coded "5").

3.2.4. Vigor

At the second measurement (T2), vigor was assessed using the vigor dimension (3 items) of the 9-item Dutch Utrecht Work Engagement Scale (UWES, or UBES in Dutch; Schaufeli and Bakker, 2004b; $\omega = 0.83$, $\alpha = 0.83$). An example item is "At my work, I feel bursting with energy." Each item was rated on a 5-point scale, ranging from 1 (never) to 5 (always). Previous studies have extensively used this scale and confirmed its validity and reliability (Schaufeli et al., 2006; Seppälä et al., 2009).

3.2.5. Control variables

Several control variables were assessed, as prior studies have indicated that the demographic background of employees may explain some of the variance in their levels of energy (e.g., Bakker et al., 2005). Respondents were asked to report their year of birth and their gender (coded 0 for male and 1 for female). Education level was evaluated using six levels common to the Dutch and Flemish educational systems (1 = basic education; 2 = high school; 3 = applied education; 4 = higher applied education; 5 = university degree; 6 = PhD).

3.3. Analytical strategy

The hypotheses were analyzed using Jamovi open-source software (The Jamovi project, 2022), as well as R Studio (R Core Team, 2021) and various R-packages, including lavaan (Rosseel, 2012) and the Process function for R (Hayes, 2021). Collinearity statistics for the independent variables were calculated. All Variance Inflated Factors (VIFs) were well below the recommended threshold of four (Hair et al., 2017). Model fit was assessed by means of a Confirmatory Factor Analysis (CFA). When all items of the core model variables were included in a four-factor model, the following fit measures were generated: $\chi 2 = 80$; $df = 31$; RMSEA = 0.09; CFI = 0.94; TLI = 0.92, indicating an acceptable fit. The

four-factor model fit is preferable over the fit of the one-factor specification of the model ($\chi 2 = 280$; df = 35; RMSEA = 0.19; CFI = 0.71; TLI = 0.63). Regression and moderation analyses were used to test the hypotheses. The moderation models were analyzed, using 10,000 bootstrap samples. Following conventional procedures (Aiken et al., 1991), to enhance the interpretability of the analyses, continuous predictor variables were mean-centered prior to constructing the interaction terms for the moderation analyses.

4. Results

Table 1 summarizes the means, standard deviations, and correlations between the main variables in the study. All correlations were below the threshold of 0.70 (Tabachnick and Fidell, 2001), indicating that a presence of multicollinearity in the dataset is unlikely. Age and education level are negatively associated with vigor, which is in line with findings from previous studies (Bakker et al., 2005).

Table 2 presents the results from the regression and moderation analyses. Model 1 shows the results of the multiple regression of the model variables. It includes the control variables age and education level ($n = 169$), as these controls were flagged in the correlation analysis as having a positive relationship with vigor. The analysis indicates a direct positive association between positive leadership and vigor ($b = 0.18$; $p = 0.000$), thereby supporting Hypothesis 1. Given the limited size of the sample ($n = 169$) and the insignificance of education level as a control variable in Model 1, as well as the small effect size of the correlation between age and vigor in the correlation matrix ($r = 0.231$), it was decided to exclude this control variable in further model specifications, to improve the power of the analyses. Hereby, the underlying study adheres to recommendations of Bernerth and Aguinis (2016) as well as Becker (2005) about parsimonious use of control variables. Including education level as a second control variable reduces the power of the analyses and could limit the possibility of finding significant effects in de moderation analyses (Becker, 2005; Bernerth and Aguinis, 2016). Therefore, the second model (Model 2) only includes age as a control ($n = 177$). The positive direct relationship between positive leadership and vigor is nuanced as soon as the interaction effects are added to the model specification, which are needed to test Hypotheses 2 and 3. Model 2 in Table 2 reports a positive and significant two-way interaction between remote work and positive leadership, which supports Hypothesis 2. Also, a positive and significant three-way interaction was reported (Model 3), which is supportive of Hypothesis 3. Model 4 shows the results of a model without control variables ($n = 186$). Results differ only slightly across models with respect to effect sizes. However, the three-way interaction gains in significance when age is excluded from the model specification (Model 4 vs. Model 3). The pattern of results of the various analyses suggests that Model 3 can be considered the best reflection of the findings, as age has been shown to be a small, though significant, predictor of vigor.

Models 2 and 3 indicate significant two-way and three-way interactions. Given these significant interactions, a simple slope analysis has been performed for Model 3. Simple slopes were tested for low (one standard deviation below the mean), moderate (mean), and high (one standard deviation above the mean) levels of the moderators, as recommended by Aiken et al. (1991). In Figure 2, the three-way interaction was plotted using the R package sjPlot (Gelman, 2008), which provides an illustration of the interaction effects. The left panel in Figure 2 shows the interaction between remote work and positive leadership for an average level of leader-follower relationship tenure. In essence, this panel reflects the two-way interaction between remote work and positive leadership. The middle panel in Figure 2 shows the three-way interaction for low (one standard deviation below the mean) values of leader-follower relationship tenure. The two regression lines all but overlap. However, when looking at the right panel in Figure 2, which reflects the situation at high (one standard deviation above the mean) levels of leader-follower relationship tenure, it can clearly be seen that the regression lines differ for working remotely from home (blue, upward-sloping line) and not working remotely from home (red, downward-sloping line). This finding supports Hypothesis 3, which poses that remote workers experience a stronger positive relationship between positive leadership and vigor than workers who do not work remotely (more than before the pandemic).

5. Discussion

While various studies have explored the relationship between leadership and wellbeing of employees at work, the plausible effect of leader positivity has not been captured in previous empirical studies. The current study focused on the relationship between positive leadership behaviors and one important aspect of employee wellbeing, namely vigor. Vigor reflects feelings of psychological energy and physical strength (Shirom, 2011). The results of the present study indicate that positive leadership indeed is positively associated with vigor, and this

TABLE 1 Correlation matrix.

	Mean	SD	1	2	3	4	5	6	7
1. Age	42.7	12.6	—						
2. Gender	0.58	0.5	−0.07	—					
3. Education level	3.92	0.89	−0.40***	−0.01	—				
4. Leader–follower relationship tenure (T1)	2.02	0.66	0.37***	0.00	−0.23**	—			
5. Working from home (T1)	1.6	0.49	−0.19*	−0.05	−0.04	−0.07	—		
6. Positive leadership (T1)	3.13	0.75	−0.10	0.02	−0.11	−0.01	0.13	(0.90; 0.90)	
7. Vigor (T2)	3.74	0.65	0.23**	−0.06	−0.23**	0.04	0.06	0.21**	(0.83; 0.83)

SD denotes the standard deviation; (ω; α) reported on the diagonal.
*$p < 0.05$.
**$p < 0.01$.
***$p < 0.001$.

TABLE 2 Results of multiple regression analyses predicting vigor.

	Model 1 linear regression	Model 2 two-way moderation	Model 3 three-way moderation	Model 4 three-way moderation excluding controls
Constant	3.68***	3.45***	2.96***	3.63***
Education level	−0.09	−0.08		
Age	0.01**	0.01**	0.01***	
Positive leadership (T1; LPOS)	0.18***	−0.30	−0.28	−0.35*
Working from home (T1; HOME)	0.08	0.09	0.11	0.06
Leader–follower relationship tenure (T1; LMXT)	−0.06		−0.5**	−0.48**
LPOS × HOME		0.29**	0.29**	0.32***
LPOS × LMXT			−0.78***	−0.80***
HOME × LMXT			0.27*	0.31**
LPOS × HOME × LMXT			0.40**	0.43***
R^2	0.12	0.15	0.19	0.13
F Statistic (df = 5; 173)	4.87***			
F Statistic (df = 5; 179)		7.78***		
F Statistic (df = 8; 186)			6.71***	
F Statistic (df = 7; 186)				5.03***

*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

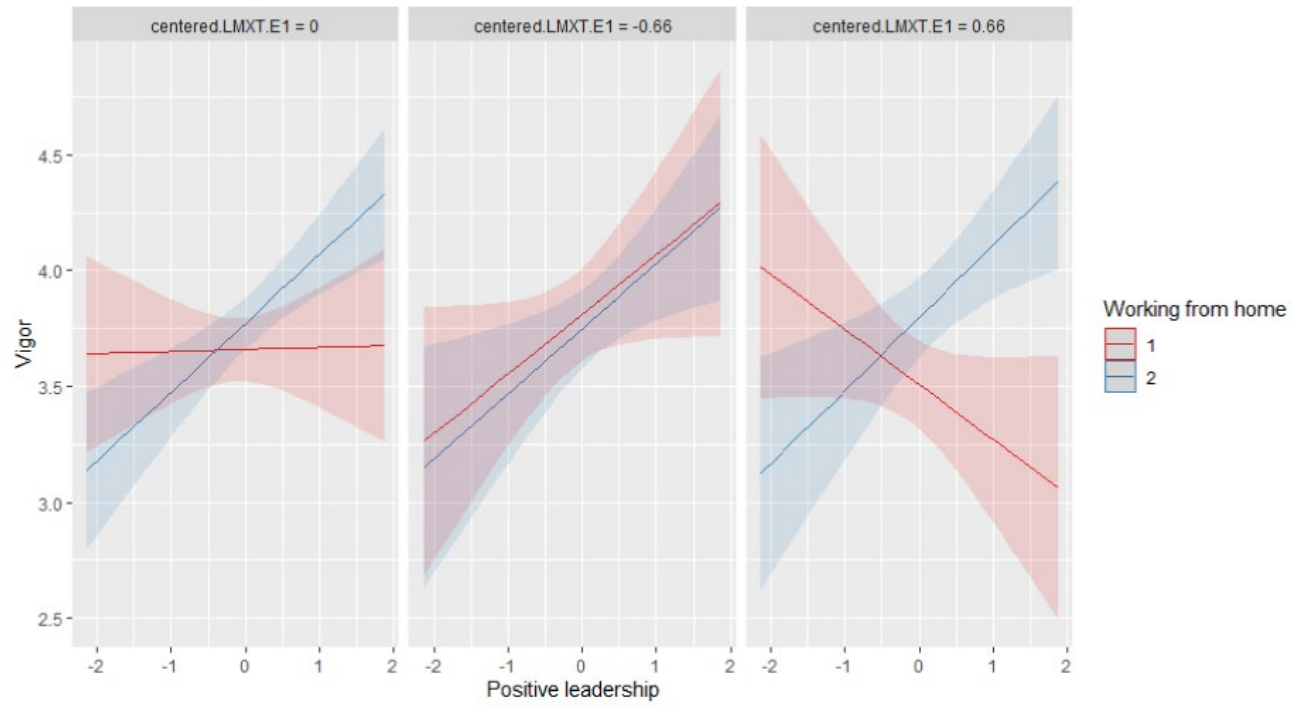


FIGURE 2
Three-way interaction (positive leadership × working from home × leader-follower relationship tenure) on the relationship between positive leadership behaviors and vigor. LMXT.E1 denotes leader-follower relationship tenure; Working from home "yes" is coded "1," "no" is coded "2."

positive relationship is especially strong for followers who are working remotely from home (more than before the pandemic). Moreover, the moderating effect of remote work is further enhanced for followers who experience a long leader-follower relationship tenure.

The results of this study generate several theoretical and practical implications. First, the present study contributes to studies in the line of positive psychology (Seligman and Csikszentmihalyi, 2000). Specifically, this study contributes to broaden-and-build theory (Fredrickson, 2001), by investigating positive leadership behaviors and their association with employee wellbeing (vigor). Where previous studies have associated employees' positive affective states with the development of personal resources that are vital for employee wellbeing (Fredrickson, 2001), the present study explicitly provides evidence of positive leadership behaviors and the conditions under which these behaviors are associated with employee wellbeing (i.e., vigor). In this way, the present study extends current knowledge about antecedents of vigor (Fritz et al., 2011; Shirom, 2011). Positive leadership focuses on increasing positive work experiences for employees (Kelloway et al., 2013). This notion is supported by the findings of the current study that indicate that positive leadership behaviors indeed are positively associated with follower vigor (Hypothesis 1).

Second, by exploring conditions under which positive leadership behaviors are associated with vigor, this study responds to recent calls for leadership research that addresses the changing organization of work, which includes the accelerated uptake of flexible work arrangements (Coun, 2021; Foss, 2021), and which may imply an increased focus on individual objectives and rewards (Foss, 2021), thereby intensifying the importance of the leader-follower relationship (Spicer, 2020). The present study shows that specifically remote workers' vigor (as compared to on-site workers' vigor) benefits from positive leadership behaviors. The positive events generated by leaders are especially advantageous for followers who are less in the office than before the pandemic and may be susceptible to negative and depressive thoughts induced by their social isolation from work. To that account, the left panel in Figure 2 shows the situation under average levels of dyad tenure. As evidenced by the red horizontal line, positive leadership behavior does not seem to affect follower vigor of employees who have not increased the amount of working from home due to the pandemic. Only remote workers experience a significant positive association, as evidenced by the blue upward-sloping line (supportive of Hypothesis 2). Notably, the underlying study did not include information about the actual number of days that participants were working from home prior to the pandemic. If participants prior to the pandemic were not working from home at all, the pandemic may have instigated an especially intense adaptation process. The positive events generated by leaders may be particularly advantageous for followers who underwent such an intense adaptation (from 5 days in the office to remote working) and who may be especially susceptible to negative and depressive thoughts induced by their (sudden) social isolation from work. Future research is needed to explore whether empirical evidence of such an effect can be found.

Analyses for Hypothesis 3 indicate that the situation is even more nuanced than was thought on basis of the results found with respect to Hypothesis 2. Figure 2 shows the importance of taking into account the leader-follower relationship tenure (Hypothesis 3). The middle panel reveals that under low leader-follower relationship tenure, the relationship between positive leadership and vigor is equally strong and positive for remote workers and on-site workers. Though, under high leader-follower relationship tenure (right panel in Figure 2), a clear difference becomes visible between remote and on-site workers (upward-sloping blue line vs. downward-sloping red line). This pattern of results can be interpreted as follows. At the early stages of the leader-follower relationship, positive leadership behaviors help increase the vigor of all employees (working remotely or on-site) as evidenced by the middle panel in Figure 2. Followers with long-lasting work relationships with their leader only profit from their leader's positive behaviors when working remotely (right panel in Figure 2, upward-sloping blue line). Apparently, remote workers need confirmation that their performance is up to par and they are fulfilling their leaders' expectations. The positive leadership behaviors (compliments, thanking, cheering up) provide such confirmations for them. On-site workers (with a long dyad-tenure, signified by the downward-sloping red line in the right panel of Figure 2) may have less need for such explicit confirmations as they may pick them up from less explicit gestures and eye-contact with their leader on-site. This reasoning is consistent with social learning theory (Bandura, 1997; Walumbwa et al., 2010), which states that followers often employ observational learning, i.e., followers observe their leaders for behavioral cues about what is expected from them. It is likely that remote workers have only a limited opportunity to observe these cues while working remotely. Explicit positive leadership behaviors fill this need and thereby induce vigor in remote workers with a long relationship tenure. The difference with regard to on-site workers (red upward-sloping line vs. red downward-sloping line in the middle and right panel of Figure 2) can be similarly explained. On-site workers with a long-standing work relationship with their leader (right panel, downward-sloping red line) can more easily evaluate their leaders implicit cues than on-site workers with a short dyad tenure (middle panel, upward-sloping red line), making it easier for them to interpret these implicit cues. The explicit cues provided by positive leadership behaviors may be felt as superfluous and even irritating, thereby depleting their resources (vigor) instead of feeding them. Supporting this notion are studies that have shown that too much of a good thing can be bad (Pierce and Aguinis, 2013; Busse et al., 2016).

6. Practical implications

The current study's findings provide insights and practical guidelines to organizations and their leaders regarding the question as to how employees can be supported to enhance their vigor and energy levels, thereby supporting their wellbeing at work. The study provides evidence showing that positive leadership behaviors are positively related to employee vigor. Such positive leadership behaviors consist of praising followers, individual performance, personally thanking followers, cheering them up, and helping them with specified tasks. All of these leader behaviors are concrete and easy to operationalize in a work-setting. Human resource management departments could organize training sessions for leaders targeted at further developing their positive leadership behaviors.

The development of relationship-building behaviors may also be included in such trainings, as the present study indicated the positive working of leader-follower relationship tenure. Dyad tenure in itself is not easy to influence, but relationship-building skills are expected to positively affect the leader-follower dyadic relationship (Palanski and Yammarino, 2011) and such skills have been shown to be positively related to vigor (Carmeli et al., 2009).

This study's findings show that especially workers who are working remotely (more than before) are benefiting from positive leadership. Organizations could offer their group of remote workers possibilities for engaging with a vitaly coach, who specifically

provides emotional support and fills the gap that potentially is left by a leader. Such interactions focused on coping and increasing personal resources are likely to alleviate stress during remote work and has been found to enhance psychological wellbeing (Kaslow et al., 2020).

7. Limitations

Some limitations need to be acknowledged. Firstly, although transformational leadership behaviors have been shown to conceptually differ from positive leadership behaviors, Kelloway et al. (2013) have suggested that positive leadership may act as a partial substitute for transformational leadership behaviors in cases when transformational leadership behaviors are absent. Future studies may want to include transformational leadership behaviors as well as positive leadership behaviors to explore their joint effect on follower vigor. Relatedly, the data used for this study did not provide information about social relationships of employees next to their work relationship with their leader. It may be the case that some employees experienced a boost (or drop) in their (workplace) vigor because of their social relationships with colleagues or friends and family. Social relationships with others is a relevant construct to consider in future research, as social relationships may also explain part of the variance in employee vigor. Furthermore, while the present study provides evidence of the positive relationship between positive leadership and vigor, this is not to deny that leadership behaviors aimed at increasing followers' vigor could potentially have drawbacks for employees. Leaders who know how to increase their followers' vigor could potentially misuse these abilities and as an effect disengage and frustrate their followers (Nikolova et al., 2021). The present study did not investigate whether positive leadership can also have such negative effects on employees, for example in terms of increasing burnout. Future studies may want to include not only measures of positive work outcomes (vigor, wellbeing), but also negative work outcomes (frustration, disengagement, and burnout) to check for possible downsides of positive leadership.

Secondly, by studying the conditions under which positive leadership is related to follower vigor, it is implicitly assumed that certain leader behaviors are instrumental to follower behavior. Alternative leadership approaches, such as authentic leadership, advocate that leaders influence followers through positive modeling (Adams et al., 2020), which may increase followers' vigor as well. Authentic leaders are self-aware, understand their own strengths and weaknesses, and are able to regulate their behavior to reflect their own norms and values (Avolio and Gardner, 2005; Ilies et al., 2005; Adams et al., 2020). Studies in this line focus on personal qualities and characteristics of leaders (Adams et al., 2020), which may or may not manifest in positive leader behaviors and which, in turn, may or may not be mirrored by followers. In the present study, a more direct approach is chosen that explicitly focuses on how leaders relate to their followers, in terms of praising and thanking them (Kelloway et al., 2013). Future studies may want to investigate trickle-down effects (Masterson, 2001; Wo et al., 2019) and leader-follower interdependence models as a way to gain insight into alternative ways to influence followers' vigor.

Thirdly, with regard to the positive leadership scale, the present study slightly adapted the original phrasing of Kelloway et al. (2013), who asked respondents to reflect on the past 4 months, while in the underlying study, participants were asked to reflect on the past months of work. It would have been preferable to have indicated a specific number of months, although arguably results from a reflection by participants on the past months may not differ much from a reflection on the past 4 months. Nevertheless, future studies are advised to denote a specific number of months while adopting the positive leadership scale.

Finally, this study incorporated multiple waves of data gathering. Consequently, the final sample size is quite limited, which may have affected the power of the analyses and the accuracy of the estimates (Shadish et al., 2002). Nevertheless, a multi-wave study design allows for more rigorous testing of hypotheses than a cross-sectional study design. By having a 7-week time lag between evaluating the dependent and independent variables, the study adheres to Podsakoff et al.'s (2003) recommendations for reducing various method biases through a time-lagged study design. Further studies into positive leadership behaviors and vigor are advised to pursue large multi-wave samples in order to overcome power issues.

These limitations aside, the present study's findings have advanced current understandings about whether and under what conditions positive leadership behaviors are associated with employee psychological energy, i.e., vigor.

Data availability statement

The datasets presented in this article are not readily available because respondents of the survey have not consented to sharing the data. Requests to access the datasets should be directed to MC, marjolein.caniels@ou.nl.

Ethics statement

The studies involving human participants were reviewed and approved by Research Ethics Committee (cETO) of the Open Universiteit (Netherlands). The patients/participants provided their written informed consent to participate in this study.

Author contributions

MC gathered the data, performed the analyses, and wrote the paper.

Acknowledgments

The author thanks students of the Open Universiteit for their support in finding respondents for this study.

Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated

organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

References

Aczel, B., Kovacs, M., van der Lippe, T., and Szaszi, B. (2021). Researchers working from home: benefits and challenges. *PLoS One* 16, e0249127–e0249113. doi: 10.1371/journal.pone.0249127

Adams, B. G., Meyers, M. C., and Sekaja, L. (2020). Positive leadership: relationships with employee inclusion, discrimination, and well-being. *Appl. Psychol.* 69, 1145–1173. doi: 10.1111/apps.12230

Aiken, L. S., West, S. G., and Reno, R. R. (1991). *Multiple regression: Testing and interpreting interactions*. New York: Sage.

Avolio, B. J. (1999). *Full leadership development*. London, U.K.: Sage.

Avolio, B. J., and Gardner, W. L. (2005). Authentic leadership development: getting to the root of positive forms of leadership. *Leadersh. Q.* 16, 315–338. doi: 10.1016/j.leaqua.2005.03.001

Bakker, A. B., Demerouti, E., and Schaufeli, W. B. (2005). The crossover of burnout and work engagement among working couples. *Hum. Relat.* 58, 661–689. doi: 10.1177/0018726705055967

Bakker, A. B., Schaufeli, W. B., Leiter, M. P., and Taris, T. W. (2008). Work engagement: an emerging concept in occupational health psychology. *Work Stress* 22, 187–200. doi: 10.1080/02678370802393649

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W H Freeman/Times Books/Henry Holt & Co.

Bass, B. M. (2005). *Transformational leadership* (*2nd*) Edn Philadelphia: Lawrence Erlbaum Associates.

Becker, T. E. (2005). Potential problems in statistical control of variables in organizational research. *Organ. Res. Methods* 8, 274–289. doi: 10.1177/1094428105278021

Bernerth, J. B., and Aguinis, H. (2016). A. Critical review and best-practice recommendations for control variable usage. *Pers. Psychol.* 69, 229–283. doi: 10.1111/peps.12103

Boell, S. K., Cecez-Kecmanovic, D., and Campbell, J. (2016). Telework paradoxes and practices: the importance of the nature of work. *N. Technol. Work. Employ.* 31, 114–131. doi: 10.1111/ntwe.12063

Brislin, R. (1986). "The wording and translation of research instruments" in *Field methods in cross-cultural research: Cross-cultural research and methodology series*. eds. W. Lonner and J. Berry (Thousand Oaks, CA: Sage Publications), 137–164.

Burger, M., Stoffers, J., Coun, M. J. H., Van den Heuvel, S., Van Waeyenberg, T., and Vanderstukken, A. (2022). Positive leadership and worker well-being in dynamic regional contexts. *Front. Psychol.*

Busse, C., Mahlendorf, M. D., and Bode, C. (2016). The ABC for studying the too-much-of-a-good-thing effect: A competitive mediation framework linking antecedents, benefits, and costs. *Organ. Res. Methods* 19, 131–153. doi: 10.1177/1094428115579699

Cameron, K., and Plews, E. (2012). Positive leadership in action. *Organ. Dyn.* 41, 99–105. doi: 10.1016/j.orgdyn.2012.01.003

Carmeli, A., Ben-Hador, B., Waldman, D. A., and Rupp, D. E. (2009). How leaders cultivate social capital and nurture employee vigor: implications for job performance. *J. Appl. Psychol.* 94, 1553–1561. doi: 10.1037/a0016429

Cooper, C. L., Dewe, P., and O'Driscoll, M. P. (2001). *Organizational stress: A review and critique of theory, research, and applications. Foundations for organizational science*. Thousand Oaks, CA: Sage.

Coun, M. J. H. (2021). *New ways of working: Empowering HRM practices and the missing link of leadership. Doctoral thesis*. Heerlen: Open Universiteit

Cui, M., Fincham, F. D., and Pasley, B. K. (2008). Young adult romantic relationships: the role of parents' marital problems and relationship efficacy. *Pers. Soc. Psychol. Bull.* 34, 1226–1235. doi: 10.1177/0146167208319693

Dienesch, R. M., and Liden, R. C. (1986). Leader-member exchange model of leadership: a critique and further development. *Acad. Manage. Rev.* 11, 618–634. doi: 10.5465/amr.1986.4306242

Foss, N. J. (2021). The impact of the Covid-19 pandemic on firms' organizational designs. *J. Manag. Stud.* 58, 270–274. doi: 10.1111/joms.12643

Fredrickson, B. L. (1998). What good are positive emotions? *Rev. Gen. Psychol.* 2, 300–319. doi: 10.1037/1089-2680.2.3.300

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: the broaden-and-build theory of positive emotions. *Am. Psychol.* 56, 218–226. doi: 10.1037/0003-066X.56.3.218

Fritz, C., Lam, C. F., and Spreitzer, G. M. (2011). It's the little things that matter: an examination of knowledge workers' energy management. *Acad. Manag. Perspect.* 25, 28–39. doi: 10.5465/amp.25.3.zol28

Gelman, A. (2008). Scaling regression inputs by dividing by two standard deviations. *Stat. Med.* 27, 2865–2873. doi: 10.1002/sim.3107

Gilbreath, B., and Benson, P. G. (2004). The contribution of supervisor behaviour to employee psychological well-being. *Work Stress* 18, 255–266. doi: 10.1080/02678370412331317499

Guarana, C. L., and Barnes, C. M. (2017). Lack of sleep and the development of leader-follower relationships over time. *Organ. Behav. Hum. Decis. Process.* 141, 57–73. doi: 10.1016/j.obhdp.2017.04.003

Hair, J., Hollingsworth, C. L., Randolph, A. B., and Chong, A. Y. L. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Ind. Manag. Data Syst.* 117, 442–458. doi: 10.1108/IMDS-04-2016-0130

Halbesleben, J. R. B. (2010). "A meta-analysis of work engagement: relationships with burnout, demands, resources, and consequences" in *Work engagement: A handbook of essential theory and research*. eds. A. B. Bakker and M. P. Leiter (New York, NY: Psychology Press), 102–117.

Hannah, S. T., Woolfolk, R. L., and Lord, R. G. (2009). Leader self-structure: a framework for positive leadership. *J. Organ. Behav.* 30, 269–290. doi: 10.1002/job.586

Hayes, A. F. (2021). PROCESS for R version 4.0.1. [Computer software]

Ilies, R., Morgeson, F. P., and Nahrgang, J. D. (2005). Authentic leadership and eudaemonic well-being: understanding leader–follower outcomes. *Leadersh. Q.* 16, 373–394. doi: 10.1016/j.leaqua.2005.03.002

Ipsen, C., van Veldhoven, M., Kirchner, K., and Hansen, J. P. (2021). Six key advantages and disadvantages of working from home in Europe during COVID-19. *Int. J. Environ. Res. Public Health* 18:1826. doi: 10.3390/ijerph18041826

Kaslow, N. J., Friis-Healy, E. A., Cattie, J. E., Cook, S. C., Crowell, A. L., Cullum, K. A., et al. (2020). Flattening the emotional distress curve: a behavioral health pandemic response strategy for COVID-19. *Am. Psychol.* 75, 875–886. doi: 10.1037/amp0000694

Kelloway, E. K., Turner, N., Barling, J., and Loughlin, C. (2012). Transformational leadership and employee psychological well-being. *Work Stress* 26, 39–55. doi: 10.1080/02678373.2012.660774

Kelloway, E. K., Weigand, H., McKee, M. C., and Das, H. (2013). Positive leadership and employee well-being. *J. Leadersh. Organ. Stud.* 20, 107–117. doi: 10.1177/1548051812465892

Kniffin, K. M., Narayanan, J., Anseel, F., Antonakis, J., Ashford, S. P., Bakker, A. B., et al. (2021). COVID-19 and the workplace: implications, issues, and insights for future research and action. *Am. Psychol.* 76, 63–77. doi: 10.1037/amp0000716

Lilius, J. M., Worline, M. C., Maitlis, S., Kanov, J., Dutton, J. E., and Frost, P. (2008). The contours and consequences of compassion at work. *J. Organ. Behav.* 29, 193–218. doi: 10.1002/job.508

Luthans, F. (2002). The need and meaning of positive organizational behavior. *J. Organ. Behav.* 23, 695–706. doi: 10.1002/job.165

Marshall, G. W., Michaels, C. E., and Mulki, J. P. (2007). Workplace isolation: exploring the construct and its measurement. *Psychol. Mark.* 24, 195–223. doi: 10.1002/mar.20158

Masterson, S. S. (2001). A trickle-down model of organizational justice: relating employees' and customers' perceptions of and reactions to fairness. *J. Appl. Psychol.* 86, 594–604. doi: 10.1037/0021-9010.86.4.594

McDonald, R. P. (1999). *Test theory: A unified treatment*. Mahwah, NJ: Erlbaum

Mckinsey, A. (2021). The future of work after COVID-19. Available at: https://www.mckinsey.com/featured-insights/future-of-work/the-future-of-work-after-covid-19

Muzio, D., and Doh, J. (2021). COVID-19 and the future of management studies. Insights from leading scholars. *J. Manag. Stud.* 58, 1371–1377. doi: 10.1111/joms.12689

Nerstad, C. G. L., Caniëls, M. C. J., Roberts, G. C., and Richardsen, A. M. (2020). Perceived motivational climates and employee energy: the mediating role of basic psychological needs. *Front. Psychol.* 11:1509. doi: 10.3389/fpsyg.2020.01509

Nikolova, I., Caniëls, M. C. J., Schaufeli, W., and Semeijn, J. H. (2021). Disengaging leadership scale (DLS): evidence of initial validity. *Int. J. Environ. Res. Public Health* 18:2824. doi: 10.3390/ijerph18062824

Palanski, M. E., and Yammarino, F. J. (2011). Impact of behavioral integrity on follower job performance: AThree-study examination. *Leadersh. Q.* 22, 765–786. doi: 10.1016/j.leaqua.2011.05.014

Pierce, J. R., and Aguinis, H. (2013). The too-much-of-a-good-thing effect in management. *J. Manag.* 39, 313–338. doi: 10.1177/0149206311410060

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., and Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *J. Appl. Psychol.* 88, 879–903. doi: 10.1037/0021-9010.88.5.879

R Core Team. (2021). R: A language and environment for statistical computing. (version 4.0) [computer software]. Available at: https://cran.r-project.org. (R packages retrieved from MRAN snapshot 2021-04-01).

Rosseel, Y. (2012). Lavaan: an R package for structural equation modeling. *J. Stat. Softw.* 48, 1–36. doi: 10.18637/jss.v048.i02

Schaufeli, W. B., and Bakker, A. B. (2004a). Job demands, job resources, and their relationship with burnout and engagement: a multi-sample study. *J. Organ. Behav.* 25, 293–315. doi: 10.1002/job.248

Schaufeli, W. B., and Bakker, A. B. (2004b). UWES-Utrecht work engagement scale: Test manual. Utrecht University, Department of Psychology. Available at: http://www.schaufeli.com.

Schaufeli, W. B., Bakker, A. B., and Salanova, M. (2006). The measurement of work engagement with a short questionnaire. *Educ. Psychol. Meas.* 66, 701–716. doi: 10.1177/0013164405282471

Schaufeli, W. B., and Salanova, M. (2007). "Work engagement: an emerging psychological concept and its implications for organizations" in *Research in social issues in management (volume 5)*. eds. S. W. Gilliand, D. D. Steiner and D. P. Skarlicki (Greenwich, CT: Information Age Publishers), 135–177.

Seligman, M. E. P., and Csikszentmihalyi, M. (2000). Positive psychology: an introduction. *Am. Psychol.* 55, 5–14. doi: 10.1037/0003-066X.55.1.5

Seppälä, P., Mauno, S., Feldt, T., Hakanen, J., Kinnunen, U., Tolvanen, A., et al. (2009). The construct validity of the Utrecht work engagement scale: multisample and longitudinal evidence. *J. Happiness Stud.* 10, 459–481. doi: 10.1007/s10902-008-9100-y

Shadish, W. R., Cook, T. D., and Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston, MA: Houghton Mifflin Company.

Shirom, A. (2010). "Feeling energetic at work: On vigor's antecedents" in *Work engagement: A handbook of essential theory and research*. eds. A. B. Bakker and M. P. Leiter (East Sussex: Psychology Press), 69–84.

Shirom, A. (2011). Vigor as a positive affect at work: conceptualizing vigor, its relations with related constructs, and its antecedents and consequences. *Rev. Gen. Psychol.* 15, 50–64. doi: 10.1037/a0021853

Shirom, A., Toker, S., Berliner, S., Shapira, I., and Melamed, S. (2008). The effects of physical fitness and feeling vigorous and self-rated health. *Health Psychol.* 27, 567–575. doi: 10.1037/0278-6133.27.5.567

Sinclair, R. R., Allen, T., Barber, L., Bergman, M., Britt, T., Butler, A., et al. (2020). Occupational health science in the time of COVID-19: now more than ever. *Occup. Health Sci.* 4, 1–22. doi: 10.1007/s41542-020-00064-3

Spicer, A. (2020). Organizational culture and COVID-19. *J. Manag. Stud.* 57, 1737–1740. doi: 10.1111/joms.12625

Tabachnick, B. G., and Fidell, L. S. (2001). *Using multivariate statistics*, *4th* Edn. Needham Heights, MA: Allyn & Bacon.

The Jamovi project (2022). Jamovi (Version 2.3) [Computer Software]. Retrieved from https://www.jamovi.org

Tremblay, D. G., and Thomsin, L. (2012). Telework and mobile working: analysis of its benefits and drawbacks. *Int. J. Work Innov.* 1, 100–113. doi: 10.1504/IJWI.2012.047995

Tummers, L. G., and Bakker, A. B. (2021). Leadership and job demands-resources theory: a systematic review. *Front. Psychol.* 12:722080. doi: 10.3389/fpsyg.2021.722080

Van Dierendonck, D., Stam, D., Boersma, P., de Windt, N., and Alkema, J. (2014). Same difference? Exploring the differential mechanisms linking servant leadership and transformational leadership to follower outcomes. *Leadersh. Q.* 25, 544–562. doi: 10.1016/j.leaqua.2013.11.014

Van Zoonen, W., and Sivunen, A. E. (2022). The impact of remote work and mediated communication frequency on isolation and psychological distress. *Eur. J. Work Organ. Psy.* 31, 610–621. doi: 10.1080/1359432X.2021.2002299

Vasey, M. W., Harbaugh, C. N., Fisher, L. B., Heath, J. H., Hayes, A. F., and Bijttebier, P. (2014). Temperament synergies in risk for and protection against depressive symptoms: a prospective replication of a three-way interaction. *J. Res. Pers.* 53, 134–147. doi: 10.1016/j.jrp.2014.09.005

Vasquez, C. A., Madrid, H. P., and Niven, K. (2021). Leader interpersonal emotion regulation motives, group leader–member exchange, and leader effectiveness in work groups. *J. Organ. Behav.* 42, 1168–1185. doi: 10.1002/job.2557

Walumbwa, F. O., Wang, P., Wang, H., Schaubroeck, J., and Avolio, B. J. (2010). Psychological processes linking authentic leadership to follower behaviors. *Leadersh. Q.* 21, 901–914. doi: 10.1016/j.leaqua.2010.07.015

Weiss, H. M., and Cropanzano, R. (1996). "Affective events theory: a theoretical discussion of the structure, causes, and consequences of affective experiences at work" in *Research in organizational behavior*. eds. B. M. Staw and L. L. Cummings, vol. *18* (New York: Elsevier Science), 1–74.

Wo, D. X. H., Schminke, M., and Ambrose, M. L. (2019). Trickle-down, trickle-out, trickle-up, trickle-in, and trickle-around effects: an integrative perspective on indirect social influence phenomena. *J. Manag.* 45, 2263–2292. doi: 10.1177/0149206318812951

Wright, T. A. (2003). Positive organizational behavior: an idea whose time has truly come. *J. Organ. Psychol.* 24, 437–442. doi: 10.1002/job.197

Youssef-Morgan, C. M., and Luthans, F. (2013). Positive leadership: meaning and application across cultures. *Organ. Dyn.* 42, 198–208. doi: 10.1016/j.orgdyn.2013.06.005

frontiers | Frontiers in Psychology

TYPE Original Research
PUBLISHED 17 March 2023
DOI 10.3389/fpsyg.2023.1095968

OPEN ACCESS

EDITED BY
Steven Van Den Heuvel,
Evangelical Theological Faculty, Belgium

REVIEWED BY
Charlie Falguera,
University of the Philippines Manila, Philippines
Francisco Manuel Morales Rodríguez,
University of Granada, Spain

*CORRESPONDENCE
Petru Lucian Curşeu
✉ petru.curseu@ou.nl

SPECIALTY SECTION
This article was submitted to Positive Psychology, a section of the journal Frontiers in Psychology

RECEIVED 11 November 2022
ACCEPTED 20 February 2023
PUBLISHED 17 March 2023

CITATION
Cremers EE and Curşeu PL (2023) Empowering leadership during the COVID-19 outbreak: Implications for work satisfaction and effectiveness in organizational teams. *Front. Psychol.* 14:1095968. doi: 10.3389/fpsyg.2023.1095968

Empowering leadership during the COVID-19 outbreak: Implications for work satisfaction and effectiveness in organizational teams

Erik Eduard Cremers[1] and Petru Lucian Curşeu[1,2]*

[1]Department of Organization, Open Universiteit, Heerlen, Netherlands, [2]Department of Psychology, Babeş-Bolyai University, Cluj-Napoca, Romania

The COVID-19 pandemic generated unprecedented challenges for social and organizational life. We set out to explore how empowering leadership and leadership support were affected as a result of the team-based organization starting to implement flexible and remote work practices after the outbreak of the COVID-19 pandemic. We collected data in a cross-lagged design and used the two-condition MEMORE mediation procedure to analyze data on work satisfaction and team effectiveness obtained just before and immediately after the COVID-19 outbreak in 34 organizational teams. Our results show that the COVID-19 outbreak did not significantly impact perceptions of empowering leadership or perceived leadership support. However, teams that experienced changes in empowering leadership also reported proportional changes in work satisfaction and effectiveness. Finally, we show that the association between empowering leadership and leadership support, on the one hand, and work satisfaction in teams, on the other hand, is moderated by team size, such that the strength of the association is higher in small rather than large organizational teams. We conclude by arguing that the team-based organization absorbed well the impact and disruptions associated with the COVID-19 outbreak. We also stress the role of empowering leadership as a driver of work satisfaction and the effectiveness of organizational teams.

KEYWORDS

empowering leadership, team effectiveness, work satisfaction, leadership support, COVID-19, resilience

1. Introduction

As the COVID-19 outbreak spread across the world, many organizations had to implement flexible and remote work practices almost instantly and on a large scale. In this respect, the pandemic imposed increased pressure on employees working in organizations and teams, suddenly having to work at home full-time (Pluut and Wonders, 2020). This generated multiple challenges in terms of integrating family and work life in the home domain (Nikolova et al., 2021; Ratiu et al., 2022), yet also raised relational challenges for the way organizational teams planned and coordinated their actions (Contreras et al., 2020; Blanchard, 2021; Karl et al., 2022).

In a similar vein, leaders and managers were suddenly confronted with the challenge of leading from a distance in this new setting and attempting to fulfill leadership functions *via* online communication tools (Contreras et al., 2020; Chamakiotis et al., 2021; Coun et al., 2021). Both leaders and followers had to adapt to the new relational context, which created challenges for the quality of social exchanges and the provision of social support. On the one hand, followers needed more than ever support from their leaders and empowerment to adapt to the new working conditions, while, on the other hand, leaders often struggled to find effective ways to fulfill their roles.

We set out to explore how changes in the empowering leadership behaviors and leadership support triggered by the flexible and remote working during the COVID-19 outbreak affected work satisfaction and the effectiveness of organizational teams. Empowering leadership in teams involves delegating authority to and sharing power with the team members, stimulating participation in decision–making, offering support, and fostering autonomy in making decisions and performing tasks (Lee et al., 2018; Wang, 2022). Leadership support is a form of social support that includes instrumental (provision of advice and assistance in task accomplishment) and emotional (in terms of resolving conflicts at work or dealing with work strain) help that leaders offer to their followers (Contreras et al., 2020; Tummers and Bakker, 2021; Muntean et al., 2022). Research to date has not directly explored at the team level how changes in empowering leadership and leadership support due to the COVID-19 outbreak impact these team outcomes. We fill in this gap by using the results of a survey aimed at evaluating team dynamics in a large organization, to test the changes induced by the COVID-19 outbreak on perceived empowering leadership and supportive behaviors and indirectly on work satisfaction and effectiveness in teams. In this way, our article presents one of the first empirical attempts to directly test the influence of the COVID-19 outbreak and remote working prescriptions on the interplay between leadership behaviors, leadership support, and team outcomes.

2. Theoretical framework and hypotheses

With the COVID-19 outbreak, many organizations had to implement flexible and remote work practices almost instantly and on a large scale. This sudden change raised challenges not only for the organization as a whole but also for teams (Blanchard, 2021; Garro-Abarca et al., 2021) and individuals (Ratiu et al., 2022). At an individual level, beyond the ruminations related to the COVID-19 threat to personal wellbeing (Nikolova et al., 2021), employees quickly had to cope with combining work and private life in a full-time at-home setting, triggering pressures for employees and families (Pluut and Wonders, 2020). Work satisfaction refers to a set of evaluative cognitions related to the work environment that reflect a positive (cognitive) outlook toward the job and predominantly positive emotions experienced at work by employees (Horoub and Zargar, 2022). At the individual level, work satisfaction is one of the key indicators of wellbeing at work, as driven by empowering and participative leadership (Tummers and Bakker, 2021; Wang et al., 2022). Overall, teams were challenged to quickly adapt and find ways of effectively working together, now fully online. Team effectiveness is a multidimensional construct that captures the outcomes of team functioning in terms of productivity and viability (Mathieu et al., 2008), and these dimensions were certainly impacted by the change in work practices triggered by the COVID-19 pandemic (Edelmann et al., 2020; Blanchard, 2021; Garro-Abarca et al., 2021). Certainly, technology played a huge part in facilitating work and coping with the pandemic outbreak, but work practices, communication, and collaboration also had to be adapted to the new conditions (Blanchard, 2021). With such changes, team effectiveness and individual work satisfaction were also severely challenged and threatened. Considering the scale and immediacy of the global pandemic, we expect the COVID-19 crisis and its challenges for work settings to decrease work satisfaction and team effectiveness. Therefore, we hypothesize that,

> *Hypothesis 1: The outbreak of the COVID-19 pandemic decreased work satisfaction in organizational teams.*
> *Hypothesis 2: Remote working established during the outbreak of the COVID-19 pandemic decreased team effectiveness.*

Modern organizations increasingly rely on teams and multiteam systems to perform effectively and stimulate autonomous work (Meslec et al., 2023), and they tend to change their leadership approaches from hierarchical forms to more participative and empowering ones. Leadership support is a key antecedent for the effectiveness of organizational teams as it impacts job crafting and is a key job resource for employees (Cortellazzo et al., 2019; Fodor et al., 2021; Tummers and Bakker, 2021). In particular, empowering leadership and leadership support are job resources that ultimately translate into employee satisfaction and team effectiveness (Tummers and Bakker, 2021; Wang et al., 2022). Empowering leadership focuses on distributing power to employees and creating conditions for autonomous work with the goal of increasing motivation and effectiveness at work (Lee et al., 2018; Horoub and Zargar, 2022). Organizations and teams using empowering initiatives perform better than those relying on more traditional hierarchical structures, indicating an important need for empowering leadership in modern work settings, especially when using teams (Sharma and Kirkman, 2015). Meta-analytic evidence shows that empowering leadership is beneficial for work performance and creativity at the individual level as well as at the team level of analysis (Lee et al., 2018). Empowering leadership also influences employee attitudes and fosters job satisfaction (Sharma and Kirkman, 2015; Horoub and Zargar, 2022). Furthermore, empowering leadership has been identified as a dominant modern perspective in team leadership and one of the key antecedents of team effectiveness (van Knippenberg et al., 2021), as it drives team meaningfulness (Lisak et al., 2022) and constructive deviance (Wang, 2022). Furthermore, the meta-analytic study by Lee et al. (2018) showed that the beneficial effects of empowering leadership are channeled through psychological empowerment, trust in the leader, and the quality of leader-member interactions and exchanges.

As the COVID-19 outbreak also generated challenges for leaders and managers in modern workplaces and their empowering leadership (Lisak et al., 2022; Wang, 2022; Wang et al., 2022), we expect that changes in empowering leadership practices during COVID-19 indirectly impacted team effectiveness and

work satisfaction. A recent study that explored the relationship between empowering leadership and innovative work behaviors of employees after the COVID-19 outbreak showed that work-related flow mediated the association between empowering leadership and innovative work behavior (Coun et al., 2021). However, this study did not directly evaluate changes in empowering leadership practices triggered by the COVID-19 outbreak. As we stated before, we expect that empowering leadership practices will become less effective as interactions become mediated by virtual communication. Furthermore, we believe that the flexible and online work generated challenges in providing much-needed leadership support and ultimately reduced the satisfaction and effectiveness of organizational teams. To summarize, we expect that the possible detrimental effects of online work on work satisfaction and effectiveness in teams can be explained by the reduced quality of interactions with the leaders, diminishing leadership support, and the likely effectiveness of empowering leadership practices.

Hypothesis 3: Change in empowering leadership and leadership support during the COVID-19 outbreak explain decreased work satisfaction in organizational teams.
Hypothesis 4: Change in empowering leadership and leadership support during the COVID-19 outbreak explain decreased team effectiveness.

The shift from face-to-face meetings, including spontaneous unplanned ones to online pre-planned meetings during the outbreak of the COVID-19 pandemic generated important challenges for the development of team processes, mutual social support, cohesion, and entitativity of organizational teams (Blanchard, 2021). During the pandemic, team members lost the benefits of the spontaneous meetings and the social support they received at work, with a possible pervasive impact on work satisfaction in teams. Furthermore, the entitativity (the shared perception that the team is a unitary social entity) of teams was negatively affected by the transition to online interactions, with potential detrimental effects on work satisfaction (Blanchard, 2021). Given these arguments, we expect that smaller teams are more effective at rallying their relational resources to cope better with the diminishing social support and the dilution of entitativity generated by the transition to online working, while larger teams may experience difficulties in preserving their relational synergy. We have argued that COVID-19 and the transition to online working imposed constraints on empowering teams and we expect that the benefits of empowering leadership for work satisfaction in teams are preserved in small rather than in large teams. We expect that small teams will be more effective in coping with such a decrease in empowering leadership, as in small teams, members are more likely to effectively provide social support and maintain wellbeing at work in the team as compared to members in large teams.

Previous research already showed that team size influences the relationship between group performance and team leadership. One of the theoretical explanations for the differential effects of leadership depending on team size is the Social Impact Theory (Latané, 1981). Latané's psychosocial principle of "division of impact" predicts the dilution of leaders' social influence with the number of targets, that is, the members of the team. Furthermore, O'Connell et al. (2002) put forward a "contextualist" perspective of leadership, according to which leadership effectiveness is influenced by contextual factors such as team design and size. To summarize, these two explanations rely on the division and diffusion of leadership impact as the group size increases. In their discussion of differences between larger and smaller teams on technical tasks and creative tasks, Karriker et al. (2017) argued that the logistics of small teams are easier to manage. They also add that the relationship between smaller teams and improved goal attainment can be explained in light of the higher frequency of communication that occurs in these smaller teams. This increased communication frequency can reduce group conflict and support higher levels of shared understanding of the end goal (Karriker et al., 2017).

Smaller teams also develop more effective coordination processes, as it is easier for a few rather than many members to effectively synchronize their actions in a synergetic manner (Curşeu et al., 2017). Furthermore, the transition to online meetings generated important constraints in planning and organizing team meetings (Blanchard, 2021), yet such challenges are expected to be less impactful in smaller teams than in larger teams. We argued that change in empowering leadership triggers proportional changes in team effectiveness, and in line with the above arguments, we argue that team size moderates this association such that smaller teams are better able to cope with the process losses associated with the transition to online meetings after the COVID-19 outbreak. Therefore, we hypothesize that,

Hypothesis 5: Team size attenuates the association between change in empowering leadership and leadership support due to the COVID-19 outbreak on the one hand and change in work satisfaction in organizational teams on the other hand.
Hypothesis 6: Team size attenuates the association between change in empowering leadership and leadership support due to the COVID-19 outbreak on the one hand and change in team effectiveness on the other hand.

3. Methods

3.1. Sample and procedure

Our study is based on a cross-lagged design and was conducted in a large organization that initiated a team-based reorganization of work and the implementation of multiteam systems in 2019, with the initial aim to survey the changes triggered by this reorganization. The first wave of data collection among 34 organizational teams took place in January 2020 in a face-to-face, on-premise work setting. The second wave of data collection took place after the COVID-19 outbreak in June 2020 in a fully online work setting. This study is based on the differences observed for these 34 teams during these two data collection moments.

Participants were asked to fill in a survey evaluating different aspects of teamwork and work satisfaction, while team leaders were asked to evaluate team effectiveness on three main dimensions, namely, performance, innovation, and ownership. A total of 177 members (32 women) with an average age of 45.87 years filled in

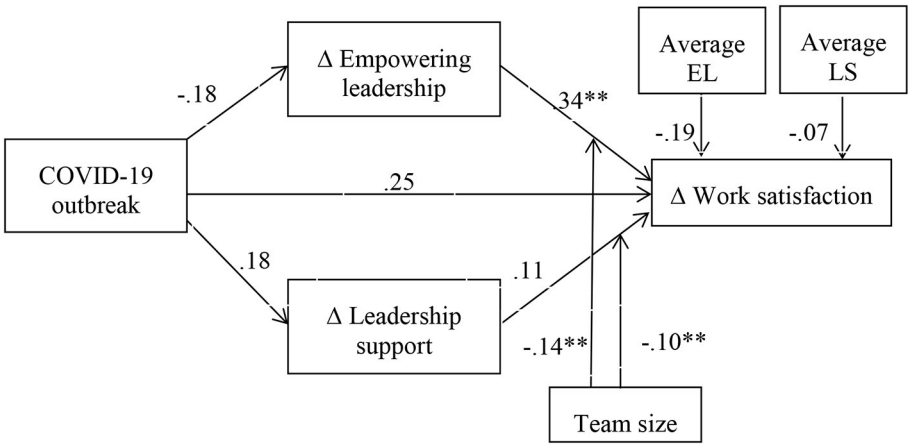


FIGURE 1
The overall moderated mediation results for change in work satisfaction as a function of change in empowering leadership and leadership support after the COVID-19 outbreak. $^{**}p < 0.01$; EL, empowering leadership; LS, leadership support; Δempowering leadership, empowering leadership before COVID-19 minus empowering leadership after the COVID-19 outbreak (change in empowering leadership due to COVID-19); Δleadership support, leadership support before the COVID-19 outbreak minus leadership support after the COVID-19 outbreak (change in leadership support due to COVID-19); Δwork satisfaction, work satisfaction before the COVID-19 outbreak minus work satisfaction after the COVID-19 outbreak (change in wellbeing due to COVID-19).

the survey during the first wave, and 125 participants (22 women) with an average age of 48.22 years filled in the survey during the second wave. Participation was voluntary and anonymous, and participants could withdraw from the study at any moment if they wished so. As the study documented the implications of team-based reorganization, all employees who were organized in teams across the different value streams in scope were invited to fill in the survey. Data on work satisfaction, empowering leadership, and leadership support were collected from the team members, while data on team effectiveness was collected from the team leaders (consisting of several value stream and team orchestrating roles that could independently evaluate team effectiveness). The scores obtained from team members were aggregated to obtain a team-level score, which we have used for further analyses of the teams for which we had evaluations at both time points. Team size was extracted from the company records. In short, we collected data from multiple sources for the variables included in the model, and all analyses were conducted at the group level.

3.2. Measures

Work satisfaction was evaluated by asking team members to answer two items: "All things considered, how satisfied are you with your work in general" (1–7) and "How happy are you feeling in your job in general" (0–10). Cronbach's alpha for this scale was 0.77 at time 1 and 0.78 at time 2. Given the fact that the items were evaluated using different Likert scales, we have used the dominant Bartlett factor score as an accurate indicator of the underlying work satisfaction component rated with the two items (DiStefano et al., 2009).

Team effectiveness was evaluated by asking team leaders to rate from 1 to 5 the *performance, innovativeness*, and *ownership* of each participating team. As the three items refer to different facets of team effectiveness, we have computed the omega reliability index based on factor analysis (Hayes and Coutts, 2020). At time 1, omega was 0.49, with the innovation item loading the least in the dominant factor score, while at time 2, omega was 0.72, with all items loading positively in the dominant factor score. For further analyses, we will use the Bartlett dominant factor score as an accurate index of team effectiveness, considered an underlying factor evaluated by the three ratings provided by the team leaders (DiStefano et al., 2009).

Empowering leadership was evaluated by team members with a single behaviorally anchored rating item, asking the participants to rate the leadership style of their leaders in and around the team on a continuum ranging from very restrictive (1 = provides specific guidelines that limit your choice of action) to empowering leadership (7 = gives autonomy and space to decide on how to perform your work). Therefore, a high score reflects empowering leadership.

Leadership support was evaluated with two items that capture instrumental and emotional support, presented in the study by Muntean et al. (2022), by asking team members to answer the extent to which they receive task-related and relational support from their leaders. The two items were "When I encounter problems around my tasks at work, I get the most help and directions from my manager(s)" and "When I experience relational problems at work, I get the most support from my manager(s)" (answers were recorded on a five-point Likert scale, from 1 = never to 5 = a lot). Cronbach's alpha for this scale was 0.68 for time 1 and 0.78 for time 2. We have further used the Bartlett dominant factor score for the analyses as an accurate indicator of the underlying factor evaluated by these two items (DiStefano et al., 2009).

Team size was evaluated by collecting data from the company records on the total number of members in each organizational team.

4. Results

Our design included two-time measurements, one just before the COVID-19 outbreak and one just after the outbreak, and the introduction of work at home in the organization. Given that we

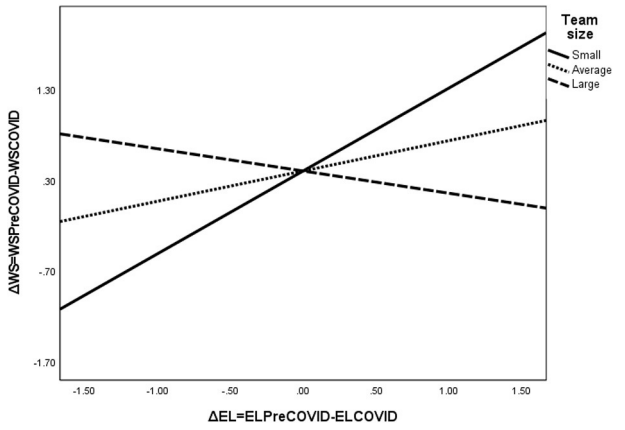


FIGURE 2
The interaction effect between changes in empowering leadership and team size on work satisfaction. ΔEL, change in empowering leadership due to COVID-19; ΔWS, change in work satisfaction due to COVID-19; ELPreCOVID, empowering leadership before the COVID-19 pandemic; ELCOVID, empowering leadership during the initial stages of the COVID-19 pandemic; WSPreCOVID, work satisfaction before the COVID-19 pandemic; WSCOVID, work satisfaction during the initial stages of the COVID-19 pandemic.

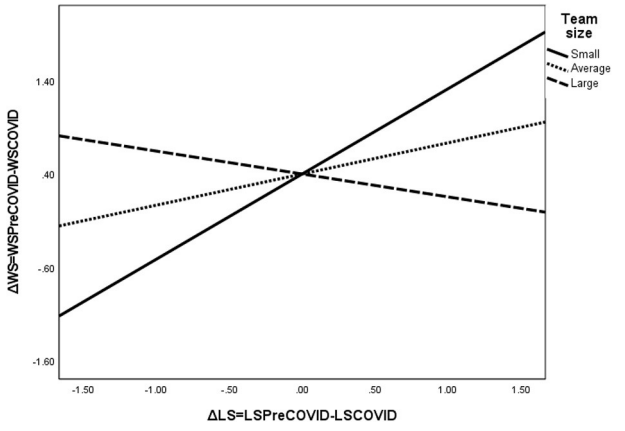


FIGURE 3
The interaction effect between change in leadership support and the team size on work satisfaction. ΔLS, change in leadership support due to COVID-19; ΔWS, change in work satisfaction due to COVID-19; LSPreCOVID, leadership support before the COVID-19 pandemic; LSCOVID, leadership support during the initial stages of the COVID-19 pandemic; WSPreCOVID, work satisfaction before the COVID-19 pandemic; WSCOVID, work satisfaction during the initial stages of the COVID-19 pandemic.

have this major event that occurred between the two waves of data collection, we will use the procedure to test mediation in designs with repeated measures as described in Montoya and Hayes (2017). This procedure allows the test of complex mediation and moderated mediation models in which the change in the dependent variable associated with an external event (the COVID-19 outbreak in our case) can be explained by the change in a mediating variable triggered by or associated with the same event (Montoya and Hayes, 2017; Montoya, 2019). Therefore, we modeled empowering leadership and leadership support as mediators and estimated the extent to which these scores changed at the team level after the COVID-19 outbreak. We also modeled work satisfaction and team effectiveness as dependent variables by estimating the change in these variables triggered by the same external event. We then used the MEMORE 3.0 macro for SPSS version 28 (Montoya, 2022) to analyze the data, using Model 16 that includes the moderating role of team size. The results of the overall moderated mediation analyses are presented in Figure 1 for work satisfaction and Figure 4 for team effectiveness.

The results of the repeated measures mediation analysis reveal that the COVID-19 outbreak did not significantly reduce work satisfaction (effect size = 0.25; SE = 0.16, $CI_{low} = -0.07$; $CI_{high} = 0.58$) or team effectiveness (effect size = 0.26; SE = 0.16, $CI_{low} = -0.05$; $CI_{high} = 0.58$); therefore, hypotheses 1 and 2 were not supported by the data. Furthermore, the results also reveal that the COVID-19 outbreak did not significantly decrease teams' perceptions of empowering leadership (effect size = −0.18; SE = 0.20, $CI_{low} = -0.60$; $CI_{high} = 0.24$) or leadership support (effect size = 0.18; SE = 0.16, $CI_{low} = -0.15$; $CI_{high} = 0.50$). We can therefore conclude that the detrimental effects expected due to the COVID-19 outbreak did not emerge as hypothesized.

Furthermore, our results revealed a positive and significant effect of change in empowering leadership on change in work satisfaction (effect size = 0.34; SE = 0.11, $CI_{low} = 0.10$; $CI_{high} = 0.56$). This direct effect reveals that when empowering leadership increases, so does the work satisfaction reported in the teams. In other words, even though the COVID-19 outbreak did not have a systematic effect on change in empowering leadership, the teams that experienced such a change (due to other factors and circumstances) also reported a proportional change in work satisfaction.

Furthermore, our results reveal significant interaction effects between change in empowering leadership and team size (effect size = −0.14; SE = 0.05, $CI_{low} = -0.24$; $CI_{high} = -0.04$), as well as between leadership support and team size (effect size = −0.10; SE = 0.03, $CI_{low} = -0.16$; $CI_{high} = -0.04$). The significant interaction effect between change in empowering leadership and team size reveals that the effect of empowering leadership change is positive and significant for small (effect size = 0.91, SE = 0.23, $p = 0.0004$, $CI_{low} = 0.45$; $CI_{high} = 1.38$) and medium-sized teams (effect size = 0.33, SE = 0.11, $p = 0.0005$, $CI_{low} = 0.11$; $CI_{high} = 0.56$), while the effect is negative but not significant for larger teams (effect size = −0.24, SE = 0.22, $p = 0.27$, $CI_{low} = -0.69$; $CI_{high} = 0.20$; see also Figure 2 for the illustration of the slopes).

The interaction effect between leadership support and team size reveals that the association between change in leadership support and work satisfaction is positive and significant for small-sized teams (effect size = 0.53, SE = 0.20, $p = 0.01$, $CI_{low} = 0.12$; $CI_{high} = 0.93$), it is positive but not significant for average-sized teams (effect size = 0.11, SE = 0.14, $p = 0.47$, $CI_{low} = -0.19$; $CI_{high} = 0.40$), and it is negative and marginally significant for large teams (effect size = −0.32, SE = 0.18, $p = 0.09$, $CI_{low} = -0.69$; CI_{high} 0.06; see also the slopes depicted in Figure 3). Given these patterns of results, we can conclude that the moderating role of team size in the relationship between change in empowering leadership and leadership support,

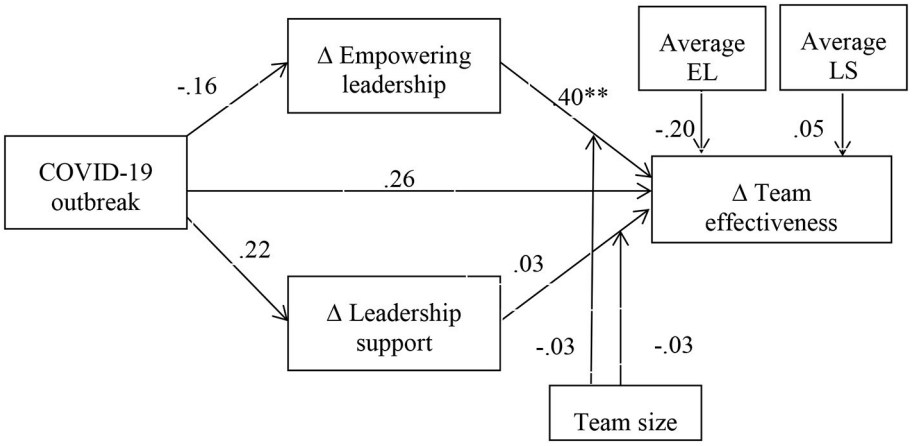


FIGURE 4
The overall moderated mediation results for change in team effectiveness as a function of change in empowering leadership and leadership support after the COVID-19 outbreak. $^{**}p < 0.01$; EL, empowering leadership; LS, leadership support; Δempowering leadership, empowering leadership before COVID-19 minus empowering leadership after the COVID-19 outbreak (change in empowering leadership due to COVID-19); Δleadership support, leadership support before the COVID-19 outbreak minus leadership support after the COVID-19 outbreak (change in leadership support due to COVID-19); Δteam effectiveness, team effectiveness before the COVID-19 outbreak minus team effectiveness after the COVID-19 outbreak (change in team effectiveness due to COVID-19).

on the one hand, and work satisfaction in teams, on the other hand, was supported by the data, lending full support for hypothesis 5.

The moderated mediation results for team effectiveness as a dependent variable reveal a similar pattern of results, with the COVID-19 outbreak having no significant effect on any of the changes in the variables included in the model. The only significant effect is the positive association between the change in empowering leadership and the change in team effectiveness (effect size = 0.40, SE = 0.13, $p = 0.006$, $CI_{low} = 0.12$; $CI_{high} = 0.68$), and none of the interaction effects are significant. The overall results of this moderated mediation analysis with repeated measures are presented in Figure 4.

Given the fact that the outbreak of the COVID-19 pandemic did not have the expected detrimental effects (none of its main effects were significant), the mediating effects hypothesized in the third and fourth hypotheses were not supported by the data. Furthermore, as the moderating effects of team size in the relationship between change in empowering leadership and leadership support, on the one hand, and team effectiveness, on the other hand, were not supported (see Figure 4), we can conclude that hypothesis 6 was not supported by the data.

5. Discussion

This study aimed to capture the potential deleterious consequences of the COVID-19 outbreak on work satisfaction and team effectiveness as triggered by diminished empowering leadership and leadership support. We have used data collected before the COVID-19 outbreak and right after the outbreak in an organization that started using multiteam systems as a way of organizing teams. The analysis and results showed three relevant insights.

First, contrary to our expectations, the results of our study showed that in this organization, for the teams in scope, the COVID-19 outbreak did not significantly decrease work satisfaction or team effectiveness. Our understanding is that, in this regard, this organization and its teams seemed to have absorbed the shock of the COVID-19 outbreak quite well. The organization implemented an organizational setup based on delegating responsibilities to self-managing teams combined with more empowering leadership approaches to foster ownership and autonomous work. With teams established as a core and versatile unit for organizing work, this organization proceeded by introducing organizational constructs to aggregate multiple teams. The main reason for this organizational design was the pursuit of agility (Bundtzen and Hinrichs, 2021) and optimal use of human resources within the organization (Meslec et al., 2023). Based on the results of our study, we infer that this setup aimed toward agility also brought resilience. Resilience was illustrated by the capacity to handle a very disruptive crisis like the COVID-19 outbreak. Agility and resilience can be seen as two sides of the same coin, both addressing the challenges of increased VUCA (volatility, uncertainty, complexity, and ambiguity) environments (Bundtzen and Hinrichs, 2021), with agility in a more positive context and resilience in a more negative context. We did not directly evaluate team resilience, but we believe that the lack of disruptive effects in relation to this global threat is indirectly illustrative of resilience.

The results further show that the COVID-19 outbreak did not significantly decrease teams' perceptions of empowering leadership. In a similar study on changes in leadership behaviors associated with the COVID-19 outbreak, Stoker et al. (2022) showed that although leaders perceive they delegate more and control less, the employee perceptions are not necessarily aligned with what the leaders report. Much like our results, their study reports that employees do not perceive significant changes in the delegating behaviors of their leaders, but they do perceive a significant decrease in control (Stoker et al., 2022). However, the results of our study show the benefits of empowering leadership for work satisfaction and team effectiveness. These results are fully

aligned with the ones reported by Coun et al. (2021), showing that in various stages of the pandemic, empowering leadership practices remained essential for innovative work. Similar results were reported by Siswanti and Muafi (2020), but these studies did not directly test the change in empowering practices triggered by the COVID-19 outbreak. This study addresses the need for more research on empowering leadership and leadership support during organizational and environmental changes (Horoub and Zargar, 2022; Wang et al., 2022) and uses two waves of data collected at the onset of an organizational change and separated by the COVID-19 outbreak to test directly the effects of empowering leadership and leadership support on team outcomes. Although our results show that empowering leadership did not change systematically as a result of the COVID-19 outbreak, when empowering leadership increases, so does the work satisfaction reported in teams. The same effect was found in the positive association between the change in empowering leadership and the change in team effectiveness. It is our understanding that in this organizational setup of teams and multiteam systems, empowering leadership is a positive and influential factor that fosters work satisfaction and drives team effectiveness.

A third important insight provided by the results of our study is the moderating role of team size on the influence of empowering leadership and leadership support on work satisfaction. The results show that the effects of empowering leadership change and leadership support change are positive and significant for small and medium-sized teams, while the effects are negative but not significant for larger teams. These findings are in line with the contextualist view on leadership (O'Connell et al., 2002) and Social Impact Theory (Latané, 1981). According to the Social Impact Theory (Latané, 1981), the effectiveness of social influence attempts decreases with the number of targets; therefore, we believe that such a "division of impact" explains the decreasing association between empowering leadership and leadership support with satisfaction in larger teams. In other words, the strength of the association between leadership support and empowering leadership, on the one hand, and work satisfaction, on the other hand, decreases with the number of team members in the team. In line with the contextualist view on leadership (O'Connell et al., 2002), the impact of empowering leadership and leadership support on satisfaction could also be diffused within the larger teams. Team size is a key design feature constraining the impact of leadership, with a nuanced insight from the results of our study that this applies to work satisfaction in teams but not to their effectiveness.

The three insights generated by the results, as discussed above, have implications for organizations looking for new ways of organizing and changing leadership practices. First, we show that using team-based organizational structures can play an important role in absorbing the effects of a major crisis like COVID-19 with regard to work satisfaction and team effectiveness. This organizational setup with teams as a core building block, aggregated and connected in a setup of multiteam systems, also generates the capability to absorb the impact of an environmental threat and thereby enhances organizational resilience. Second, an empowering leadership style is beneficial in team-based setups for fostering work satisfaction and driving team effectiveness. Finally, our results have implications for team design, as our results show that the beneficial role of empowering leadership for work satisfaction decreases with team size; therefore, managers should devote more attention to large teams in terms of leadership support and empowerment.

5.1. Limitations and future research directions

Our study has a few important limitations. First, the study relied on two data collection moments, and no manipulation for empowering leadership or leadership support was performed; therefore, we cannot draw definite causal conclusions concerning the associations reported in the article. We tested mediation using a repeated measures design, and as a result, we did capture the extent to which changes in empowering leadership and leadership support impact changes in team effectiveness and work satisfaction, but we cannot make definite causal claims about these associations. We join the voices calling for experimental research to disentangle the implications of empowering leadership for team dynamics and outcomes (Tummers and Bakker, 2021; Wang, 2022; Wang et al., 2022). Future studies could manipulate empowering leadership as well as leadership support and place teams in different experimental conditions to explore more directly the effects of these variables on team dynamics and outcomes.

Second, our study was conducted in a single organization that started implementing team-based structures, and as such, our results cannot be generalized to broader organizational settings. It is not unreasonable to assume that empowering leadership may not always be beneficial for team outcomes, especially in teams operating under uncertain or critical conditions in which role ambiguity is high. Empowering leadership fosters autonomy, yet in situations in which role ambiguity is high, empowering leadership could further accentuate role ambiguity and decrease performance (Sharma and Kirkman, 2015; Cheong et al., 2019). Future studies could try to explore the joint influences of empowering leadership and leadership support on team dynamics and outcomes in different teams that operate in volatile environments and have to perform complex tasks with fast-changing demands (such as military or crisis intervention teams). Furthermore, empowering leadership also has dark sides as it can push employees to excessively engage in pro-organizational behavior (Dennerlein and Kirkman, 2022). As pro-organizational behavior in excess has detrimental effects on performance and wellbeing because it increases workload as a job demand (Muntean et al., 2022), future studies could explore the dark sides of empowering leadership in team contexts.

Finally, we have evaluated empowering leadership using a single-item measure, and the reliability of such measures is rather limited. Future studies could use more elaborate and well-established measures of empowering leadership. More comprehensive measures of empowering leadership evaluated different facets (such as coaching, showing concern, leading by example, and participative decision-making; see Arnold et al., 2000), and these dimensions may have differential influences on team dynamics and outcomes. As most of the empirical studies to date have explored empowering leadership as a unidimensional

construct (Cheong et al., 2019), future studies could explore the multidimensional influences of empowering leadership in teams.

6. Conclusions

Our study used a cross-lagged design aimed at surveying the implementation of teamwork in a large organization to test a mediation model in which changes in empowering leadership and leadership support triggered by the COVID-19 outbreak explain changes in team effectiveness and satisfaction. The two waves of our survey were separated by the COVID-19 outbreak, such that the first wave of data was collected just before the outbreak and the second wave of data was collected just after the COVID-19 outbreak. We were thus able to test, using mediation for repeated measures, the extent to which the mediation claims were supported.

The results provided three main insights. First, the COVID-19 outbreak did not significantly decrease work satisfaction or team effectiveness in this organization. Second, the COVID-19 outbreak did not significantly decrease teams' perceptions of empowering leadership or leadership support. However, results show empowering leadership as a positive and relevant factor in fostering work satisfaction and driving team effectiveness. A third insight concerns team size as a relevant team design feature constraining the impact of empowering leadership on work satisfaction.

Overall, we believe that using teams in an organizational setup absorbed well the disruptive impact of the COVID-19 pandemic on the satisfaction and effectiveness of organizational teams. Furthermore, empowering leadership is an important factor in driving work satisfaction and team effectiveness, especially in small- and medium-sized teams, while in large teams, its benefits are lower due to the division and diffusion of leadership impact.

Data availability statement

The dataset analyzed for this study can be obtained from the corresponding author upon reasonable and motivated request.

Ethics statement

The organizational representatives approved the study and the design of the study as well as the survey was reviewed and approved by the Ethical Review Committee of the Open Universiteit (Heerlen, the Netherlands). Surveys were translated in Dutch and participants gave their informed consent for participating in the study.

Author contributions

EEC and PLC: study design, data analysis, first draft, and revisions. EEC: data collection. All authors contributed to the article and approved the submitted version.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

References

Arnold, J. A., Arad, S., Rhoades, J. A., and Drasgow, F. (2000). The empowering leadership questionnaire: the construction and validation of a new scale for measuring leader behaviors. *J. Organ. Behav.* 21, 249–269. doi: 10.1002/(SICI)1099-1379(200005)21:3<249::AID-JOB10>3.0.CO;2-%23

Blanchard, A. L. (2021). The effects of COVID-19 on virtual working within online groups. *Group Process. Intergroup Relat.* 24, 290–296. doi: 10.1177/1368430220983446

Bundtzen, H., and Hinrichs, G. (2021). The link between organizational agility and VUCA – an agile assessment model. *SocioEcon. Chall.* 5, 35–43. doi: 10.21272/sec.5(1).35-43.2021

Chamakiotis, P., Panteli, N., and Davison, R. M. (2021). Reimagining e-leadership for reconfigured virtual teams due to Covid-19. *Int. J. Inf. Manage.* 60, 102381. doi: 10.1016/j.ijinfomgt.2021.102381

Cheong, M., Yammarino, F. J., Dionne, S. D., Spain, S. M., and Tsai, C. Y. (2019). A review of the effectiveness of empowering leadership. *Leadersh. Q.* 30, 34–58. doi: 10.1016/j.leaqua.2018.08.005

Contreras, F., Baykal, E., and Abid, G. (2020). E-leadership and teleworking in times of COVID-19 and beyond: what we know and where do we go. *Front. Psychol.* 11, 590271. doi: 10.3389/fpsyg.2020.590271

Cortellazzo, L., Bruni, E., and Zampieri, R. (2019). The role of leadership in a digitalized world: a review. *Front. Psychol.* 10, 1938. doi: 10.3389/fpsyg.2019.01938

Coun, M. J., Edelbroek, R., Peters, P., and Blomme, R. J. (2021). Leading innovative work-behavior in times of COVID-19: relationship between leadership Style, innovative work-behavior, work-related flow, and IT-enabled presence awareness during the first and second wave of the COVID-19 Pandemic. *Front. Psychol.* 12, 717345. doi: 10.3389/fpsyg.2021.717345

Curşeu, P. L., Schruijer, S. G., and Fodor, O. C. (2017). Minority dissent and social acceptance in collaborative learning groups. *Front. Psychol.* 8, 458. doi: 10.3389/fpsyg.2017.00458

Dennerlein, T., and Kirkman, B. L. (2022). The hidden dark side of empowering leadership: the moderating role of hindrance stressors in explaining when empowering employees can promote moral disengagement and unethical pro-organizational behavior. *J. Appl. Psychol.* 107, 2220–2242. doi: 10.1037/apl0001013

DiStefano, C., Zhu,. M., and Mindrila, D. (2009). Understanding and using factor scores: considerations for the applied researcher. *Pract. Asses. Res. Eval.* 14, 1–11. doi: 10.7275/da8t-4g52

Edelmann, C. M., Boen, F., and Fransen, K. (2020). The power of empowerment: predictors and benefits of shared leadership in organizations. *Front. Psychol.* 11, 582894. doi: 10.3389/fpsyg.2020.582894

Fodor, O. C., Curşeu, P. L., and Meslec, N. (2021). In leaders we trust, or should we? Supervisors' dark triad personality traits and ratings of team performance and innovation. *Front. Psychol.* 12, 650172. doi: 10.3389/fpsyg.2021.650172

Garro-Abarca, V., Palos-Sanchez, P., and Aguayo-Camacho, M. (2021). Virtual teams in times of pandemic: factors that influence performance. *Front. Psychol.* 12, 624637. doi: 10.3389/fpsyg.2021.624637

Hayes, A. F., and Coutts, J. J. (2020). Use omega rather than Cronbach's alpha for estimating reliability. But… *Commun. Method. Meas.* 14, 1–24. doi: 10.1080/19312458.2020.1718629

Horoub, I., and Zargar, P. (2022). Empowering leadership and job satisfaction of academic staff in Palestinian universities: implications of leader-member exchange and trust in leader. *Front. Psychol.* 13, 8060. doi: 10.3389/fpsyg.2022.1065545

Karl, K. A., Peluchette, J. V., and Aghakhani, N. (2022). Virtual work meetings during the COVID-19 pandemic: the good, bad, and ugly. *Small Group Res.* 53, 343–365. doi: 10.1177/10464964211015286

Karriker, J. H., Madden, L. T., and Katell, L. A. (2017). Team composition, distributed leadership, and performance: it's good to share. *J. Leadership Organizational Stud.* 24, 507–518. doi: 10.1177/1548051817709006

Latané, B. (1981). The psychology of social impact. *Am. Psychol.* 36, 343. doi: 10.1037/0003-066X.36.4.343

Lee, A., Willis, S., and Tian, A. W. (2018). Empowering leadership: a meta-analytic examination of incremental contribution, mediation, and moderation. *J. Organ. Behav.* 39, 306–325. doi: 10.1002/job.2220

Lisak, A., Harush, R., Icekson, T., and Harel, S. (2022). Team interdependence as a substitute for empowering leadership contribution to team meaningfulness and performance. *Front. Psychol.* 13, 637822. doi: 10.3389/fpsyg.2022.637822

Mathieu, J., Maynard, M. T., Rapp, T., and Gilson, L. (2008). Team effectiveness 1997-2007: a review of recent advancements and a glimpse into the future. *J. Manage.* 34, 410–476. doi: 10.1177/0149206308316061

Meslec, N., Curşeu, P. L., Fodor, O. C., Batistič S., and Kenda, R. (2023). Multiple teams, multiple projects, multiple groups at the intersection of (multiple) research fields: a bibliometric study. *Front. Psychol.* 14, 1027349. doi: 10.3389/fpsyg.2023.1027349

Montoya, A. K. (2019). Moderation analysis in two-instance repeated measures designs: probing methods and multiple moderator models. *Behav. Res. Methods* 51, 61–82. doi: 10.3758/s13428-018-1088-6

Montoya, A. K. (2022). Selecting a within-or between-subject design for mediation: validity, causality, and statistical power. *Mult. Behav. Res.* doi: 10.1080/00273171.2022.2077287

Montoya, A. K., and Hayes, A. F. (2017). Two-condition within-participant statistical mediation analysis: a path-analytic framework. *Psychol. Methods* 22, 6–27. doi: 10.1037/met0000086

Muntean, A. F., Curşeu, P. L., and Tucaliuc, M. (2022). A social support and resource drain exploration of the bright and dark sides of teachers' organizational citizenship behaviors. *Educ. Sci.* 12, 895. doi: 10.3390/educsci12120895

Nikolova, I., Caniëls, M. C., and Curşeu, P. L. (2021). COVID-19 rumination scale (C-19RS): initial psychometric evidence in a sample of Dutch employees. *Int. J. Health Plann. Manage.* 36, 1166–1177. doi: 10.1002/hpm.3165

O'Connell, M. S., Doverspike, D., and Cober, A. B. (2002). Leadership and semiautonomous work team performance: a field study. *Group Organ. Manag.* 27, 50–65. doi: 10.1177/1059601102027001004

Pluut, H., and Wonders, J. (2020). Not able to lead a healthy life when you need it the most: dual role of lifestyle behaviors in the association of blurred work-life boundaries with well-being. *Front. Psychol.* 11, 607294. doi: 10.3389/fpsyg.2020.607294

Ratiu, L., Curşeu, P. L., and Fodor, O. C. (2022). Death anxiety, job satisfaction and counterproductive work behaviors during the COVID-19 pandemic: a comparative study of healthcare and non-healthcare professionals. *Psychol. Health Med.* 27, 2030–2042. doi: 10.1080/13548506.2021.2007965

Sharma, P. N., and Kirkman, B. L. (2015). Leveraging leaders: a literature review and future lines of inquiry for empowering leadership research. *Group Organ. Manag.* 40, 193–237. doi: 10.1177/1059601115574906

Siswanti, Y., and Muafi, M. (2020). Empowering leadership and individual creativity: the mediation role of psychological empowerment in facing COVID-19 pandemic. *J. Asian Fin. Econ. Bus.* 7, 809–816. doi: 10.13106/jafeb.2020.vol7.no11.809

Stoker, J. I., Garretsen, H., and Lammers, J. (2022). Leading and working from home in times of COVID-19: on the perceived changes in leadership behaviors. *J. Leader. Organ. Stud.* 29, 208–218. doi: 10.1177/15480518211007452

Tummers, L. G., and Bakker, A. B. (2021). Leadership and job demands-resources theory: a systematic review. *Front. Psychol.* 12, 722080. doi: 10.3389/fpsyg.2021.722080

van Knippenberg, D., Giessner, S. R., Sleebos, E., and van Ginkel, W. P. (2021). A motivated information processing perspective on the antecedents of empowering leadership. *J. Appl. Soc. Psychol.* 51, 79–89. doi: 10.1111/jasp.12718

Wang, Q., Hou, H., and Li, Z. (2022). Participative leadership: a literature review and prospects for future research. *Front. Psychol.* 13, 924357. doi: 10.3389/fpsyg.2022.924357

Wang, Y. (2022). Cross-level influence of empowering leadership on constructive deviance: the different roles of organization-based self-esteem and traditionality. *Front. Psychol.* 12, 810107. doi: 10.3389/fpsyg.2021.810107

frontiers | Frontiers in Psychology

TYPE Systematic Review
PUBLISHED 02 June 2023
DOI 10.3389/fpsyg.2023.1092865

OPEN ACCESS

EDITED BY
Llewellyn Ellardus Van Zyl,
North West University, South Africa

REVIEWED BY
Amit Mittal,
Chitkara University, India
Kikooma Julius,
Makerere University, Uganda

*CORRESPONDENCE
Joost Hoedemakers
✉ joost.hoedemakers@ou.nl

RECEIVED 08 November 2022
ACCEPTED 11 May 2023
PUBLISHED 02 June 2023

CITATION
Hoedemakers J, Vanderstukken A and Stoffers J (2023) The influence of leadership on employees' employability: a bibliometric analysis, systematic literature review, and research agenda. *Front. Psychol.* 14:1092865. doi: 10.3389/fpsyg.2023.1092865

The influence of leadership on employees' employability: a bibliometric analysis, systematic literature review, and research agenda

Joost Hoedemakers[1,2]*, Arne Vanderstukken[1] and Jol Stoffers[1,2,3]

[1]Faculty of Management, Open Universiteit, Heerlen, Netherlands, [2]Research Centre for Employability, Zuyd University of Applied Sciences, Sittard, Netherlands, [3]Research Centre for Education and the Labour Market (ROA), Maastricht University, Maastricht, Netherlands

Introduction: Policymakers, researchers, and practitioners have recently begun treating employability-an individual's ability to possess and continuously adjust and acquire up-to-date competencies, flexibility, adaptability, and openness to change-as crucial to enabling employees to respond to ubiquitous and rapid changes in organizations (e.g., changing tasks and work-related processes). Research into ways to enhance employability, particularly through supervisor leadership, which, for example, facilitates training and competence development, has thus grown in popularity. A review on leadership as an antecedent of employability is both evident and timely. This review thus addresses the question of whether a supervisor's leadership influences employees' employability, and in which contexts and through which mechanisms it does so.

Methods: As preliminary study we conducted a bibliometric analysis (which corroborated employability's recent rise in popularity) and as main study we conducted a systematic literature review. For this, the authors independently searched for articles, which met the inclusion criteria and subsequently were included for full text analysis. The authors also independently used the forward and backward snowballing technique for identifying additional articles which met the inclusion criteria and subsequently were included for full text analysis. The procedure resulted in 17 articles in total.

Results: Most of the articles identified positive relationships among several conceptualizations of supervisor leadership and employee employability, such as transformational leadership and leader-member exchange, and to a lesser extent, servant leadership and perceived supervisor support. This review suggests that such relationships occur across different work contexts, such as educational, SMEs, healthcare, and several other industries, and these contexts also vary geographically.

Discussion: The relationships among supervisor leadership and employee employability are largely explained using a social exchange perspective, which means that the positive influence of leadership on employability is itself influenced by a two-way social exchange relationship between supervisor and employees. The quality of the dyadic relationship between leader and followers thus determines the extent to which leaders offer valuable resources such as training and feedback, which subsequently enhances employees' employability. This review demonstrates that investing in supervisors' leadership is a valuable HRM strategy that fosters employability, and it identifies practical implications that inform policy and practice and sets an agenda for future employability research.

KEYWORDS

employability, leadership, social exchange theory, supervisors, employees, systematic literature review

1. Introduction

Employability, defined as the ability to adjust and acquire up-to-date competencies, and being flexible, adaptable, and open for change (Van der Heijden et al., 2018; Van Harten et al., 2020), has recently attracted policymakers', researchers', and practitioners' attention (OECD, 2019). Employability allows employees to respond to contemporary ubiquitous and rapid changes in organizational environments (e.g., changing tasks and work-related processes; Bozionelos et al., 2016), thus changing job demands. Worldwide megatrends cause various rapid changes, such as ongoing technological innovation (Baptista et al., 2020; Henderikx and Stoffers, 2022), hyper-competition (D'Aveni, 1994), aging of the populations, and the COVID-19 pandemic (Rudolph et al., 2020). For example, COVID-19 influenced work-related processes, and employees had to subsequently cope with work-family challenges because work became increasingly organized due to working from home, telecommuting, and virtual teamwork (Rudolph et al., 2020).

Employability helps employees cope with rapidly changing job demands for two reasons. First, employable employees are, by definition, more skilled and flexible than those who are less employable; they climatize quickly to, and even thrive in, new environments (Van der Heijden et al., 2018). Second, employable employees are less likely to develop feelings of job insecurity and panic in reaction to changes; they are confident that they can pursue employment, outside of the current organization if necessary (De Cuyper and De Witte, 2011). Employability contributes to optimal employee functioning (Vanhercke et al., 2014), which subsequently enhances organizational success, for example, in terms of performance (Camps and Rodríguez, 2011) and lower turnover intentions (Nauta et al., 2009). Employability is thus crucial to contemporary employees and employers.

Historical analyses suggest that employability associates with transitions in both the labor market and organizations (Thijssen et al., 2008). Over time, the meaning of employability evolved, resulting in multiple conceptualizations (Forrier and Sels, 2003). The current systematic literature review uses an input-based approach of employability (Vanhercke et al., 2014), focusing on "the subjective perception held by an employee (or by his or her supervisor) about his or her possibilities in terms of competences, to obtain and maintain work" (Van der Heijden et al., 2018, p. 237). Drawing from conceptualizations of employability in human resources management (HRM) and career psychology literature (Fugate et al., 2021), we argue that employability manifests in employer-employee relationships, with employers (e.g., HRM professionals and supervisors) and employees as focal stakeholders. The individual challenge of retaining and enhancing employability is a shared responsibility among employers and employees, and organizations must thus be adaptable since employers are unable to guarantee lifetime job security. Employers focus on employability because it enhances agreements between employers and employees—that is, the psychological contract (Garavan, 1999)—and, as a result, such contracts motivate employees to agreements in the employer-employee relationship (Rousseau, 2004).

The pandemic transformed job demands (e.g., increasement of remote working), consequently employers focus on job resources such as leadership to empower employees so that they are able to respond to challenging post-pandemic job demands (Manuti et al., 2022). Employers seek HRM strategies that enhance employability (Veth et al., 2018), and using such strategies, they facilitate job resources, such as leadership (e.g., contexts), so employees are able to cope with job demands, including, for example, work overload (Bakker and Demerouti, 2017). Employability as a dual employer-employee responsibility namely suggests an increase of the resources of the organization, which enhances the competitive advantage at the organizational level (Vermeeren and Van der Heijden, 2022), and provides career perpective at the individual level (Van der Heijde et al., 2018). However, despite the obvious benefits of employability to organizations, some employers remain reluctant to invest in employability. De Cuyper and De Witte (2011) evidence the employability paradox, which demonstrates risks to organizations, such as increased turnover intentions. The question, then, is which HRM strategies foster employability. Extant studies suggest that job resources (Bakker and Demerouti, 2017), such as training and development opportunities (Van der Heijden et al., 2009; Froehlich et al., 2015) and job's learning value (Le Blanc et al., 2019), foster employees' employability. Several authors thus stress the urgency of "learning to become employable" (Houben et al., 2019, p. 1). Similarly, supervisors' leadership, as a work-related, contextual factor (e.g., a job resource), also stimulates employability (Clarke and Patrickson, 2008; Van der Heijden and Spurk, 2019), for example, by empowering followers and facilitating training and competence development (Becker, 1962). Such leadership, as both context and determinant, might contribute to employability (Van der Heijde and Van der Heijden, 2014).

From a relational perspective, leadership associates with "a social influence process through which emergent coordination (i.e., evolving social order) and change (e.g., new values, attitudes, approaches, behaviors, and ideologies) are constructed and produced" (Uhl-Bien, 2006, p. 655). This is particularly true because the influences of training and development on employees' employability are also influenced by both leadership and the quality of the relationship between supervisors (e.g., employer or leader) and the employee (Struzyna and Marzec, 2017). From an employer-employee relationship perspective, better understanding of the leadership-employability relationship is paramount (Fugate et al., 2021), especially when talent is scarce and retraining employees is important to employers, and when investing in employability is crucial. A literature review of supervisors' leadership as antecedents to employees' employability enhancement is thus evidently needed (Chughtai, 2019; Wang et al., 2019).

To advance employability research, this review identifies, selects, and evaluates extant studies to report on the state of knowledge (Denyer and Tranfield, 2009) regarding the relationship between supervisors' leadership and employees' employability. To address high-quality reporting, which is "transparent, complete and accurate" (8), this review uses Page et al. (2021)'s Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) to address the research question (Counsell, 1997) of which work contexts and mechanisms influence supervisors' leadership's influence on employees' employability. This review

has the potential to inform policy, practice, and research in management and organization studies (Denyer and Tranfield, 2009), especially those related to employability. From both career (i.e., employees) and HRM (employers) perspectives, it is important to synthesize the findings in extant studies to assess for consistency (Petticrew, 2001). This literature review is first to synthesize empirical findings on relationships between supervisors' leadership and employees' employability, and it therefore represents a valuable contribution to employability literature.

2. Overview of studies

A triangulation approach was used to enhance the consistency of findings, and subsequently to increase the review's validity (Saunders et al., 2012). We, therefore, began with explorative quantitively bibliometric analysis. We retrospectively report on publication-related metric total publications (TP) on two topics—employability and both leadership and employability. We then map these topics as they relate to employability, and we are thus able to identify research gaps in the literature (Donthu et al., 2021). Research gaps are relevant as a starting point when reporting on the current state of research on a topic in the form of a literature review, which additionally includes recommendations for future research. As the main study, a qualitative systematic literature review (Denyer and Tranfield, 2009) is used to search for and synthesize peer-reviewed Dutch and English studies systematically and subsequently report on the present state of knowledge on the relationship between leadership and employability. Both methodologies allow a systematical, explicit, and replicable (Fink, 2005) investigation of employability literature.

2.1. Preliminary study: bibliometric analysis

2.1.1. Methodology

During December 2021, we began with a manual qualitative literature review (Denyer and Tranfield, 2009), and we used a bibliometric methodology to explore the current state of scientific research on employability, particularly the combination of leadership and employability. The purpose was to quantify Chughtai (2019)'s and Wang et al. (2019)'s arguments of research gaps on the relationship between leadership and employability. Bibliometric methodology mitigates researcher bias (Zupic and Cater, 2015) and is thus relevant as a preliminary study to a literature review. The methodology uses quantitative techniques, including, for example, co-occurrence (i.e., co-word) analysis, to identify and analyze large amounts of bibliometric data from scientific databases, such as Web of Science (Broadus, 1987). It extracts bibliometric data (e.g., keywords, journals, and researchers) from scientific databases and it uses them as inputs to allow a researcher to map bibliometric networks using bibliometric software (e.g., VOSviewer; Van Eck and Waltman, 2014; Donthu et al., 2021). Such networks consist of nodes and edges. Nodes represent bibliometric data (e.g., keywords), which depend on a specific analysis (Liao et al., 2018). For example, co-occurrence networks visualize relationships between keywords, and the size of a node represents the frequency of such occurrences in bibliometric data. Edges represent indications and the strength of relationships between nodes (Van Eck and Waltman, 2014).

To discover such indications and the strength of relationships between nodes in a bibliometric network, VOSviewer uses lines to connect nodes. The thickness of a line and the size of a node represent the strength and the occurrence, or co-occurrences, between nodes (e.g., keywords). As a result, a theme-related node forms a thematic cluster. VOSviewer shows nodes that relate to a thematic cluster using color schemes (Van Eck and Waltman, 2014; Donthu et al., 2021). Bibliometric methodology uses two techniques—performance analysis and science mapping (Donthu et al., 2021). Performance analysis considers contributions to a field from research constituents (e.g., authors, topics, and countries) (Cobo et al., 2011), and science mapping analyzes relationships between research constituents (Baker et al., 2021).

2.1.2. Performance analysis

We conducted performance analysis to assess publication-related metric total publications (TP) retrospectively regarding employability and both leadership and employability. These topics associate with keyword searches of an article's title, abstract, and author. We identified bibliometric data and subsequently extracted and analyzed them as output files of the Web of Science (WoS) database using the search string *topic "employability," publication years until year 2022, document types "article," and language "English"* OR *"Dutch."* We also used the Web of Science bibliographic database, using search string *topic "employability"* AND *"leadership," publication years until year 2022, document types "article," and language "English"* OR *"Dutch."*

2.1.3. Co-occurrence analysis

We applied a core technique—keyword co-occurrence analysis—for science mapping. We visualized relationships between keywords in a co-occurrence network (Van Eck and Waltman, 2014), which is used commonly in management research (Phulwani et al., 2020). Keyword co-occurrence analysis focuses on actual content (i.e., words) in publications, such as author keywords, words in article titles, and abstracts as a unit of analysis. Co-occurrence refers to the degree to which two keywords are included in an article's keywords, title, and abstract (Van Eck and Waltman, 2014). To identify, extract, and analyze bibliometric data, we searched WoS database using the search string *topic "employability," publication years until year 2022, document types "article," and language "English"* OR *"Dutch."* We downloaded the resulting bibliographic data in *.txt format in batches of 1000 publications, which were included for further analysis. To analyze and visualize the bibliometric network, we used data from WoS (e.g., output data) as input data in VOSviewer. We applied all keywords as a unit of analysis and full counts as the counting method to visualize co-occurrence networks of the search string (see Figure 3) (Van Eck and Waltman, 2014). We used 20 as the minimum number of occurrences of a keyword as a threshold, and we did not verify selected keywords further.

2.1.4. Results

2.1.4.1. Performance analysis

The search string *topic "employability," publication years until year 2022, document types "article," and language "English"* OR *"Dutch,"* resulted in 4453 articles, and search string *topic "employability"* AND *"leadership," publication years until year 2022, document types "article," and language "English"* OR *"Dutch,"* resulted in 143 articles. Results suggest that education (34.9%; n = 1,556), management (10.4%; n = 465), and applied psychology (9.1%; n = 405) are the best represented categories in WoS for employability and both leadership and employability (education, 36.4%; n = 52; management, 17.5%; n = 25; applied psychology, 13.3%; n = 19). Outcomes from performance analysis appear in Figures 1, 2, which report publication-related metric total publications (TP) year-wise for both topics (Donthu et al., 2021).

2.1.4.2. Science mapping and co-occurrence analysis

Using VOSviewer, results from co-occurrence analysis on the topic of employability (Figure 3) returned 12,644 keywords, of which 267 met the threshold of 20 as the minimum number of occurrences of a keyword. The 267 keywords were distributed across 4 colored thematic clusters, with 14,134 links and a link strength of 49,482. VOSviewer uses colors to reveal a cluster and links between keywords within a cluster. Results suggest that cluster 1 (red) contained 80 keywords, which focus on education topics (e.g., academic performance and curriculum development), and cluster 2 (green) contained 75 keywords, which associate with work-related topics such as HRM and career development. Cluster 3 (blue) contained 69 keywords related to labor market topics, such as unemployment, and cluster 4 (yellow) contained 43 keywords that focus on health-related topics that relate to employability, such as mental health and depression.

2.1.5. Conclusion

The performance analysis suggested an increase of research articles on both employability and the combination of employability and leadership, particularly between 2017 and 2022, during which 66.8% (n = 2,973) of articles on employability and 82.5% (n = 118) on employability and leadership were published. Since 2012, the number of employability articles has exceeded 100. Co-occurrence analysis of keywords suggested that employability links to multiple keywords, including leadership (Figure 4).

Cluster 1 (red), which comprises education and work-related topics such as students, education, skills, competencies, work experience, and employers, contained both main keywords—leadership and employability. Thus, the link between leadership and employability relates to the aforementioned topics, examining education and work-related topics. From the co-occurrence analysis, we argue that employability researchers focus on major topics such as employment, work, (higher) education, careers, skills, and competencies. From 1972 to 2021, there was an increase to the year-wise number of articles on employability and leadership. However, we are interested in the influence of supervisors' leadership as a job resource, and thus in a work context, on employees' employability. A systematic literature review is thus relevant to revealing the current state of research on the employability-leadership link from an employer-employee perspective, thus within work contexts. We are thus able to identify research gaps and develop an agenda for new research directions to further explore these topics from that perspective.

2.2. Main study: systematic literature review

2.2.1. Methods

This literature review uses PRISMA 2020's recommendations regarding producing high-quality reporting (Moher et al., 2009; Page et al., 2021). Following Page et al. (2021)'s PRISMA 2020 flow diagram (Figure 5), this article reports on PRISMA's process to explore supervisors' leadership influence on employees' employability. To conduct the review, we use Grant and Booth (2009)'s critical four stages—Search, AppraisaL, Synthesis, and Analysis (SALSA)—so that the four principles of systematic reviews—transparency, inclusivity, explanatory, and heuristic nature—are guaranteed (Denyer and Tranfield, 2009). Transparency means being clear and explicit about methodologies, procedures, and processes, such that readers are able to audit them. Inclusivity requires assessing only studies that meet inclusion criteria, and subsequently addressing a research question. Explanatory means synthesizing findings from studies so that the findings, in combination, "make a whole that should be more than the sum of the parts" (680). Heuristic means reporting findings in a way that they have practical implications for practitioners and policymakers (Denyer and Tranfield, 2009).

Drawing from SALSA (Grant and Booth, 2009) and guided by the review's purpose, the Search stage identified relevant literature using multiple search techniques, such as database searching using free-text searches, with limited function and reference list checking (e.g., backward and forward snowballing). The AppraisaL stage comprised selecting studies systematically by assessing whether each met the inclusion criteria. Synthesis is concerned with seeking patterns, for example, by comparing findings from the reviews' included studies (Gray and Malins, 2004). The Analysis stage reports on the robustness of the Synthesis in terms of the quality of included studies (Denyer and Tranfield, 2009) that reasonably demonstrate the current state of research regarding what is and is not known (Denyer and Tranfield, 2009) about the influence of supervisors' leadership on employees' employability.

From January 2022 to 8 February 2022, we developed a research protocol that began with determining initial search terms, and inclusion and exclusion criteria, and with searching research databases, such as Academic Search Elite (EBSCO), APA PsycARTICLES (EBSCO), Emerald Insight (management) Psychology, Behavioral Sciences Collection, and WoS, to identify published peer-reviewed English and Dutch empirical articles. We did not exclude conference articles, books, and book chapters. The initial search term was based on core concepts of the aforementioned research question—leadership and employability—and was used to identify as many articles as possible, up to February 2022. Employability has been studied from many perspectives, which led to a plurality of definitions and operationalizations of the concept. The current review uses

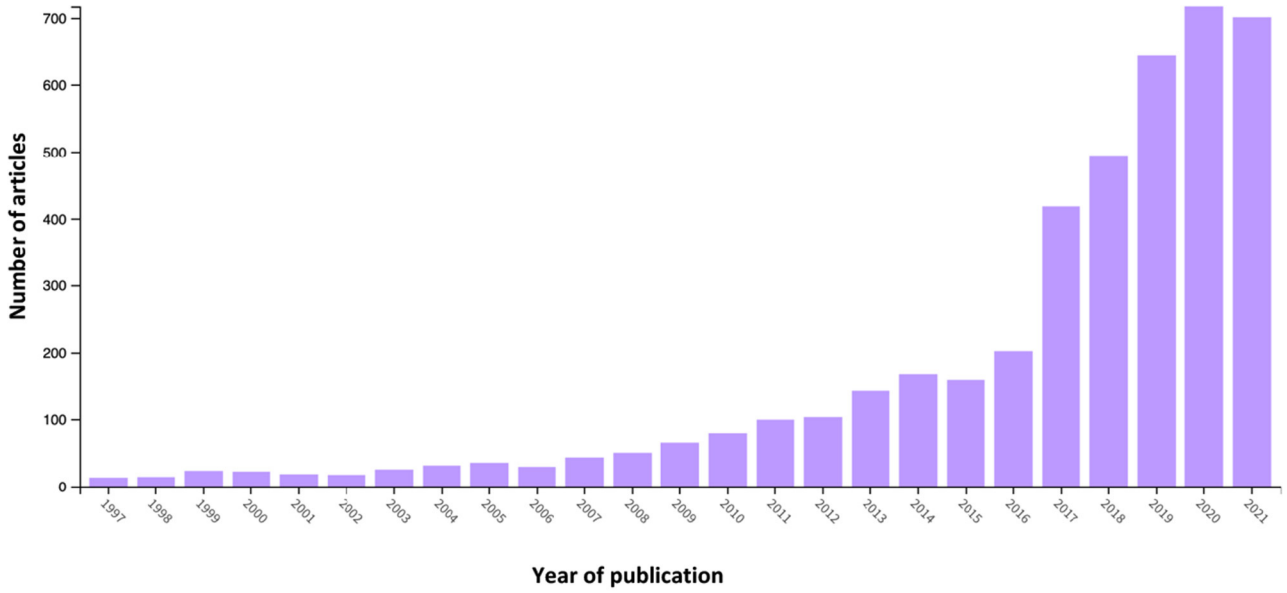


FIGURE 1
Year-wise number of employability articles (1997–2021). This figure reports the publication trend of scientific articles on the topic of employability to 2022. Data were retrieved from the Web of Science database using the search string: topic "employability," document type "articles," language "English" OR "Dutch," and publication years to 2022.

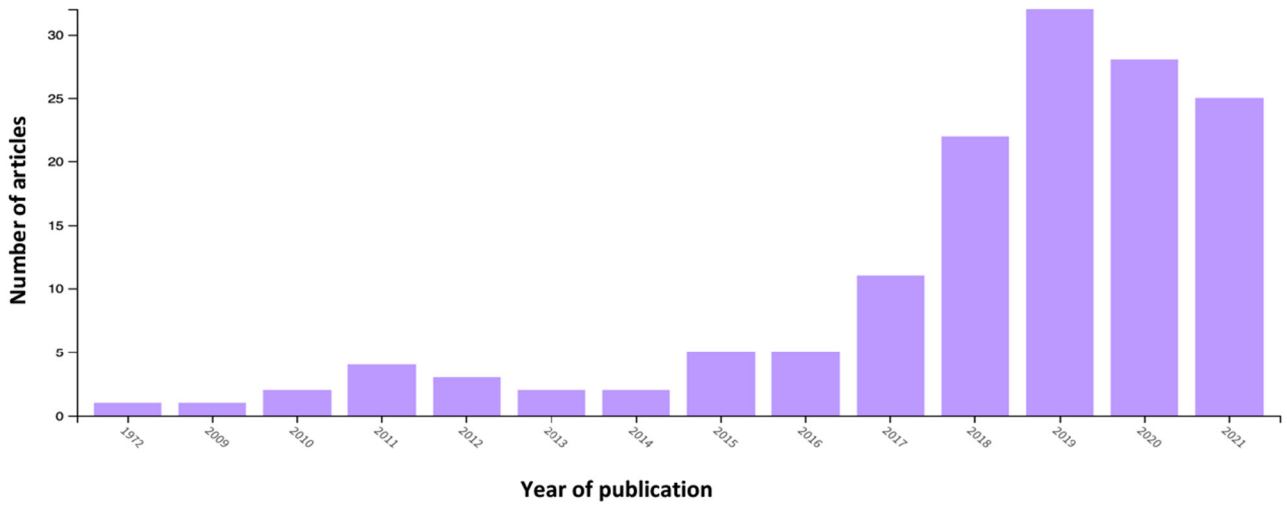


FIGURE 2
Year-wise number of employability and leadership articles (1972–2021). This figure reports the publication trend of scientific articles on the topics of employability and leadership to 2022. Data were retrieved from the Web of Science database using the search string: topic "employability" AND "leadership," document type "articles," language "English" OR "Dutch," and publication years to 2022.

HRM and career perspectives that encompass focal stakeholders in organizations—employees and employers (Fugate et al., 2021).

2.2.2. Eligibility criteria

We used inclusion and exclusion criteria to select studies that investigated the influence of leadership on employability among employees (i.e., subordinates) and supervisors (i.e., leaders). We searched major research databases using advanced filters, such as subjects that included "employability" OR "perceived employability" AND "leadership." Searches were restricted to English- and Dutch-language peer-reviewed articles because such articles identify validated knowledge (Podsakoff et al., 2005), and there is lack of knowledge or resources for clear translations. Table 1 reports our inclusion and exclusion criteria.

From January 2022 to 8 February 2022, the first and second authors independently initially searched multiple major research databases using a combination of search techniques, such as Boolean searching. The Appendix reports the full list of research databases that we searched. From a preliminary

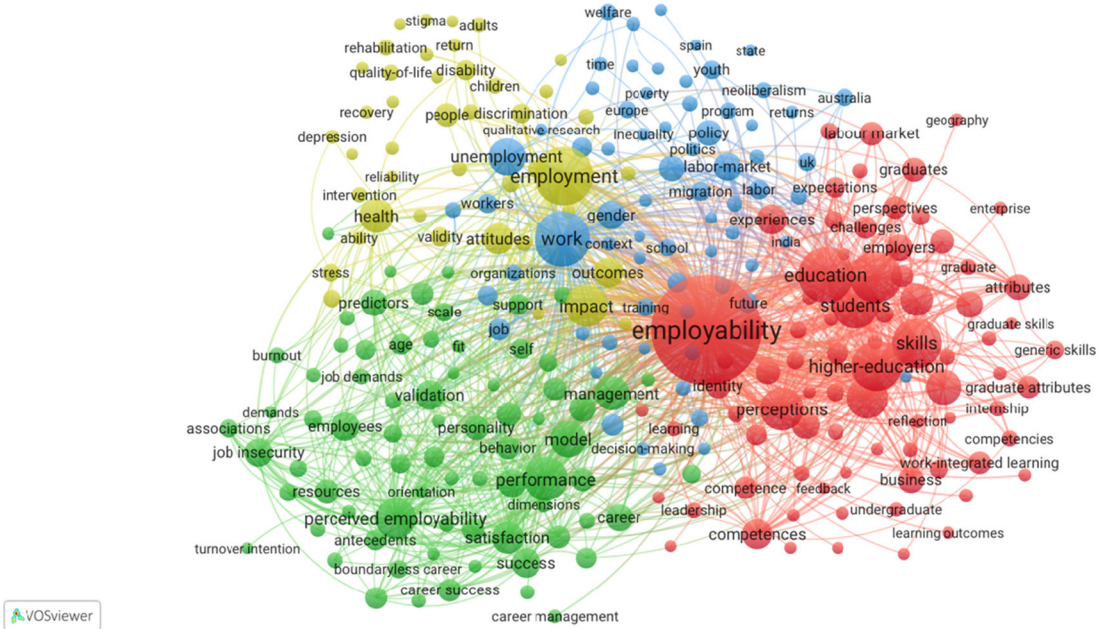


FIGURE 3
Co-occurrence network visualization using VOS viewer on the topic of employability. This figure reports the publication trend of scientific articles on the topic of employability to 2022. Data were retrieved from the Web of Science database using the search string: topic "employability," document type "articles," language "English" OR "Dutch," and publication years to 2022.

search, we identified "self rated employability" and "competence-based employability" as additional keywords, resulting in a final search string that contained the keywords *"perceived employability"* OR *"self rated employability"* OR *"self rated employability"* OR "*competence-based employability"* OR "*competence based employability"* AND *"leadership."* For inclusion, and using free-text searching with a limit function, the search string was restricted to language *"English"* OR *"Dutch"* AND *"peer-reviewed publications,"* with additionally content type *"all,"* publication date *"all,"* subjects *"employability," "perceived employability,"* and *"leadership,"* which resulted in 134 articles that were included during full-text analysis.

2.2.3. Results

2.2.3.1. Study selection

Of the 134 articles found during the searches, 10 met the inclusion criteria. During the last stage of appraisal, the first and second authors independently conducted the forward and backward snowballing technique (Wohlin, 2014) to discover additional articles based on the 10 already identified. Forward snowballing discovers additional articles forward in time (Wohlin, 2014). We used Google Scholar to examine authors cited in the 10 articles. Forward snowballing revealed 357 additional articles, which the first and second authors reviewed independently by assessing the articles' titles and abstracts. We included articles that met the inclusion criteria reported in Table 1. Forward snowballing returned 6 additional articles. The first and second authors also independently used backward snowballing (Wohlin, 2014) to identify additional articles based on the 16 found during the initial searches and using forward snowballing. Backward snowballing discovered additional articles that met the inclusion criteria backward in time by using the reference lists in the 16 articles (Wohlin, 2014). The first and second authors examined the titles in the reference lists of the 16 articles, which resulted in 1 additional article that met the inclusion criteria. The researchers agreed on using these 17 articles as the final set to be analyzed (for a PRISMA flowchart, see Figure 5).

2.2.3.2. Study characteristics

Since 2011, researchers have examined the influence of supervisors' leadership on employees' employability, and since 2016, they have published at least one empirical, peer-reviewed study each year (Figure 6).

Regarding context, and work contexts particularly, researchers have studied the relationship between leadership and employability in both non-profit and for-profit organizations. Most of the studies assessed in the current study (5), were conducted in education contexts, such as universities (Camps and Rodríguez, 2011; Van der Heijden and Spurk, 2019), higher vocational education institutions (Bhattacharya and Neelam, 2018; Gustari and Widodo, 2020), and primary schools (Struzyna and Marzec, 2017), followed closely by 3 studies conducted in small- and medium-sized enterprises (SMEs) (Bozionelos et al., 2016; Stoffers et al., 2019; Epitropaki et al., 2021). Building (Van der Heijden and Bakker, 2011; Van der Heijde and Van der Heijden, 2014), and healthcare organizations, such as non-academic hospitals (Van Harten et al., 2016), acute-care hospitals (Matsuo, 2022), and public healthcare units (Struzyna and Marzec, 2017), have been assessed in several studies. Multiple public service

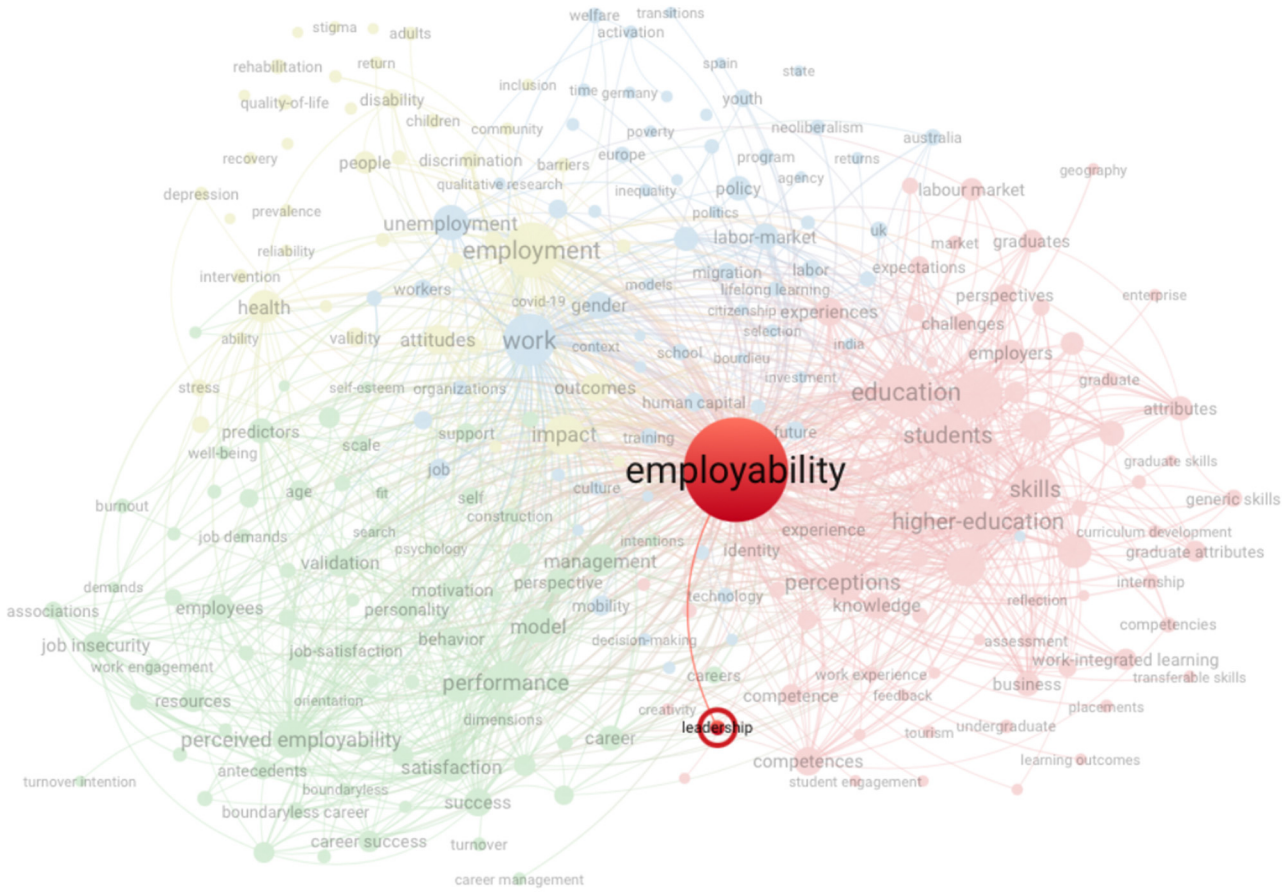


FIGURE 4
Co-occurrence network visualization using VOS viewer on the topic employability, which revealed the employability-leadership link. This figure reports the publication trend of scientific articles on the topic employability to 2022. Data were retrieved from the Web of Science database using the search string: topic "employability," document type "articles," language "English" OR "Dutch," and publication years 2022.

(Struzyna and Marzec, 2017), information and communication technology (Wang et al., 2019), food and beverage (Chughtai, 2019), automotive (Böttcher et al., 2018), insurance (Park, 2020), and mixed-industry (e.g., construction, manufacturing, finance, insurance, and communication; Yizhong et al., 2019) organizations have been assessed.

Regarding addressing participation by employees and supervisors, in most of the studies (8), data were collected in European organizations (Bass and Avolio, 1990a; Van der Heijden and Bakker, 2011; Van der Heijde and Van der Heijden, 2014; Bozionelos et al., 2016; Van Harten et al., 2016; Böttcher et al., 2018; Stoffers et al., 2019; Van der Heijden and Spurk, 2019), followed closely by Asia in 6 studies (Chughtai, 2019; Wang et al., 2019; Yizhong et al., 2019; Gustari and Widodo, 2020; Park, 2020; Matsuo, 2022) and South America (Camps and Rodríguez, 2011) (see Table 1). Two studies did not report in which countries they were conducted (Struzyna and Marzec, 2017; Bhattacharya and Neelam, 2018).

Regarding methodology, and excepting one study, all studies used quantitative survey designs. Bhattacharya and Neelam (2018) used a mixed-methods design to conduct both qualitative and quantitative research (Saunders et al., 2012). Table 2 reports details on participants, conceptualizations of the constructs under study, and other information.

2.2.3.3. Measurements dependent variable: employees' perceived employability

Excepting Bhattacharya and Neelam (2018)'s qualitative measure of employees' employability, all studies used a quantitative design, measuring employability quantitatively as a dependent variable. Employability is operationalized disparately across the quantitative studies using validated scales, in which employees reported their perceived employability on questionnaires.

Seven studies (Camps and Rodríguez, 2011; Van der Heijden and Bakker, 2011; Van der Heijde and Van der Heijden, 2014; Bozionelos et al., 2016; Stoffers et al., 2019; Van der Heijden and Spurk, 2019; Park, 2020) assessed employability using Van der Heijde and Van der Heijden (2006)'s 47-item instrument, which consists of five dimensions—occupational expertise (15 items), anticipation and optimization (i.e., whether an individual responds to changes to internal and external job markets; 8 items), personal flexibility (8 items), corporate sense (7 items), and balance (i.e., balancing personal and a team's or organization's preferences; 9 items). Two studies (Park, 2020; Epitropaki et al., 2021) used a shortened version of Van der Heijde and Van der Heijden

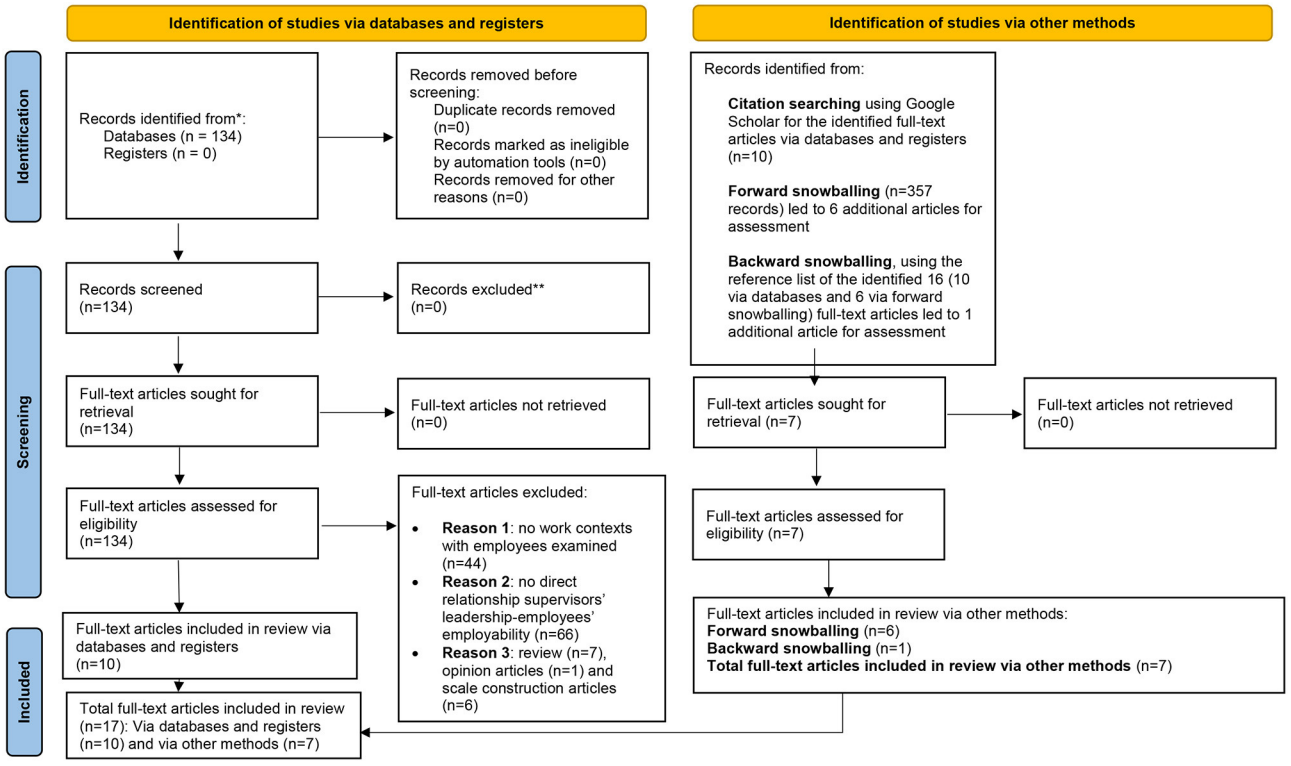


FIGURE 5
Flowchart of study selection using PRISMA 2020.

TABLE 1 Inclusion and exclusion criteria.

Inclusion criteria	Motivation
Empirical studies on the influence of supervisors' leadership (e.g., managers, mentors, and coaches on employees' employability.	
Peer-reviewed journals	Explicitly identify validated knowledge (Podsakoff et al., 2005).
Content types	Published empirical articles in peer-reviewed journals, conference articles, books, and book chapters
Type of data	Quantitative and qualitative data
Subjects	Employability, perceived employability, and leadership
Contexts and participants	Employees and supervisors in work contexts
Publication date	No restriction
Language	English or Dutch
Exclusion criteria	**Exclusion criteria Motivation**
Language: non-English or Dutch	Lack of resources for clear translation
Content types	Repetitive articles such as reviews and opinion articles. Scale construction articles

(2006)'s 5-factor employability instrument, a 22-item, short-form instrument that also measures the five dimensions—occupational expertise (5 items), anticipation and optimization (4 items), personal flexibility (5 items), corporate sense (4 items), and balance (4 items). Two studies (Struzyna and Marzec, 2017; Gustari and Widodo, 2020) used (De Lange et al., 2021)'s 47-item, 5-factor employability instrument to construct a valid fit-for-purpose employability scale, tailored to those studies. Drawing from Van der Heijde and Van der Heijden (2006), Struzyna and Marzec (2017) constructed a fit-for-purpose, 46-item employability scale that comprises eight dimensions of public-organization employees' employability—social competences, adjustability to changes, civic competences, knowledge and professional skills, ability to maintain balance, ethical competences, professional proactivity, and anticipatory striving for professional development. Gustari and Widodo (2020) use a self-constructed fit-for-purpose, 10-item employability scale based on Van der Heijde and Van der Heijden (2006)'s 47-item scale, which also comprises 5 dimensions, though labeled differently—specific work skills and competencies that are more general, proactivity, adaptability, work feelings, and balance. Böttcher et al. (2018) and Yizhong et al. (2019) use Rothwell and Arnold (2007)'s 11-item perceived employability scale, which assesses two dimensions—internal (4 items) and external employability (7 items). The dimensions associate with employees' ability to remain employable in (e.g., internal labor

market) and outside (e.g., external labor market) the organization (Rothwell and Arnold, 2007). Van Harten et al. (2016) assessed employees perceived employability using two constructs—up-to-date expertise and willingness to change. Up-to-date expertise was measured using Thijssen and Walter (2006)'s 9-item, 3-dimension scale, which contains the dimensions technical expertise (3 items), economic expertise (3 items), and perceptional expertise (3 items). Willingness to change was measured using a self-constructed fit-for-purpose, 4-item scale based on Wittekind et al. (2010) and Van Dam (2004). Multiple studies treated perceived employability as a unidimensional construct. Chughtai (2019) used De Vos and Soens (2008) 3-item scale, Wang et al. (2019) used Eby et al. (2003)'s 6-item scale, and Matsuo (2022) used De Cuyper et al. (2011)'s 4-item scale. Table 3 reports greater details on these studies' participants, conceptualizations of constructs, and other information.

2.2.3.4. Measurement leadership as a determinant of employability enhancement: content and effects

The determinant of interest is supervisors' leadership. We now discuss how such leadership was measured and contributes to employees' employability (See Figure 7 for conceptualizations of supervisor leadership in included articles). The 17 studies were heterogeneous concerning research models. The majority (Van der Heijden and Bakker, 2011; Van Harten et al., 2016; Struzyna and Marzec, 2017; Chughtai, 2019; Yizhong et al., 2019; Gustari and Widodo, 2020; Matsuo, 2022) examine leadership as a determinant of employability enhancement using a mediated model. Researchers also investigate the relationship between leadership and employees' employability using moderated (Böttcher et al., 2018; Van der Heijden and Spurk, 2019), moderated mediation (Camps and Rodríguez, 2011; Bozionelos et al., 2016; Stoffers et al., 2019; Wang et al., 2019; Epitropaki et al., 2021), mixed methods (Bhattacharya and Neelam, 2018), and main effects (Van der Heijde and Van der Heijden, 2014; Park, 2020) models.

Findings suggest that supervisors' leadership has been conceptualized in several ways. Most of the studies focus on relationships between transformational leadership (Burns, 1978) and employability. Transformational leadership contains four dimensions, the four I's (Avolio et al., 1991), including idealized influence (e.g., charisma), inspirational motivation, intellectual stimulation, and individualized consideration. These four I's encourage followers to transform their attitudes, values, and behaviors through empowerment, such that followers achieve outstanding performance (Burns, 1978; Bass and Avolio, 1990a; Bass, 1999). Idealized influence associates with a leader's behaviors that make employees perceive their leaders as role models. Inspirational motivation is concerned with leaders having a vision of a future state that inspires and motivates followers so that they achieve outstanding performance and increase job satisfaction. Intellectual stimulation describes a leader's behaviors that stimulate and recognize followers' creativity and innovation by, for example, fostering autonomy. Individualized consideration is concerned with a leader's behaviors that focus on followers' developmental needs through, for example, support and coaching (Bass and Avolio, 1990a; Bass, 1999).

Several authors have found that transformational leadership relates positively with employability (Van der Heijden and Bakker, 2011, ß = 0.14, $p < 0.05$; Camps and Rodríguez, 2011, ß = 0.62, $p < 0.01$; Van der Heijde and Van der Heijden, 2014, ß = 0.23, $p < 0.001$ for supervisor' ratings of employees' employability and ß = 0.17, $p < 0.01$ for employee's ratings of employability; Struzyna and Marzec, 2017, $\gamma = 0.12$, $p < 0.01$; Yizhong et al., 2019, ß = 0.21, $p < 0.01$; Gustari and Widodo, 2020, ß = 0.34, $p < 0.01$).

Böttcher et al. (2018) argue that the relationship between transformational leadership and internal employability (ß = 0.31, $p < 0.01$ for the full item scale and ß = 0.24, $p < 0.01$ for the one-item scale) is stronger than that with external employability (ß = 0.15, $p < 0.01$). They found that when the subdimensions of transformational leadership were entered simultaneously, three dimensions—idealized influence attributed (ß = 0.12, $p < 0.05$), idealized influence behavior (ß = 0.11, $p < 0.05$), and individualized consideration (ß = 0.20, $p < 0.01$)— had a greater positive influence on internal employability (full item scale), in contrast with inspirational motivation (ß = −0.45, $p = 0.45$, n.s.) and intellectual stimulation (ß = −0.05, $p = 0.38$, n.s.). When the subdimensions of transformational leadership were entered simultaneously, idealized influence attributed (ß = 0.15, $p < 0.05$) and individualized consideration (ß = 0.20, $p < 0.01$) also influenced internal employability (one-item scale) positively. This contrasts with non-significant influences of idealized influence behavior (ß = 0.02, $p = 0.73$, n.s.), inspirational motivation (ß = −0.00, $p = 0.94$, n.s.), and intellectual stimulation (ß = −0.05, $p = 0.73$, n.s.) on internal employability (one-item scale) when the subdimensions were entered simultaneously. When the subdimensions of transformational leadership were entered simultaneously, Böttcher et al. (2018) found no relationship between them and external employability. When entered separately, the idealized influence attributed (ß = 0.15, $p < 0.01$), idealized influence behavior (ß = 0.14, $p < 0.01$), inspirational motivation (ß = 0.13, $p < 0.01$), intellectual stimulation (ß = 0.11, $p < 0.01$), and individualized consideration (ß = 0.15, $p < 0.01$) influenced external employability positively.

Assessing the second most common leadership model, multiple authors report a positive influence of leader-member exchange (LMX) (Graen and Uhl-Bien, 1995) on employability. LMX represents perceived quality of social exchanges between followers and immediate supervisors, characterized by dyadic affection, loyalty, contribution, and professional respect (Liden and Maslyn, 1998), and their influence on both leaders' and followers' attitudes and behaviors (Graen and Uhl-Bien, 1995), such as employability.

Epitropaki et al. (2021) found that both follower- (ß = 0.570, $p < 0.01$) and leader-rated (ß = 0.632, $p < 0.01$) employability are influenced positively by agreement on LMX among followers and leaders. In the context of LMX disagreement, leader-rated employability was higher when leaders perceived that LMX was higher than followers' perceived LMX. Stoffers et al. (2019) find a positive influence of immediate supervisors' LMX on employees' employability, which was influenced by national context in Belgium and the Netherlands. Findings suggest that a positive relationship in a Dutch sample (ß = 0.341, $p < 0.001$) was greater than in a Belgium sample (ß = 0.296, $p < 0.05$). Struzyna and Marzec (2017) found that LMX fosters employees' employability ($\gamma = 0.45$, $p < 0.01$), but Van der Heijden and Spurk (2019) found no support for an influence of LMX on all dimensions of perceived employability (Van der Heijde and Van der Heijden, 2006)—occupational expertise, anticipation and optimization, personal flexibility, corporate sense, and balance.

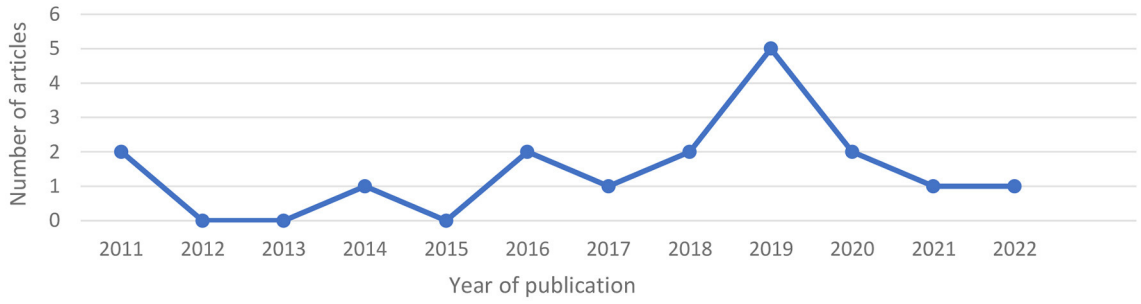


FIGURE 6
Yearly publication of included articles on the relationship between leadership and employability.

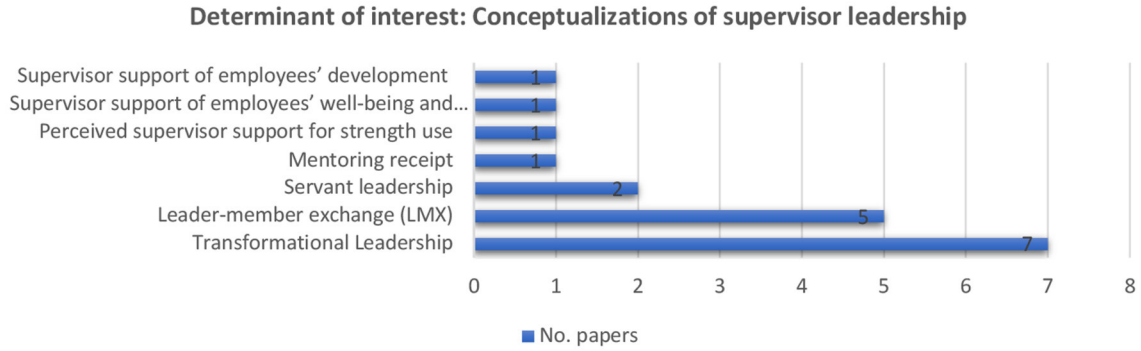


FIGURE 7
Conceptualizations of supervisor leadership in included articles ($n = 17$).

TABLE 2 Overview of countries in which data were collected.

Country	Number of articles
The Netherlands	6
China, Germany, Greece, Italy, and Poland	2
Belgium, Costa Rica, Great Britain, Indonesia, Japan, Norway, Pakistan, and South Korea	1
Unspecified	2

Some studies collected data in multiple countries, and thus the total number of articles in combination with the countries in which the studies were conducted exceeded the 17 included articles.

Park (2020) found that LMX associates with only one dimension of perceived employability (Van der Heijden et al., 2018)—corporate sense (ß = 0.245, $p < 0.01$).

Examining a third leadership model, Chughtai (2019) and Wang et al. (2019) demonstrate contrary findings of a positive influence of servant leadership (Greenleaf, 1977) on employees' perceived employability. Servant leadership concerns fulfilling followers' needs by providing support that subsequently enhances followers' potential (Greenleaf, 1977), such as career potential (e.g., employability). Wang et al. (2019) found that servant leadership fosters employees' perceived employability (ß = 0.19, $p < 0.01$), but Chughtai (2019) found no support for the same (ß = −0.09, *ns*).

Some studies instead assess employees' perceived supervisor support, with one suggesting that leadership influences employees' perceived employability positively, including informal mentoring (Bozionelos et al., 2016, ß = 0.26, $p < 0.01$), but perceived supervisor support does not (Matsuo, 2022, ß = −0.11, *ns*). Mentoring represents a relationship between two individuals, traditionally of unequal status, during which the mentor provides multiple development opportunities through, for example, coaching and counseling (Kram and Isabella, 1985). Supervisor support associates with supervisory support, which contributes to positive work outcomes, such as job satisfaction (Miglianico et al., 2020). Van Harten et al. (2016) demonstrate that supervisors' support of employees' wellbeing and functioning (ß = 0.24, $p < 0.001$) influences employability, conceptualized as up-to-date expertise, positively, but not employability conceptualized as willingness to change. Supervisors' support of employees' development influences employability conceptualized as willingness to change, but not that conceptualized as up-to-date expertise. Table 3 reports greater details on these articles.

3. The mechanisms: mediators and moderators

While reporting on direct influences of supervisor leadership on employee employability, findings from the 17 articles suggested

TABLE 3 Details of included studies.

References	Empirical context	Research design	Sample/participants	Conceptualization of leadership	Conceptualization of employability	Theories used in research frameworks
Van der Heijden and Bakker (2011)	• The Netherlands • One large Dutch building company	• Quantitative cross-sectional survey research • Mediation research model	Employees/supervisors pairs ($n = 303$)	• Perceived supervisors' transformational leadership assessed using employee ratings • Five of the nine original subscales (45 items) from Alimo-Metcalfe and Alban-Metcalfe (2001)'s transformational leadership questionnaire; α ranged from 0.82 to 0.95	• Perceived employees' employability measured using supervisor ratings for a maximum of three employees • Van der Heijde and Van der Heijden (2006)'s 47-item, 5-factor employability instrument; α ranged from 0.83 to 0.95 within dimensions	Job demands-resources (JD-R) theory (Bakker and Demerouti, 2017)
Camps and Rodríguez (2011)	• Costa Rica • One large university	• Quantitative cross-sectional survey research • Two-level data structure • Department-level ($n = 75$) • Employee-level • Moderated mediation model	Employees ($n = 795$)	• Perceived Head of Department leader's transformational leadership assessed using lecturers' and professors' ratings • Perceived transformational leadership measured using Podsakoff et al. (1990)'s 5-dimensional scale (18 items)	Perceived employees' employability measured using Van der Heijde and Van der Heijden (2006)'s 47-item, 5-factor employability instrument	Social exchange theory (SET; Cropanzano and Mitchell, 2005; Blau, 2017)
Van der Heijde and Van der Heijden (2014)	The Netherlands One large Dutch building company	• Quantitative cross-sectional survey research • Main effect research model • Multi-source data collection	• Employees ($n = 314$) • Immediate supervisors ($n = 334$) • Employee/supervisor pairs ($n = 290$)	• Perceived supervisors' transformational leadership assessed using employee ratings • Five of the nine original subscales (45 items) of Alimo-Metcalfe and Alban-Metcalfe (2001)'s transformational leadership questionnaire; α ranged from 0.82 to 0.95	• Perceived employees' employability assessed using both self-ratings and supervisor ratings of Van der Heijde and Van der Heijden (2006)'s 47-item, five-factor employability instrument; α ranged from 0.78 to 0.90 for self-ratings, and 0.83 to 0.95 for supervisor ratings	Authors revealed no theory for explaining the findings.
Van Harten et al. (2016)	• The Netherlands • Three Dutch non-academic hospitals	• Quantitative cross-sectional survey research • Mediated research model	• Employees ($n = 1,626$): • Nursing staff (39%), medical office assistants or clerical staff (25%), non-nursing medical employees (24%), middle or higher managers or staff members (12%).	• Perceived supervisors' support of employees' wellbeing and functioning assessed using Knies and Leisink (2014)'s 4-item scale; α was 0.91 • Perceived supervisors' support of employees' development assessed using Knies and Leisink (2014)'s 4-item scale; α was 0.87	• Perceived employees' employability measured using two constructs: • Thijssen and Walter (2006)'s 3-dimension, 9-item, up-to-date expertise scale; α was 0.78, and willingness to change assessed using a 4-item scale based on Wittekind et al. (2010) and Van Dam (2004); α was 0.71	Authors revealed no theory for explaining the findings.
Bozionelos et al. (2016)	• Greece, Italy, and Poland • Small and medium-sized enterprises (SMEs)	• Quantitative cross-sectional survey design • Moderated mediation model • Multi-source data collection: IT professionals and line managers	Information technology (IT) professionals ($n = 207$) from Greece ($n = 50$), Italy ($n = 43$), and Poland ($n = 114$)	Perceived mentoring receipt assessed using Dreher and Ash (1990)'s 5-item scale; α was 0.83	Perceived employees' employability assessed using supervisor ratings of Van der Heijde and Van der Heijden (2006)'s 47-item, 5-factor employability instrument; α ranged from 0.81 to 0.92 within dimensions	Authors revealed no theory for explaining the findings.

(Continued)

10.3389/fpsyg.2023.1092865

TABLE 3 (Continued)

References	Empirical context	Research design	Sample/participants	Conceptualization of leadership	Conceptualization of employability	Theories used in research frameworks
Struzyna and Marzec (2017)	• Unspecified • Several public organizations: • Municipal/commune centers of culture ($n = 14$) • Public health care units ($n = 14$) • County labor offices ($n = 14$) • Municipal/commune units of social assistance ($n = 14$) • Primary schools ($n = 14$) • Commune centers for family support ($n = 44$) • Municipal commune offices ($n = 33$)	• Quantitative cross-sectional survey design • Mediated model	• Employees ($n = 566$) specified by public organizations: • Municipal/commune centers of culture ($n = 80$) • Public health care units ($n = 80$) • County labor offices ($n = 80$) • Municipal/commune units of social assistance ($n = 80$) • Primary schools ($n = 80$) • Commune centers for family support ($n = 80$) • Municipal commune offices ($n = 86$)	• Perceived quality of supervisor-employee relationships (i.e., LMX) measured using Liden and Maslyn (1998)'s scale • Perceived transformational leadership was measured with a constructed scale based on scales developed by Hartog et al. (1997) and Avolio et al. (1999).	• Perceived employees' employability measured using an 8-dimensional constructed scale, drawing from Van der Heijde and Van der Heijden (2006)'s 47-item, 5-factor employability instrument • The scale contains the dimensions of social competences, ability to adjust to changes, civic competences, knowledge and professional skill, ability to maintain balance, ethical competences, pro-active professional attitude, anticipatory strive for professional development	LMX (Graen and Uhl-Bien, 1995)
Böttcher et al. (2018)	• Germany • Two organizational units in one large German automotive company	• Quantitative cross-sectional survey design • Moderated model	White-collar employees ($n = 1,006$)	• Perceived transformational leadership assessed using a 20-item, multi-dimensional German version of the Multifactor Leadership Scale 5X short (Felfe, 2006), developed by Bass (1985) • This multi-dimensional scale contains five dimensions (each dimension assesses 4 items), (I) idealized influence attribute, (II) idealized influence behavior, (III) inspirational motivation, (IV) intellectual stimulation, and (V) individual consideration; α ranged from 0.80 to 0.91, and 0.96 for the overall scale	• Perceived employability measured using Rothwell and Arnold (2007)'s 11-item scale, which contains sub-dimensions internal employability (four items; $\alpha = 0.55$) and external employability (seven items; $\alpha = 0.79$)	Authors revealed no theory for explaining the findings.
Bhattacharya and Neelam (2018)	Unspecified One business school Two large multinational conglomerates, two retail companies, two financial services companies and three IT companies	• Mixed-method research design with two data collections: first was a quantitative survey and second was semi-structured, in-depth interviews • Multi-source data collection	• Quantitative survey: first year students/interns ($n = 110$) from human resources, sales/marketing, operations, and finance • Qualitative research using semi-structured, in-depth interviews among 14 pairs of students/interns and their mentors from two large multinational conglomerates ($n = 4$), two retail companies ($n = 2$), two financial services companies ($n = 2$), and three IT companies ($n = 6$)	Characteristics of supervisors that leads to intern's satisfaction from LMX-perspective.	Intern's satisfaction in terms of future employability	LMX (Graen and Uhl-Bien, 1995)

(Continued)

10.3389/fpsyg.2023.1092865

TABLE 3 (Continued)

References	Empirical context	Research design	Sample/participants	Conceptualization of leadership	Conceptualization of employability	Theories used in research frameworks
Yizhong et al. (2019)	• China • Organizations in industries such as construction, manufacturing, finance, insurance, and communications	• Quantitative survey with two waves of data collection • Mediated model	Employees ($n = 760$) who worked under line manager for more than 1 year	• Perceived transformational leadership assessed using the 20-item, 5-dimensional Multifactor Leadership Scale (Bass and Avolio, 1995). • This 5-dimension scale contains dimensions (I) idealized influence attribute, (II) idealized influence behavior, (III) inspirational motivation, (IV), intellectual stimulation, and (V) individual consideration; α was 0.938 for the overall scale	• Perceived employability assessed using Rothwell and Arnold (2007)'s 10-item scale, which contains sub-dimensions internal and external employability; α was 0.882 for the overall scale	• Job characteristics theory (Hackman and Oldham, 1975) • Social exchange theory (SET; Cropanzano and Mitchell, 2005; Blau, 2017) • LMX (Graen and Uhl-Bien, 1995)
Chughtai (2019)	• Pakistan • One large food and beverage company	• Quantitative cross-sectional survey design • Mediated model	Full-time employees ($n = 176$) who worked in the head office	Perceived servant leadership measured using Liden et al. (2015)'s 7-item servant leadership scale; α was 0.86	Perceived employability measured using De Vos and Soens (2008)'s 3-item scale; α was 0.84	Authors revealed no theory for explaining the findings.
Van der Heijden and Spurk (2019)	• The Netherlands • One University	• Quantitative cross-sectional survey design • Moderated model	Academic employees across science, technology, engineering and mathematics, and social science disciplines ($n = 139$)	Perceived LMX measured using Graen and Uhl-Bien (1995)'s 7-item scale; α was 0.92	Perceived employability measured using Van der Heijde and Van der Heijden (2006)'s 47-item, 5-factor employability instrument; α ranged from 0.79 to 0.92 within dimensions	• Job demands-resources (JD-R) theory (Bakker and Demerouti, 2017) • Conservation of resources (COR) theory from Hobfoll (1989) • LMX (Graen and Uhl-Bien, 1995)
Wang et al. (2019)	• China • One internet technology company	• Quantitative survey design with two waves of data collection • Moderated mediation model	Employees ($n = 283$)	Perceived servant leadership measured using Liden et al. (2015)'s 7-item servant leadership scale; α was 0.89	Perceived employability measured using Eby et al. (2003)'s 6-item scale; α was 0.89	Authors revealed no theory for explaining the findings.
Stoffers et al. (2019)	• Belgium and the Netherlands • Small and medium-sized enterprises (SMEs)	• Quantitative cross-sectional survey design • Moderated mediation model	• Employees/immediate supervisor pairs: • Belgian sample ($n = 105$) • Dutch sample ($n = 4$ 87)	Perceived LMX measured using Graen and Uhl-Bien (1995)'s 7-item, multi-dimensional scale, which contains dimensions respect (two items, α 0.70 to 0.76), trust (two items, α 0.61 to 0.69), obligation (two items, α 0.74 to 0.75), and relationship quality (one item)	Perceived employability measured using Van der Heijde and Van der Heijden (2006)'s 47-item, 5-factor employability instrument; α ranged in the Belgian sample from 0.75 to 0.90, and in the Dutch sample from 0.78 to 0.91	LMX (Graen and Uhl-Bien, 1995)
Park (2020)	• South Korea • One life insurance company	• Quantitative cross-sectional survey design • Main-effects model	Employees ($n = 257$)	Perceived LMX measured using Graen and Uhl-Bien (1995)'s 7-item scale; α was 0.768	Perceived employability measured using Van der Heijden et al. (2018)'s 22-item, short-form, 5-factor employability instrument; α ranged from 0.790 to 0.892 within dimensions	LMX (Graen and Uhl-Bien, 1995)

(Continued)

10.3389/fpsyg.2023.1092865

TABLE 3 (Continued)

References	Empirical context	Research design	Sample/participants	Conceptualization of leadership	Conceptualization of employability	Theories used in research frameworks
Gustari and Widodo (2020)	• Indonesia • Three private higher-education institutions	• Quantitative cross-sectional survey design • Mediated model	Permanent ($n = 170$).	Perceived transformational leadership assessed using a modified, multi-dimensional, 12-item scale based on Bass and Avolio (1990b); α was 0.966	Perceived employability measured using a 10-item scale based on Van der Heijde and Van der Heijden (2006)'s 5-dimension scale; α was 0.875	No information about used theory to embed the findings within theory
Epitropaki et al. (2021)	• Germany, Greece, Italy, Norway, Poland, The Netherlands, and the United Kingdom • Small and medium-sized enterprises (SMEs)	• Quantitative cross-sectional survey design • Moderated mediation model	Information and communication technology (ICT) employees ($n = 1,127$) and 988 supervisors ($n = 988$); leader-follower dyads ($n = 967$)	Follower- and leader-rated perceived LMX measured using an adapted 7-item version of LMX-7 (Scandura and Graen, 1984; Graen and Uhl-Bien, 1995); α was 0.88 for follower-rated LMX and 0.85 for leader-rated LMX	Follower/employee-rated and leader-rated perceived employability measured using both leaders and followers from Van der Heijden et al. (2018)'s 22-item, short-form, 5-factor employability instrument; composite α was 0.89 for follower-rated employability and 0.94 for leader-rated employability	Sponsorship theory (Rosenbaum, 1979; Wayne et al., 1999)
Matsuo (2022)	• Japan • One acute care hospital	• Quantitative survey design with two waves of data collection • Mediated model	Nurses and assistant nurses ($n = 221$)	Perceived supervisor support for strengths use (PSSSU) was assessed using Keenan and Mostert (2013)'s 8-item scale; α was 0.97	Perceived employability measured using De Cuyper et al. (2011)'s 4-item scale; α was 0.84	• Job demands-resources (JD-R) theory (Bakker and Demerouti, 2017) • Positive psychology (Seligman, 2019)

that the relationship between leadership and employability can be explained by several mechanisms, such as mediators, moderators, or both. Mechanisms represent "the basis for the effect, i.e., the processes or events that are responsible for the change; the reasons why change occurred or how change came about" Kazdin (2007, p. 3). Van der Heijden and Bakker (2011) found that work-related flow is a mediator and thus represents a mechanism in the positive relationship between transformational leadership and employability. Work-related flow is "a short-term peak experience at work that is characterized by absorption, work enjoyment and intrinsic work motivation" (Bakker, 2005, p. 27).

Van der Heijde and Van der Heijden (2014) demonstrate that the influence of leadership on employability enhancement is moderated by both an employee's work role (e.g., managerial/no managerial work role) and personality. Findings suggest that among employees without a managerial work role, the relationship between transformational leadership and employability was positive only for supervisors' ratings of employability ($ß = 0.35$, $p < 0.001$) and not for employees' ratings of the same. However, among employees who had a managerial work role, the relationship was positive for both supervisors' ($ß = 0.17$, $p < 0.05$) and employees' ($ß = 0.22$, $p < 0.01$) ratings (Van der Heijde and Van der Heijden, 2014).

Böttcher et al. (2018) argue that transformational leadership, particularly idealized influence behavior and individual consideration, moderates the negative relationship between age and both internal and external employability. Transformational leadership diminishes the negative influence of age on internal employability, contrary to external employability. Yizhong et al. (2019) found that job characteristics, such as job demands, skill discretion, and decision authority, and social exchanges, particularly perceived organizational support and team member exchanges, explain the positive effects of leadership on employability. Chughtai (2019) demonstrate that servant leadership indirectly and positively influences employability through mediators such as proactive career behaviors (e.g., career planning, skill development, and networking).

Van der Heijden and Spurk (2019) use leadership, particularly LMX, to explain the relationship between learning value of a job and employability. In a context of LMX, relationships between learning value of a job and all five dimensions of employability (Van der Heijde and Van der Heijden, 2006) are positive and strengthened. Wang et al. (2019) demonstrate a positive association between servant leadership and employability, influenced by two mechanisms—career skills (i.e., a mediator) and proactive personality (i.e., a moderator). Servant leaders foster employees' career skills, which subsequently enhance employees' employability. The degree of a proactive personality strengthens the influence of servant leadership on career skills, which subsequently enhances employees' employability. Stoffers et al. (2019) demonstrate that employees' national context (i.e., Belgium and the Netherlands) moderates minimally the positive influence of LMX on employability. Matsuo (2022) found that perceived supervisor support enhances employees' employability (De Cuyper and De Witte, 2011) through the mechanism (i.e., a mediator) strength.

4. Discussion

This review is first to provide an overview of the influence of supervisors' leadership on employees' employability at work (i.e., internal, external, and subdimensions of employability). Despite a lack of studies that assess leadership as a predictor of employability enhancement, we identify and review 17 empirical articles, most of which report positive relationships. This review suggests that supervisors' leadership influences employees' employability positively, thus demonstrating that investment in such leadership represents a valuable HRM strategy regarding employability.

As a result of the preliminary study, and according to Chughtai (2019) and Wang et al. (2019), we argue that there exists scant research that assesses the leadership-employability link explicitly. To develop a research agenda from an employer-employee relationship perspective, it is paramount to recognize the current state of research on the leadership-employability relationship (Fugate et al., 2021). When talent is scarce and retaining employees is important to employers, identifying how leadership, as a job resource, contributes to employability enhancement is crucial.

To explain the positive influences, both direct and indirect, of supervisors' leadership on employees' employability, researchers use various theories of perceived support from leaders in terms of job resources, and subsequent outcomes such as employability. We found that the 17 reviewed articles use social exchange perspectives to explain this influence. From a social exchange perspective, the articles use social exchange theory (SET; Cropanzano and Mitchell, 2005; Blau, 2017) ($n = 2$) or LMX (Graen and Uhl-Bien, 1995; $n = 6$) to explain the positive influence of supervisors' leadership on employees' employability. SET and LMX suggest that two-way social exchange relationships between supervisors and employees affect employees' perceptions of organizational support strongly (Wayne et al., 1997). High LMX is dominated by high dyadic respect, trust, commitment, and interest in each other's wellbeing, which subsequently foster employees' access to job resources (e.g., support and both informal and formal learning opportunities). Employees' improved access to job resources positively affects workplace outcomes (Liden et al., 1997) such as employability.

The articles also use other theories to explain the positive influence of supervisor leadership on employee employability. Van der Heijden and Spurk (2019) and Matsuo (2022), for example, use job demands-resources (JD-R) theory (Bakker and Demerouti, 2017). According to Bakker and Demerouti (2017), JD-R involves a human resources management approach, suggesting that job resources, defined as "physical, psychological, social or organizational aspects of the job are functional in achieving work goals" (p. 274), influence employees' work motivation, especially under challenging work conditions. Job resources, such as performance feedback, LMX, and opportunities for growth, help employees cope with job demands, which subsequently enhance employability. Drawing on this theory, Matsuo (2022) found that a positive psychology (Seligman, 2019) lens explains the link between supervisors' leadership and employees' employability. As a job resource, supervisor support fosters employees' confidence to succeed with task performance, and the result such confidence is employees succeeding with their task performance, which enhances work performance (Van Woerkom et al., 2016) and influences employability positively.

To explain the positive influence of supervisor leadership on employee employability, Van der Heijden and Spurk (2019) use conservation of resources (COR) theory from Hobfoll (1989), which is generally similar to Yizhong et al. (2019)'s use of job characteristics theory (Hackman and Oldham, 1975). COR associates with JD-R theory (Bakker and Demerouti, 2017) because both focus on employees who use resources to cope with organizational stress such as job insecurity. According to Hobfoll et al. (2018), COR suggests that "individuals strive to obtain, retain, foster and protect those things they centrally value" (p. 104), such as employment. Using this coping strategy, employees obtain and retain resources by, for example, investing in skill development (i.e., a personal resource) and LMX, the quality of a supervisor-employee relationship (i.e., a social resource; Hobfoll et al., 2018). Froehlich et al. (2019) demonstrate that skill development through task variety fosters employability indirectly, and Wayne et al. (1997) argue that degree of access to job resources is affected by the quality of supervisor-employee relationships, which subsequently contributes to employees' employability enhancement.

Job characteristics (JC) theory (Hackman and Oldham, 1975) appears suitable to explaining the positive influence of supervisor leadership on employee employability. JC (Hackman and Oldham, 1975) suggests that resources such as autonomy, job feedback, task significance, and task identity influence feelings and behaviors, such as motivation. From this perspective, supervisor leadership, as a contextual resource, influences employees' work experiences (i.e., work meaningfulness and responsibility for work outcomes), which subsequently enhance employability.

According with JD-R, COR, and JC theory, Epitropaki et al. (2021) use sponsorship theory (Rosenbaum, 1979; Wayne et al., 1999), to explain the positive link between supervisors' leadership and employees' employability. The theory suggests that supervisors provide resources such as sponsoring activities and career mentoring, and they subsequently contribute to career success and thus employability. Sponsorship theory is, therefore, a suitable lens to explain the positive association between supervisor leadership and employee employability.

Excepting Bhattacharya and Neelam (2018)'s mixed-method study, a design that combines quantitative and qualitative methods (Creswell, 1999), all studies used cross-sectional, quantitative, and deductive (i.e., hypothesis testing) approaches. All also collected, at most, two waves of data, which means that they used cross-sectional, not longitudinal, designs. Ployhart and MacKenzie (2015) argue that longitudinal designs include three waves of measurement of the same variables, which provides insights into cause-and-effect (i.e., causality) among them. Since cross-sectional designs involve one-time specific measurement from a single source (e.g., a respondent), the design inherently includes validity concerns, such as common method bias and causal inference (Rindfleisch et al., 2008). We are thus unable to argue a case for causal relationships between supervisor leadership and employee employability (Setia, 2016).

Despite the advantages of quantitative, deductive hypothesis testing, including the ability to conduct surveys quickly,

quantitative research does not include in-depth analyses of individuals' characteristics (e.g., beliefs, values, and assumptions; Neuman, 2014). Due to the quantitative designs used in the studies assessed, we are unable to discover greater insights into participants' behaviors, and thus we are able only to test existing theories, instead of constructing new ones (Neuman, 2014).

The studies were conducted in various work contexts, such as educational, SMEs, healthcare, and several industries at once, and the studies' contexts also varied geographically. Some were conducted in Europe (Van der Heijden and Bakker, 2011; Van der Heijde and Van der Heijden, 2014; Bozionelos et al., 2016; Van Harten et al., 2016; Böttcher et al., 2018; Stoffers et al., 2019; Van der Heijden and Spurk, 2019; Epitropaki et al., 2021), followed closely by Asia (Chughtai, 2019; Wang et al., 2019; Yizhong et al., 2019; Gustari and Widodo, 2020; Park, 2020; Matsuo, 2022) and North America (Camps and Rodríguez, 2011). This suggests that we found support for a mostly positive relationship between supervisor leadership and employee employability in various work contexts across countries. However, from a "cross-context scholarship" (Whetten, 2009, p. 29) perspective is this an important finding. Namely, outcomes of supervisors' leadership are influenced by context effects (Oc, 2018) defined as "the set of factors surrounding a phenomenon that exert some direct or indirect influence on it (Whetten, 2009, p. 31). Namely, overall, and based on the studies assessed, we argue that results do not differ greatly among these work contexts.

Research conceptualizes supervisor leadership and employee employability in several ways. We argue that leadership influences, that is enhances, at least one dimension of employees' employability both directly and indirectly. Chughtai (2019) found contradictory results; that is, no support for a direct influence of supervisors' leadership on employees' employability. We refer to Fiedler (1964)'s contingency theory of leadership as an explanation for different results within several conceptualizations of the constructs. Fiedler (1964) suggests no universal leadership style that fits every context.

Findings suggest that major leadership concepts, such as transformational leadership, LMX, and servant leadership, and leadership concepts related to employees' support of employees' development, perceived supervisor support of employees' wellbeing and functioning, and perceived supervisor support for strength use and mentoring, are leader-support leadership concepts (Cheong et al., 2019) that have a positive and direct influence on employability. Such leadership encourages followers to transform their attitudes, values, and behaviors through empowerment so that followers achieve outstanding performance (Burns, 1978; Bass, 1985, 1999). Transformational leaders motivate employees by being role models, sharing inspired visions of a desired future, and recognizing and stimulating employees' creativity and development (e.g., stimulate self-development) (Bass, 1999), and using power and authority to focus on change (e.g., progress and development; Tucker and Russell, 2004), which subsequently enhances employability. Similar to Bass (1999), Greenleaf (1977) also focuses on transforming employees' attitudes, values, and behaviors by putting service first instead of leading, such that employees "grow healthier, wiser, freer, more autonomous and more likely themselves to become servants" (Greenleaf, 1977, p. 13). LMX represents the quality of social exchanges between a leader and follower, which associate with exchanges of job resources and subsequently influence both leaders' and followers' behaviors (Wayne et al., 1997). The quality of dyadic relationships between leaders and followers determines the extent to which leaders offer valuable resources such as training and feedback (Liao et al., 2009), which subsequently enhance employees' employability (Froehlich et al., 2019). Perceived supervisor support of employee development, wellbeing, functioning, strength use, and mentoring associates with employees' perceptions of whether supervisors care about them and value their work (Eisenberger et al., 2002, p. 565). However, the strength of this positive influence differs among leadership conceptualizations. Transformational leadership (Camps and Rodríguez, 2011), followed closely by LMX (Epitropaki et al., 2021), are the types of leadership that associate most positively with employability. Wang et al. (2019) demonstrate a positive influence of servant leadership on employability, and in contradiction, Chughtai (2019) found no support for the same relationship. Instead of assessing explicit leadership styles, the remainder of the studies assess employees' perceived supervisor support, with inconclusive results reported. Depending on the conceptualization of employees' perceived supervisor support, such support might enhance employees' employability, but to a lesser degree than major leadership concepts such as transformational leadership and LMX.

Regarding the influence of supervisor leadership on employee employability, findings suggest the importance of mediators and moderators. Mediators such as work-related flow (Van der Heijden and Bakker, 2011), job demands, skill discretion, and decision authority (e.g., job characteristics), and social exchange mechanisms, particularly perceived organizational support and team-member exchange (Yizhong et al., 2019), career planning, skill development, and networking (e.g., proactive career behaviors; Chughtai, 2019), career skills (Wang et al., 2019), and strength use (Matsuo, 2022), are crucial to explaining the influence of supervisor leadership on employee employability. Moderators such as work roles, personality (Van der Heijde and Van der Heijden, 2014), proactive personalities (Wang et al., 2019), and national contexts (Stoffers et al., 2019) influence the relationship between supervisor leadership on employee employability. This implies that in addition to several leadership concepts and mediators discussed above, the positive influence of leadership on employability differs among work roles, personalities (Van der Heijde and Van der Heijden, 2014), proactive personalities (Wang et al., 2019), and national contexts (Stoffers et al., 2019). As mechanisms, both mediators and moderators are crucial to explaining the positive influence of supervisor leadership on employee employability.

4.1. Setting an agenda for employability research

This review suggests how supervisors' leadership influences employees' employability, but more research is needed to explore this relationship further. We therefore propose multiple directions for future research, setting an agenda, from (1) theoretical perspective that investigates how other, unapplied leadership frameworks and other mechanisms (e.g., mediators and moderators) operate in the relationship; (2) from methodological

perspective, i.e., how other methodologies might be pursued in future empirical studies which might enhance the understanding of the supervisors' leadership and employees' employability which consequently represents a valuable contribution to employability literature.

To enhance theoretical knowledge within the leadership-employability relationship, findings suggest little research on the influence of other leadership concepts, such as relational (Clarke, 2018), authentic (Avolio et al., 2004) and empowering (Cheong et al., 2019) leadership, on employees' employability. Relational leadership is a social-process leadership style that stresses the role played by social interactions, which are dominated by mutual respect and trust between supervisors and employees (Clarke, 2018). Carifio (2010) argues that relational leadership includes 5 attributes—inclusive, empowering, caring, ethical, and vision and intuition—which might enhance employability. Authentic leadership (Avolio et al., 2004) is associates with followers' motivation and engagement enhancement, which subsequently foster employees' work outcomes (e.g., performance). Cheong et al. (2019) argue that empowering leadership relates closely to transformational and process leadership that provides relational support by, for example, fostering employees' autonomy. These leadership styles might operate as a job resource, enhancing employability. Therefore, we suggest further research directions by answer research questions such as: How will supervisors' leadership's (e.g., relational, authentic and empowering leadership) influence employees' employability? For instance, will supervisors' relational leadership enhance employees' employability more strongly, compared with authentic or empowering leadership? Moreover, despite the growing literature on collective forms of leadership such as shared leadership (Sweeney et al., 2019) which also may influence the employee-employer relationship in terms of employees' employability enhancement, we propose further research guided by the research question: How will shared leadership influences employees' employability?

Furthermore, the current systematic literature review uses an input-based approach of employability (Vanhercke et al., 2014), focusing on "the subjective perception held by an employee (or by his or her supervisor) about his or her possibilities in terms of competences, to obtain and maintain work" (Van der Heijden et al., 2018, p. 237), which is a limitation of this paper. Namely, according to De Lange et al. (2021), employability operationalizations can be categorized as "input- or competence-based" (p. 1) or "output- or labor market-based" (p. 1). In addition to this SLR, we therefore suggest to examine in future research how "output- or labor market-based" employability operates within the leadership-employability relationship.

We found that mechanisms such as mediators (e.g., work-related flow; Van der Heijden and Bakker, 2011) and moderators, for instance proactive personality (Wang et al., 2019), operate as mechanisms in the leadership-employability relationship. To explore further how supervisor leadership influences employee employability, we propose including other mediators and moderators as a starting point. We suggest assessing whether mediators, such as mutual respect and trust (Clarke, 2018), hope (Avolio et al., 2004), and psychological empowerment (Amundsen and Martinsen, 2015), operate in the relationship. More insights are also needed regarding whether moderators, such as a leader's gender (Cheong et al., 2019), influence the relationship. Thus, for this, we propose to answer, for instance, the research questions: Will mutual respect and trust, hope, and psychological empowerment mediate the leadership-employability relationship? And, how will leader gender moderate the leadership-employability relationship?

From a methodological perspective, cross-sectional designs dominated this review, which suggests validity concerns such as common method bias and causal inference (Rindfleisch et al., 2008). We suggest therefore that longitudinal designs with at least 3 waves of data collection, such as experiments (e.g., pretest-posttest, control-group designs) and multi-level designs, are needed to increase validity by assessing causal relationships between leadership and employability (Setia, 2016). Researchers should use multisource data (e.g., two-level data structures) among employees and immediate supervisors who work in under-researched contexts, such as healthcare and SME. Therefore, we propose to conduct research in new under-researched contexts, such as healthcare and SME, especially because outcomes of the supervisors' leadership—employability relationship are influenced by context effects (Oc, 2018).

4.2. Practical implications

This review offers several implications that inform policy, practice, and research in management and organization studies (Denyer and Tranfield, 2009), particularly related to employability and leadership. Findings demonstrate the possibilities of supervisor leadership as a job resource that enhances employability, contributing to employees' subjective career success. Employees are thus able to cope with rapidly changing jobs (Van der Heijden et al., 2018) and are less likely to develop feelings of job insecurity and panic in reaction to change because they are confident that they can pursue employment both inside or outside of the current organization if necessary (De Cuyper and De Witte, 2011). Policymakers should facilitate conditions that enhance supervisors' leadership as a job resource (e.g., contextual variable), which subsequently fosters employees' employability (i.e., a personal variable). From an organizational perspective, policymakers are able to foster supervisors' transformational leadership, for example, by facilitating training such as workshops (Bass and Avolio, 1990a), or feedback (Kelloway et al., 2000).

Supervisors should focus on the quality of LMX, being aware of the influence of shared self-identities and personal values between leaders and followers, which subsequently enhance the quality of relationships (Jackson and Johnson, 2012). Organizations should be aware of the role supervisors play as delegates of the organization, facilitating job resources such as perceived supervisor support. Supervisors should thus pay greater attention to providing job resources such as enhancing work experiences by offering informal social learning opportunities that foster employability (Froehlich et al., 2019). Among supervisors, insights suggest opportunities to enhance employability by creating a supportive work context with fit-for-purpose job resources.

This is an important finding for policymakers, researchers, and supervisors.

4.3. Limitations

This review's methodology was crucial to assessing the current state of scientific research (Snyder, 2019), but it has some limitations. This review was influenced by several types of reporting biases, such as publication, location, and language biases (Higgins et al., 2019). Higgins et al. (2019) argue that publication bias, regardless of the expertise of the researcher, derives from whether articles get published. We are unable to review research findings in unpublished articles, which might influence results. Regarding location bias, we were restricted to using the university's interface. Thus, when identifying articles that met the inclusion criteria, we were restricted by access to a limited number of databases that are connected to the university's interface. Such restrictions determine access to articles that might influence findings. Language biases also affected results. Our inclusion criteria included peer-reviewed journal articles, conference articles, books, and book chapters published in English and Dutch. Due to a lack of resources to translate languages unknown to the researchers, findings were restricted to both languages, which might have influenced findings. We did not assess the quality of the methodologies used in the articles, which is also a limitation. Thus, the quality of the methodologies affected the quality of this review. When conducting a systematic review, the number of authors affects the review's quality. Two of the three authors independently identified, selected, and reviewed the articles used during the review, but a greater number of authors might have enhanced its quality. Despite the growing literature on collective forms of leadership such as shared leadership (Sweeney et al., 2019) we focus exclusively on the individual leadership-employability relationship which is a limitation of this paper. Finally, we exclusively look at "input- or competence-based" (De Lange et al., 2021, p. 1) employability, consequently we not search for "output- or labor market-based" (p. 1) employability, which is a restriction and thus a limitation of this paper.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Author contributions

JH, AV, and JS presented the main idea of the manuscript. JH wrote the first draft of the manuscript, and AV and JS helped in the revision of the manuscript. All authors approved it for publication.

Funding

This work was supported by the Library Committee Open Universiteit—OA Fund.

Acknowledgments

We are grateful to our colleague Maartje Henderikx who helped us to conduct the preliminary bibliometrics analysis.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

References

Alimo-Metcalfe, B., and Alban-Metcalfe, R. J. (2001). The development of a new trans- formational leadership questionnaire. *J. Occup. Organ. Psychol.* 74, 1–27. doi: 10.1348/096317901167208

Amundsen, S., and Martinsen, Ø. L. (2015). Linking empowering leadership to job satisfaction, work effort, and creativity: the role of self-leadership and psychological empowerment. *J. Leadersh. Organ. Stud.* 22, 304–323. doi: 10.1177/1548051814565819

Avolio, B. J., Bass, B. M., and Jung, D. I. (1999). Re-examining the components of transformational and transactional leadership using the Multifactor Leadership Questionnaire. *J. Occup. Organ. Psychol.* 72, 441–462. doi: 10.1348/096317999166789

Avolio, B. J., Gardner, W. L., Walumbwa, F. O., Luthans, F., and May, D. R. (2004). Unlocking the mask: a look at the process by which authentic leaders impact follower attitudes and behaviors. *Leadersh. Q.* 15, 801–823. doi: 10.1016/j.leaqua.2004.09.003

Avolio, B. J., Waldman, D. A., and Yammarino, F. J.,(1991), Leading in the 1990s: the four I's of transformational leadership. *J. Eur. Ind. Train.* 15, 9–16. doi: 10.1108/03090599110143366

Baker, H. K., Kumar, S., and Pattnaik, D. (2021). Twenty-five years of the journal of corporate finance: a scientometric analysis. *J. Corp. Finance* 66, 1–24. doi: 10.1016/j.jcorpfin.2020.101572

Bakker, A. B. (2005). Flow among music teachers and their students: the crossover of peak experiences. *J. Vocat. Behav.* 66, 26–44. doi: 10.1016/j.jvb.2003.11.001

Bakker, A. B., and Demerouti, E. (2017). Job demands–resources theory: taking stock and looking forward. *J. Occup. Health Psychol.* 22, 273–285. doi: 10.1037/ocp0000056

Baptista, J., Stein, M. K., Klein, S., Watson-Manheim, M. B., and Lee, J. (2020). Digital work and organisational transformation: emergent Digital/Human work configurations in modern organisations. *J. Strateg. Inf. Sys.* 29, 1–10. doi: 10.1016/j.jsis.2020.101618

Bass, B., and Avolio, B. (1995). *Multifactor Leadership Questionnaire: Technical Report*. Redwood City, CA: Mind Garden. doi: 10.1037/t03624-000

Bass, B. M. (1985). *Leadership and Performance beyond Expectations*. New York, NY: Free Press.

Bass, B. M. (1999). Two decades of research and development in transformational leadership. *Eur. J. Work. Organ. Psychol.* 8, 9–32. doi: 10.1080/135943299398410

Bass, B. M., and Avolio, B. J. (1990a). Developing transformational leadership: 1992 and beyond. *J. Eur. Ind. Train.* 14, 21–27 doi: 10.1108/03090599010135122

Bass, B. M., and Avolio, B. J. (1990b). The implications of transactional and transformational leadership for the individual, team, and organizational development. *Res. Organ. Chang. Dev.* 4, 231–272.

Becker, G. S. (1962). Investment in human capital: a theoretical analysis. *J. Political Econ.* 70, 9–49. doi: 10.1086/258724

Bhattacharya, S., and Neelam, N. (2018). Perceived value of internship experience: a try before you leap. *High. Educ. Ski. Work-Based Learn.* 8, 376–394. doi: 10.1108/HESWBL-07-2017-0044

Blau, P. M. (2017). *Exchange and Power in Social Life, 2nd Edn*. New York, NY: Routledge. doi: 10.4324/9780203792643

Böttcher, K., Albrecht, A. G., Venz, L., and Felfe, J. (2018). Protecting older workers' employability: a survey study of the role of transformational leadership. *Ger. J. Hum. Resour. Manag.* 32, 120–148. doi: 10.1177/2397002218763001

Bozionelos, N., Kostopoulos, K., Van der Heijden, B., Rousseau, D. M., Bozionelos, G., Hoyland, T., et al. (2016). Employability and job performance as links in the relationship between mentoring receipt and career success: a study in SMEs. *Group Organ. Manag.* 41, 135–171. doi: 10.1177/1059601115617086

Broadus, R. N. (1987). Early approaches to bibliometrics. *J. Assoc. Inf. Sci. Technol.* 38, 127–129. doi: 10.1002/(SICI)1097-4571(198703)38:2andlt;127::AID-ASI6andgt;3.0.CO;2-K

Burns, J. M. (1978). *Leadership*. New York, NY, Harper and Row.

Camps, J., and Rodríguez, H. (2011). Transformational leadership, learning, and employability: effects on performance among faculty members. *Pers. Rev.* 40, 423–442. doi: 10.1108/00483481111133327

Carifio, J. (2010). Development and validation of a measure of relational leadership: implications for leadership theory and policies. *Curr. Res. Psychol.* 1, 16–28. doi: 10.3844/crpsp.2010.16.28

Cheong, M., Yammarino, F. J., Dionne, S. D., Spain, S. M., and Tsai, C. Y. (2019). A review of the effectiveness of empowering leadership. *Leadersh. Q.* 30, 34–58. doi: 10.1016/j.leaqua.2018.08.005

Chughtai, A. (2019). Servant leadership and perceived employability: proactive career behaviours as mediators. *Leadersh. Organ. Dev. J.* 40, 213–229. doi: 10.1108/LODJ-07-2018-0281

Clarke, M., and Patrickson, M. (2008). The new covenant of employability. *Empl. Relat.* 30, 121–141. doi: 10.1108/01425450810843320

Clarke, N. (2018). *Relational Leadership: Theory, Practice and Development*. New York, NY, Routledge. doi: 10.4324/9781315620435

Cobo, M., López-Herrera, A. G., Herrera-Viedma, E., and Herrera, F. (2011). An approach for detecting, quantifying, and visualizing the evolution of a research field: a practical application to the Fuzzy Sets Theory field. *J. Informetr.* 5, 146–166. doi: 10.1016/j.joi.2010.10.002

Counsell, C. (1997). Formulating questions and locating primary studies for inclusion in systematic reviews. *Ann. Med.* 127, 380–387. doi: 10.7326/0003-4819-127-5-199709010-00008

Creswell, J. W. (1999). "Mixed-method research: introduction and application," in *Handbook of Educational Policy*, ed G. J. Cizek (San Diego, CA, USA: Academic Press), 455–472. doi: 10.1016/B978-012174698-8/50045-X

Cropanzano, R., and Mitchell, M. S. (2005). Social exchange theory: an interdisciplinary review. *J. Manage* 31, 874–900. doi: 10.1177/0149206305279602

D'Aveni, R. A. (1994). *Hypercompetition. Managing the Dynamics of Strategic Maneuvring*. New York, NY: Simon and Schuster.

De Cuyper, N., and De Witte, H. (2011). The management paradox: self-rated employability and organizational commitment and performance. *Pers. Rev.* 40, 152–172. doi: 10.1108/00483481111106057

De Cuyper, N., Van der Heijden, B. I. J. M., and De Witte, H. (2011). Associations between perceived employability, employee well-being, and its contribution to organizational success: a matter of psychological contracts? *Int. J. Hum. Resour. Manag.* 22, 1486–1503. doi: 10.1080/09585192.2011.561962

De Lange, A. H., Van der Heijden, B., Van Vuuren, T., Furunes, T., De Lange, C., and Dikkers, J. (2021). Employability as we age? A systematic review of relationships between age conceptualizations and employability. *Front. Psychol.* 11, 605684. doi: 10.3389/fpsyg.2020.605684

De Vos, A., and Soens, N. (2008). Protean attitude and career success: the mediating role of self-management. *J. Vocat. Behav.* 73, 449–456. doi: 10.1016/j.jvb.2008.08.007

Denyer, D., and Tranfield, D. (2009). "Producing a systematic review," in *The Sage Handbook of Organizational Research Methods*, eds D. Buchanan and A. Bryman (London: Sage Publications Ltd.), 671–689.

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., and Lim, W. M. (2021). How to conduct a bibliometric analysis: an overview and guidelines. *J. Bus. Res.* 133, 285–296. doi: 10.1016/j.jbusres.2021.04.070

Dreher, G. F., and Ash, R. A. (1990). A comparative study of mentoring among men and women in managerial, professional, and technical positions. *J. Appl. Psychol.* 75, 539–546. doi: 10.1037/0021-9010.75.5.539

Eby, L. T., Butts, M., and Lockwood, A. (2003). Predictors of success in the era of the boundaryless career. *J. Organ. Behav.* 24, 689–708. doi: 10.1002/job.214

Eisenberger, R., Stinglhamber, F., Vandenberghe, C., Sucharski, I. L., and Rhoades, L. (2002). Perceived supervisor support: contributions to perceived organizational support and employee retention. *J. Appl. Psychol.* 87, 565–573. doi: 10.1037/0021-9010.87.3.565

Epitropaki, O., Marstand, A. F., Van der Heijden, B., Bozionelos, N., Mylonopoulos, N., Van der Heijde, C., et al. (2021). What are the career implications of "seeing eye to eye"? Examining the role of leader–member exchange (LMX) agreement on employability and career outcomes. *Pers. Psychol.* 74, 799–830. doi: 10.1111/peps.12432

Felfe, J. (2006). Validierung einer deutschen Version des "Multifactor Leadership Questionnaire "(MLQ Form 5 x Short) von Bass und Avolio (1995). *Z. Arb. Organ.* 50, 61–78. doi: 10.1026/0932-4089.50.2.61

Fiedler, F. E. (1964). "A contingency model of leadership effectiveness," in *Advances in Experimental Social Psychology*, ed L. Berkowitz (New York, NY: Academic Press), 149–190. doi: 10.1016/S0065-2601(08)60051-9

Fink, A. (2005). *Conducting Research Literature Reviews: From the Internet to Paper, 2nd Edn*. London: Sage publications Ltd.

Forrier, A., and Sels, L. (2003). The concept employability: a complex mosaic. *Int. J. Hum. Resour. Manag.* 3, 102–124. doi: 10.1504/IJHRDM.2003.002414

Froehlich, D. E., Beausaert, S. A., and Segers, M. S. (2015). Age, employability and the role of learning activities and their motivational antecedents: a conceptual model. *Int. J. Hum. Resour. Manag.* 26, 2087–2101. doi: 10.1080/09585192.2014.971846

Froehlich, D. E., Segers, M., Beausaert, S., and Kremer, M. (2019). On the relation between task-variety, social informal learning, and employability. *Vocat. Learn.* 12, 113–127. doi: 10.1007/s12186-018-9212-4

Fugate, M., Van der Heijden, B., De Vos, A., Forrier, A., and De Cuyper, N. (2021). Is what's past prologue? A review and agenda for contemporary employability research. *Acad. Manag. Ann.* 15, 266–298. doi: 10.5465/annals.2018.0171

Garavan, T. N. (1999). Employability, the emerging new deal? *J. Eur. Ind. Train.* 23, 1–5. doi: 10.1108/jeit.1999.00323aaa.001

Graen, G. B., and Uhl-Bien, M. (1995). Relationship-based approach to leadership: development of leader-member exchange (LMX) theory of leadership over 25 years: applying a multi-level multi-domain perspective. *Leadersh. Q.* 6, 219–247. doi: 10.1016/1048-9843(95)90036-5

Grant, M. J., and Booth, A. (2009). A typology of reviews: an analysis of 14 review types and associated methodologies. *Health Info. Libr. J.* 26, 91–108. doi: 10.1111/j.1471-1842.2009.00848.x

Gray, C., and Malins, J. (2004). *Visualizing Research: A Guide to the Research Process in Art and Design*. London: Routledge.

Greenleaf, R. K. (1977). *Servant Leadership: A Journey into the Nature of Legitimate Power and Greatness*. New York, NY: Paulist Press.

Gustari, I., and Widodo, W. (2020). Investigating the mediation effect of employability and innovative behavior on job involvement: perspective of transformational leadership. *J. Xian Univ. Archit. Technol.* 8, 2451–2460.

Hackman, J. R., and Oldham, G. R. (1975). Development of the job diagnostic survey. *J. Appl. Psychol.* 60, 159–170. doi: 10.1037/h0076546

Hartog, D. N., Van Muijen, J. J., and Koopman, P. L. (1997). Transactional versus transformational leadership: an analysis of the MLQ. *J. Occup. Organ Psychol.* 70, 19–34. doi: 10.1111/j.2044-8325.1997.tb00628.x

Henderikx, M., and Stoffers, J. (2022). An exploratory literature study into digital transformation and leadership: toward future-proof middle managers. *Sustainability* 14, 1–18. doi: 10.3390/su14020687

Higgins, J. P. T., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M.J., et al. (eds.). (2019). *Cochrane Handbook for Systematic Reviews of Interventions. 2nd Edn*. Hoboken , NJ, USA: John Wiley and Sons Ltd. doi: 10.1002/9781119536604

Hobfoll, S. E. (1989). Conservation of resources: a new attempt at conceptualizing stress. *Am. Psychol.* 44, 513–524. doi: 10.1037/0003-066X.44.3.513

Hobfoll, S. E., Halbesleben, J. R. B., Neveu, J., and Westman, M. (2018). Conservation of resources in the organizational context: the reality of resources and their consequences. *Annu. Rev. Organ. Psychol. Organ. Behav.* 5, 103–128. doi: 10.1146/annurev-orgpsych-032117-104640

Houben, E., De Cuyper, N., Kyndt, E., and Forrier, A. (2019). Learning to be employable or being employable to learn: the reciprocal relation between perceived employability and work-related learning. *J. Career Dev.* 48, 1–16. doi: 10.1177/0894845319867431

Jackson, E. M., and Johnson, R. E. (2012). When opposites do (and do not) attract: interplay of leader and follower self-identities and its consequences for leader-member exchange. *Leadersh. Q.* 23, 488–501. doi: 10.1016/j.leaqua.2011.12.003

Kazdin, A. E. (2007). Mediators and mechanisms of change in psychotherapy research. *Annu. Rev. Clin. Psychol.* 3, 1–27. doi: 10.1146/annurev.clinpsy.3.022806.091432

Keenan, E. M., and Mostert, K. (2013). Perceived organizational support for strengths use: the factorial validity and reliability of a new scale in the banking industry. *SA J. Ind. Psychol.* 39, 1–12. doi: 10.4102/sajip.v39i1.1052

Kelloway, E. K., Barling, J., and Helleur, J. (2000). Enhancing transformational leadership: the roles of training and feedback. *Leadersh. Organ. Dev. J.* 21, 145–149. doi: 10.1108/01437730010325022

Knies, E., and Leisink, P. (2014). Linking people management and extra-role behaviour: results of a longitudinal study. *Hum. Resour. Man. J.* 24, 57–76. doi: 10.1111/1748-8583.12023

Kram, K. E., and Isabella, L. A. (1985). Mentoring alternatives: the role of peer relationships in career development. *Acad. Manage. J.* 28, 110–132. doi: 10.2307/256064

Le Blanc, P. M., Peeters, M. C. W., Van der Heijden, B. I. J. M., and Van Zyl, L. E. (2019). To leave or not to leave? A multi-sample study on individual, job-related, and organizational antecedents of employability and retirement intentions. *Front. Psychol.* 10, 2057. doi: 10.3389/fpsyg.2019.02057

Liao, H., Tang, M., Luo, L., Li, C., Chiclana, F., and Zeng, X. J. (2018). A bibliometric analysis and visualization of medical Big Data research. *Sustainability* 10, 1–18. doi: 10.3390/su10010166

Liao, H., Toya, K., Lepak, D. P., and Hong, Y. (2009). Do they see eye to eye? Management and employee perspectives of high-performance work systems and influence processes on service quality. *J. Appl. Psychol.* 94, 371–391. doi: 10.1037/a0013504

Liden, R. C., and Maslyn, J. M. (1998). Multidimensionality of leader-member exchange: an empirical assessment through scale development. *J. Manage.* 24, 43–72. doi: 10.1016/S0149-2063(99)80053-1

Liden, R. C., Sparrowe, R. T., and Wayne, S. J. (1997). "Leader-member exchange theory: the past and potential for the future," in *Research in Personnel and Human Resource Management*, ed G. R. Ferris (Oxford: JAI Press), 47–119.

Liden, R. C., Wayne, S. J., Meuser, J. D., Hu, J., Wu, J., and Liao, C. (2015). Servant leadership: validation of a short form of SL-28. *Leadersh. Q.* 26, 254–269. doi: 10.1016/j.leaqua.2014.12.002

Manuti, A., Van der Heijden, B., Kruyen, P., De Vos, A., Zaharie, M., and Lo Presti, A. (2022). How normal is the new normal? individual and organizational implications of the covid-19 pandemic. *Front. Psychol.* 13, 931236. doi: 10.3389/fpsyg.2022.931236

Matsuo, M. (2022). The role of supervisor support for strengths use in promoting perceived employability and career satisfaction. *Pers. Rev.* 51, 1587–1603. doi: 10.1108/PR-01-2021-0026

Miglianico, M., Dubreuil, P., Miquelon, P., Bakker, B., and Martin-Krumm, C. (2020). Strength use in the workplace: a literature review. *J. Happiness. Stud.* 21, 737–764. doi: 10.1007/s10902-019-00095-w

Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., and, PRISMA Group. (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med.* 6, e1000097. doi: 10.1371/journal.pmed.1000097

Nauta, A., Van Vianen, A., Van der Heijden, B., Van Kam, K., and Willemsen, M. (2009). Understanding the factors that promote employability orientation: the impact of employability culture, career satisfaction, and role breadth self-efficacy. *J. Occup. Organ. Psychol.* 82, 233–251. doi: 10.1348/096317908X320147

Neuman, W. L. (2014). *Social Research Methods: Qualitative and Quantitative Approaches*. *7th Edn*. Harlow: Pearson Education Limited.

Oc, B. (2018). Contextual leadership: a systematic review of how contextual factors shape leadership and its outcomes. *Leadersh. Q.* 29, 218–235. doi: 10.1016/j.leaqua.2017.12.004

OECD (2019). "Promoting employability throughout working lives," in *Working Better with Age* (Paris, France: OECD Publishing), 64–79. doi: 10.1787/a33dc526-en

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., et al. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *Syst. Rev.* 10, 1–11. doi: 10.1186/s13643-021-01626-4

Park, Y. (2020). The effects of leader-member exchange and employee learning on perceived employability. *Int. J. Train. Dev.* 24, 105–117. doi: 10.1111/ijtd.12174

Petticrew, M. (2001). Systematic reviews from astronomy to zoology: myths and misconceptions. *BMJ-Brit. Med. J.* 322, 98–101. doi: 10.1136/bmj.322.7278.98

Phulwani, P., Kumar, D., and Goyal, P. (2020). A systematic literature review and bibliometric analysis of recycling behavior. *J. Glob. Mark.* 33, 354–376. doi: 10.1080/08911762.2020.1765444

Ployhart, R. E., and MacKenzie, W. I. Jr. (2015). "'Two waves of measurement do not a longitudinal study make," in *More Statistical and Methodological Myths and Urban Legends*, eds C. E. Lance and R. J. Vandenberg (New York, NY: Routledge/Taylor and Francis Group), 85–99.

Podsakoff, P. M., MacKenzie, S. B., Bachrach, D. G., and Podsakoff, N. P. (2005). The influence of management journals in the 1980s and 1990s. *Strateg. Manag. J.* 26, 473–488. doi: 10.1002/smj.454

Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., and Fetter, R. (1990). Transformational leader behaviors and their effect on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *Leadersh. Q.* 1, 107–142. doi: 10.1016/1048-9843(90)90009-7

Rindfleisch, A., Malter, A. J., Ganesan, S., and Moorman, C. (2008). Cross-sectional versus longitudinal survey research: concepts, findings, and guidelines. *J. Mark. Res.* 45, 261–279. doi: 10.1509/jmkr.45.3.261

Rosenbaum, J. E. (1979). Tournament mobility: career patterns in a corporation. *Adm. Sci. Q.* 24, 220–241. doi: 10.2307/2392495

Rothwell, A., and Arnold, J. (2007). Self-perceived employability: development and validation of a scale. *Pers. Rev.* 36, 23–41. doi: 10.1108/00483480710716704

Rousseau, D. M. (2004). Psychological contracts in the workplace: understanding the ties that motivate. *Acad. Manag. Exec.* 18, 120–127. doi: 10.5465/ame.2004.12689213

Rudolph, C., Allan, B., Clark, M., Hertel, G., Hirschi, A., Kunze, F., et al. (2020). Pandemics: implications for research and practice in industrial and organizational psychology. *Ind. Organ. Psychol.* 14, 1–35. doi: 10.31234/osf.io/k8us2

Saunders, M., Lewis, P., and Thornhill, A. (2012). *Research Methods for Business Students. 6th Edn*. Harlow: Pearson Education Ltd.

Scandura, T. A., and Graen, G. B. (1984). Moderating effects of initial leader-member exchange status on the effects of a leadership intervention. *J. Appl. Psychol.* 69, 428–436. doi: 10.1037/0021-9010.69.3.428

Seligman, M. E. P. (2019). Positive psychology: a personal history. *Annu. Rev. Clin. Psychol.* 15, 1–23. doi: 10.1146/annurev-clinpsy-050718-095653

Setia, M. S. (2016). Methodology series module 3: cross-sectional studies. *Indian J. Dermatol.* 61, 261–264. doi: 10.4103/0019-5154.182410

Snyder, H. (2019). Literature review as a research methodology: an overview and guidelines. *J. Bus. Res.* 104, 333–339. doi: 10.1016/j.jbusres.2019.07.039

Stoffers, J., Hendrikx, K., Habets, O., and van der Heijden, B. (2019). Employability and innovative work behaviours in SMEs in a Euroregion: a cross-national comparison between Belgium and the Netherlands. *Pers. Rev.* 49, 167–187. doi: 10.1108/PR-10-2018-0387

Struzyna, J., and Marzec, I. (2017). Provided leadership and selected outcomes of trainings in public organizations. *Edukacja Ekonomistów i Menedzerów* 46, 39–54. doi: 10.5604/01.3001.0011.6465

Sweeney, A., Higgs, M., and Clarke, N. (2019). Shared leadership in commercial organizations: a systematic review of definitions, theoretical frameworks and organizational outcomes. *Int. J. Manag. Rev.* 21, 115–136. doi: 10.1111/ijmr.12181

Thijssen, J. G. L., van der Heijden, B., and Rocco, T. S. (2008). Toward the employability-link model: current employment transition to future employment perspectives. *Hum. Resour. Dev. Rev.* 7, 165–183. doi: 10.1177/1534484308314955

Thijssen, J. G. L., and Walter, E. (2006). Obsoletie van oudere personeelsleden (obsolescence of older workers). *Tijdschrift voor HRM*. 9, 45–60.

Tucker, B. A., and Russell, R. F. (2004). The influence of the transformational leader. *J. Leadersh. Organ. Stud.* 10, 103–111. doi: 10.1177/107179190401000408

Uhl-Bien, M. (2006). Relational leadership theory: exploring the social processes of leadership and organizing. *Leadersh. Q.* 17, 654–676. doi: 10.1016/j.leaqua.2006.10.007

Van Dam, K. (2004). Antecedents and consequences of employability orientation. *Eur. J. Work. Organ. Psychol.* 13, 29–51. doi: 10.1080/13594320344000237

Van der Heijde, C. M., and Van der Heijden, B. I. J. M. (2006). A competence-based and multi-dimensional operationalization and measurement of employability. *Hum. Resour. Manag.* 45, 449–476. doi: 10.1002/hrm.20119

Van der Heijde, C. M., and Van der Heijden, B. I. J. M. (2014). "Employability and social innovation: the importance of and interplay between transformational leadership and personality," in *Human Resource Management, Social Innovation and Technology (Advanced Series in Management, Volume 14)*, eds T. Bondarouk and M. R. Olivas-Luján (Bingley: Emerald Group Publishing Limited), 55–72. doi: 10.1108/S1877-636120140000014009

Van der Heijde, C. M., Van der Heijden, B. I. J. M., Scholarios, D., Bozionelos, N., Mikkelsen, A., Epitropaki, O., et al. (2018). Learning climate perceptions as a determinant of employability: an empirical study among European ICT professionals. *Front. Psychol.* 9, 2471. doi: 10.3389/fpsyg.2018.02471

Van der Heijden, B., Boon, J., Van der Klink, M., and Meijs, E. (2009). Employability enhancement through formal and informal learning: an empirical study among Dutch non-academic university staff members. *Int. J. Train. Dev.* 13, 19–37. doi: 10.1111/j.1468-2419.2008.00313.x

Van der Heijden, B. I. J. M., and Bakker, A. B. (2011). Toward a mediation model of employability enhancement: a study of employee-supervisor pairs in the building sector. *Career Dev. Q.* 59, 232–248. doi: 10.1002/j.2161-0045.2011.tb00066.x

Van der Heijden, B. I. J. M., Notelaers, G., Peters, P., Stoffers, J. M. M., De Lange, A. H., Froehlich, D. E., et al. (2018). Development and validation of

the short-form employability five-factor instrument. *J. Vocat. Behav.* 106, 236–248. doi: 10.1016/j.jvb.2018.02.003

Van der Heijden, B. I. J. M., and Spurk, D. (2019). Moderating role of LMX and proactive coping in the relationship between learning value of the job and employability enhancement among academic staff employees. *Career Dev. Int.* 24, 163–186. doi: 10.1108/CDI-09-2018-0246

Van Eck, N. J., and Waltman, L. (2014). "Visualizing bibliometric networks," in *Measuring Scholarly Impact: Methods and Practice*, Y. eds Ding, R. Rousseau, and D. Wolfram (Switzerland: Springer International Publishing), 285–320. doi: 10.1007/978-3-319-10377-8_13

Van Harten, J., De Cuyper, N., Guest, D., Fugate, M., Knies, E., and Forrier, A. (2020). Introduction to special issue on HRM and employability: mutual gains or conflicting outcomes? *Int. J. Hum. Resour. Manag.* 31, 1095–1105. doi: 10.1080/09585192.2020.1740457

Van Harten, J., Knies, E., and Leisink, P. (2016). Employer's investments in hospital workers' employability and employment opportunities. *Pers. Rev.* 45, 84–102. doi: 10.1108/PR-05-2014-0115

Van Woerkom, M., Oerlemans, W., and Bakker, A. B. (2016). Strengths use and work engagement: a weekly diary study. *Eur. J. Work Organ. Psychol.* 25, 384–397. doi: 10.1080/1359432X.2015.1089862

Vanhercke, D., De Cuyper, N., Peeters, E., and De Witte, H. (2014). Defining perceived employability: a psychological approach. *Pers. Rev.* 43, 592–605. doi: 10.1108/PR-07-2012-0110

Vermeeren, B., and Van der Heijden, B. (2022). Employability in the public sector: the impact of individual and organizational determinants. *Front. Psychol.* 13, 1–16. doi: 10.3389/fpsyg.2022.1041618

Veth, K. N., Van der Heijden, B. I. J. M., Korzilius, H. P. L. M., De Lange, A. H., and Emans, B. J. M. (2018). Bridge over an aging population: examining longitudinal relations among human resource management, social support, and employee outcomes among bridge workers. *Front. Psychol.* 9, 574. doi: 10.3389/fpsyg.2018.00574

Wang, Z., Yu, K., Xi, R., and Zhang, X. (2019). Servant leadership and career success: the effects of career skills and proactive personality. *Career Dev. Int.* 24, 717–730. doi: 10.1108/CDI-03-2019-0088

Wayne, S. J., Liden, R. C., Kraimer, M. L., and Graf, I. K. (1999). The role of human capital, motivation and supervisor sponsorship in predicting career success. *J. Organ. Behav.* 20, 577–595. doi: 10.1002/(SICI)1099-1379(199909)20:5andlt;577::AID-JOB958andgt;3.0.CO;2-0

Wayne, S. J., Shore, L. M., and Liden, R. C. (1997). Perceived organizational support and leader-member exchange: a social exchange perspective. *Acad. Manag. J.* 40, 82–111. doi: 10.2307/257021

Whetten, D. (2009). An examination of the interface between conect and theory to the study of chinese organizations. *Manag. Organ. Rev.* 5, 29–56. doi: 10.1111/j.1740-8784.2008.00132.x

Wittekind, A., Raeder, S., and Grote, G. (2010). A longitudinal study of determinants of perceived employability. *J. Organ. Behav.* 31, 566–586. doi: 10.1002/job.646

Wohlin, C. (2014). "Guidelines for snowballing in systematic literature studies and a replication in software engineering," in *Proceedings of the 18th International Conference on Evaluation and Assessment in Software Engineering; 2014 May 13-14*, ed M. Shepperd (London, England; New York, NY: Association for Computing Machinery), 1–10. doi: 10.1145/2601248.2601268

Yizhong, X., Baranchenko, Y., Lin, Z., Lau, C. K., and Ma, J. (2019). The influences of transformational leadership on employee employability: evidence from China. *Empl. Relat.* 41, 101–118. doi: 10.1108/ER-02-2018-0052

Zupic, I., and Cater, T. (2015). Bibliometric methods in management and organization. *Organ. Res. Methods.* 18, 429–472. doi: 10.1177/1094428114562629

10.3389/fpsyg.2023.1092865

Appendix

TABLE A1 Full list of searched major research databases using university's interface—January 2022 to February 2022.

- Academic Search Premier (EBSCO)
- ACM Digital Library
- AIS (Association for Information Systems)
- APA PsycArticles (EBSCO)
- APA PsycInfo (EBSCO)
- Ars Aequi
- Beeld en Geluid op school
- Business Source Complete (EBSCO)
- Cambridge Journals
- CINAHL (EBSCO)
- Cochrane Library
- Company.info
- Delpher
- DOAJ – Directory of Open Access Journals
- EBSCO Host (EBSCO)
- Electronic Journals Service (EBSCO)
- Embase on OvidSP
- Emerald Insight [management]
- ERIC EBSCO
- Europeana
- Europeana Newspapers
- Factset
- Google Scholar
- Greenfile (EBSCO)
- HeinOnline
- IEEE Digital Library
- Jesuit Online Bibliography
- JSTOR
- Kluwer Navigator
- Lecture Notes in Computer Science
- Legal Intelligence
- Library Information & Technology Abstracts (EBSCO)
- LibSearch: discovery tool UM
- LiteRom (Nederlandstalig)
- Max Planck Encyclopedias of International Law (MPIL)
- Medline (EBSCO)
- Wiley Online Library
- Worldcat
- MUSE Humanities Collection
- NARCIS
- Nature
- NDFR (Nederlandse Documentatie Fiscaal Recht)
- Nederlandse historische parlementaire documenten
- Nexis Uni (Lexis Nexis)
- NLFiscaal
- OA journal browser
- Open Book Publishers
- OpMaat Premium Plus
- Overheid.nl
- Oxford Historical Treaties (OHT)
- Oxford International Organizations Database (OXIO)
- Oxford Reports on International Law (ORIL)
- Oxford Scholarly Authorities on International Law (OSAIL)
- Oxford University Press
- Psychology and Behavioral Sciences Collection (EBSCO)
- Pubmed
- Regional Business News (EBSCO)
- Sage Business Cases
- Sage Journals Online
- Science
- Sciencedirect (Elsevier)
- SpringerLink
- Strada Lex
- Taylor & Francis Online
- UN-iLibrary
- Van Dale online woordenboeken
- Web of Science
- Westlaw UK
- WestlawNext

frontiers | Frontiers in Psychology

TYPE Original Research
PUBLISHED 05 June 2023
DOI 10.3389/fpsyg.2023.1162790

OPEN ACCESS

EDITED BY
Thomas Van Waeyenberg,
Open University of the Netherlands, Netherlands

REVIEWED BY
Dina Metwally,
Helwan University, Egypt
Teresa Pozo-Rico,
University of Alicante, Spain

*CORRESPONDENCE
Yubo Hou
houyubo@pku.edu.cn

RECEIVED 10 February 2023
ACCEPTED 09 May 2023
PUBLISHED 05 June 2023

CITATION
Cao Y, Zhou K, Wang Y, Hou Y and Miao R (2023) The influence of leader humor on employee creativity: from the perspective of employee voice. *Front. Psychol.* 14:1162790. doi: 10.3389/fpsyg.2023.1162790

The influence of leader humor on employee creativity: from the perspective of employee voice

Yi Cao[1], Keqiucheng Zhou[1], Yijiang Wang[2], Yubo Hou[1]* and Rentao Miao[3]

[1]School of Psychological and Cognitive Sciences, Beijing Key Laboratory of Behavior and Mental Health, Peking University, Beijing, China, [2]Renmin University of China, Beijing, China, [3]Capital University of Economics and Business, Beijing, China

Creativity is a primary factor in driving transformational change. This study explored the impact of leader humor on employee creativity (incremental and radical creativity) from the perspective of employee voice. Data were collected from 812 Chinese employees through multipoint surveys. Through the surveys, we found that (1) leader humor has a significant positive effect on employee incremental and radical creativity; (2) promotive/prohibitive voice mediates the relationship between leader humor and employee incremental/radical creativity separately; (3) contradictory thinking moderates the effect of leader humor on prohibitive voice and further moderates the indirect effect of leader humor on radical creativity; and (4) the moderated mediation model mainly applies to state-owned enterprises rather than private-owned enterprises. The theoretical and practical implications of these findings are discussed.

KEYWORDS

contradiction thinking, creativity, employee voice, leader humor, ownership

Introduction

In recent years, industries have struggled in economically uncertain times, especially due to the COVID pandemic and trade war between China and the United States, and some enterprises are on the verge of bankruptcy. However, some enterprises driven by creativity have shown strong adaptability and even achieved tremendous development during this period. This is because creativity is the key to the survival and development of enterprises (Hughes et al., 2018). Employee creativity is the micro-foundation of enterprise creativity (Liu et al., 2017) and is the key element leading to innovation (Gilson and Madjar, 2011). Thus, stimulating employee creativity in uncertain environments has become a priority for firms and leaders.

A substantial body of literature has explored the origins of employee creativity from the perspective of leadership and found some important results (Wang and Rode, 2010; Zhang and Bartol, 2010; Rego et al., 2012; Qu et al., 2015; Byun et al., 2016; Chen and Hou, 2016; Ma and Jiang, 2018; Cai et al., 2019; Koh et al., 2019; Younas et al., 2020; Liang et al., 2021). However, humor, as an important component of successful leadership (Yam et al., 2018) with the ability to produce a range of positive outcomes in the workplace (Karakowsky et al., 2020), has not received enough attention. Recent research has found that employees prefer humorous leaders over ethical leaders (Yam et al., 2019) since humorous leaders always motivate their subordinates and create good, lasting memories (Cooper et al., 2018). Given that it is important to explore the impact of leader humor on employee creativity, some studies have been conducted in this area of research (Lee, 2015; Li et al., 2019; Hu, 2020; Peng et al., 2020; Yang and Yang, 2021). These studies, however, have only regarded

creativity as a single concept, which overlooks its inherent complexity, causing the effect and the mechanism of leader humor influencing employee creativity to be ambiguous. In previous studies, creativity was conceptualized and operationalized as a unidimensional construct, often defined as the creation of new and applicable ideas (Amabile et al., 1996; Zhou and George, 2001). However, recent studies have increasingly discussed distinct types of creativity, ranging from minor adaptations to radical breakthroughs (Malik and Choi, 2019). Madjar et al. (2011) characterized creativity as incremental and radical. Incremental creativity refers to small changes and modifications to existing practices in the organization, focusing on the exploitation of ideas, whereas radical creativity involves new ideas that are completely different from the existing practices of the organization, emphasizing the exploration of ideas (Litchfield, 2008; Madjar et al., 2011). Recently, the literature has acknowledged the distinction between radical and incremental creativity (Xu and Jiang, 2018; Malik and Choi, 2019; Acemoglu and Akcigit, 2022). Both types of creativity are key drivers of organizational performance and are equally important for organizational development (Gilson and Madjar, 2011). Nonetheless, previous studies did not investigate or further distinguish the mechanism by which leader humor influences these two types of creativity.

The present study proposes that the mechanism between leader humor and the two types of creativity can be explained from the perspective of employee voice. Employee voice is an organizational citizenship behavior that is both positive and challenging (Lepine and Van Dyne, 1998). This behavior involves questioning and challenging the current state of the organization and even jeopardizing the employee's relationship with leaders with certain interpersonal risks (Liu and Zhu, 2010). However, according to the Benign Violation Theory (BVT), leader humor may promote employee voice (BVT; McGraw, 2010). BVT indicates that the display of humor often necessitates a benign norm violation (Yam et al., 2018). In other words, it explains how humor turns threatening or challenging violations into benign violations (Cheng et al., 2021). In light of this, leader humor may reduce the risk of employee voice and gives employees the courage to express constructive opinions on issues.

Furthermore, although some studies have highlighted a significant and positive association between voice behavior and creativity (Ng, 2012; Soomro and Memon, 2020), the type of creativity exhibited may vary with employee voice. Liang et al. (2012) classified employee voice into promotive and prohibitive voices; the former comprises employees' expressions of new ideas or suggestions for *improving* the overall functioning of the organization, and the latter comprises employees' expressions of concern about work practices that are harmful to *reforming* the overall functioning of the organization. Therefore, although the two types of voices both challenge the status quo of the organization, they have different functions and purposes (Liang et al., 2012), which may be associated with different types of creativity.

In addition, according to the incongruity theory, humor emerges when certain concepts or ideas are inconsistent with their true expressions (Attardo, 1997). As a result, the emergence of humor often involves a contradiction, and thus, individuals' contradictory thinking may become the premise of experiencing humor. Therefore, although leader humor may promote employee voice, the relationship also depends on employees' contradictory thinking. Moreover, corporate ownership is the major institutional factor in China (Liu et al., 2017), as employee treatment varies with ownership. While private-owned enterprises (POEs) are more market-oriented and have more open work atmospheres, which encourage employees to provide suggestions or develop new ideas, state-owned enterprises (SOEs) have clear hierarchical boundaries, stricter divisions of labor, and a more serious work atmosphere, which is not conducive to employee voice. Thus, ownership may further interact with employees' contradictory thinking to moderate the impact of leadership humor on employee voice.

In summary, the present study examined the influence of leader humor on different types of employee creativity and how the effects may be mediated by types of employee voice and moderated by employees' contradictory thinking and corporate ownership.

Hypothesis development

Leader humor and employee creativity

Leader humor is social behavior performed by leaders to delight employees (Cooper et al., 2018). Substantial studies have found that leaders with a sense of humor produce a series of positive results on employees' attitudes and behaviors, such as obtaining greater support from them (Mao et al., 2017), minimizing their withdrawal behaviors (Mesmer-magnus et al., 2012), promoting their organizational citizenship behaviors (Cooper et al., 2018), and enhancing their perceived wellbeing, work commitment, and innovation (Arendt, 2006; Ünal, 2014). In light of previous research, the current study proposes that leader humor promotes employee creativity.

First, according to the broaden-and-build theory, compared to negative affect, positive affect broadens the momentary thought-action repertoire and builds lasting personal resources, which prompts individuals to discard time-tested or automatic behavioral scripts and to pursue novel, creative, and often unscripted paths of thought and action (Fredrickson, 1998). In this respect, the expression of positive change through leader humor may stimulate creativity. Second, humorous leaders have the ability to foster a sense of closeness among employees, eliminating hierarchical differences between them (Romero and Cruthirds, 2006; Kim et al., 2016) and creating a more open communication environment (Mao et al., 2017). It thus provides the foundation for employees to express their creative ideas freely. Third, leader humor conveys the leader's trust and support for employees, which helps form a high-quality leader–subordinate relationship. Based on the principle of reciprocity, to maintain this relationship, employees are more likely to work hard to improve or change their workflow in innovative ways (Zhang and Su, 2020). Therefore, we propose the following:

H1a: Leader humor is positively correlated with incremental creativity.

H1b: Leader humor is positively correlated with radical creativity.

The mediating role of employee voice

Based on the BVT (McGraw, 2010), humor involves violations of norms (Yam et al., 2018), which tells people how to evaluate the challenging contexts they face, i.e., the extent to which they perceive them as relatively benign rather than threatening. Cheng et al. (2019, 2021) demonstrated that humor may give individuals a sense of control in challenging situations (e.g., stressful situations), which can help them manage challenges. Although voice behavior is challenging for employees in the workplace, leader humor signals to employees that it is socially acceptable. Therefore, leader humor may reduce the risk of employee voice and give employees the courage to express constructive opinions on issues.

Although the two types of voices challenge the status quo and are aimed at benefiting organizations (Liang et al., 2012), they may lead to different levels of creativity regarding the targets of promotive (e.g., improving the organization) and prohibitive (e.g., reforming the organization) voices. A promotive voice is generally considered more broadly applicable and is easily acceptable by organizations and leaders (Morrison, 2014) because it is ultimately expected to benefit the whole organization (Liang et al., 2012). However, a prohibitive voice is generally riskier and more challenging, thereby inducing conflict and negative emotions among coworkers and supervisors (Liang et al., 2012). As a result, a prohibitive voice is likely to generate resistance from organizations and leaders (Burris, 2012).

In this respect, a promotive voice represents small changes and modifications to existing practices and thus tends to be more practical and exploitative. Moreover, compared to prohibitive voice, promotive voice reflects employees' recognition of the existing system. Therefore, a promotive voice aims to continuously improve and exploit the existing system rather than make explorative changes (Lin and Johnson, 2015). A prohibitive voice is associated with the potential problems of the organization (Miao et al., 2020) and requires employees to "think outside the box." As a result, a prohibitive voice is explorative and often opposed to the organization's existing system (Morrison, 2014).

Moreover, employees who propose a prohibitive voice tend to take risks or challenge the status of the organization, and thus, they are not bound by pressure from leaders. The absence of external pressure results in no or low restrictions on the creative behavior these employees exhibit. Exploitation conforms to the characteristics of incremental creativity, while exploration combines the characteristics of radical creativity (March, 1991; Benner, 2003). Given that, we propose the following:

H2a: A promotive voice mediates the relationship between leader humor and incremental creativity.
H2b: A prohibitive voice mediates the relationship between leader humor and radical creativity.

The moderating effect of contradictory thinking

The incongruity theory claims that humor is often related to inconsistency (Attardo, 1997), which shows that humor is often accompanied by contradiction. People with high levels of contradictory thinking believe that contradiction is a natural, inherent, and inevitable feature of virtually all existence (Spencer-Rodgers, 2017), and thus, they are more likely to be aware of inconsistencies in the surrounding environment. In contrast, people with low levels of contradictory thinking are less sensitive to inconsistency. As a result, not all employees can perceive the humor expressed by leaders. Only employees with high levels of contradictory thinking can perceive the inconsistency embedded in humorous language and behaviors and thus better understand leader humor. Given that, we propose the following:

H3a: Contradictory thinking moderates the relationship between leader humor and promotive voice; leader humor has a stronger effect on the promotive voice of employees with high levels of contradictory thinking than on the promotive voice of employees with low levels of contradictory thinking.
H3b: Contradictory thinking moderates the relationship between leader humor and prohibitive voice; leader humor has a stronger effect on the prohibitive voice of employees with high levels of contradictory thinking on the prohibitive voice of employees with low levels of contradictory thinking.

Moreover, this moderating model may be further influenced by the mediating role of employee voice. Specifically, employee voice mediates the relationship between leader humor and employee creativity; however, the effect size of this mediation depends on employees' contradictory thinking. Since leader humor has a strong impact on the voice behavior of employees with high levels of contradictory thinking, the mediating effect of employee voice on the relationship between leadership humor and creativity is expected to be stronger. In contrast, when employees have low levels of contradictory thinking, leadership humor has a weak influence on employee voice, and thus, the mediating effect of employee voice in the relationship between leadership humor and employee creativity is expected to be weaker.

H4a: Contradictory thinking has a moderating effect on the mediating role of promotive voice in the relationship between leader humor and incremental creativity (*H2a*). Leader humor has a stronger indirect effect on the incremental creativity of employees with high contradictory thinking than on the incremental creativity of employees with low contradictory thinking.
H4b: Contradictory thinking has a moderating effect on the mediating role of a prohibitive voice in the relationship between leader humor and radical creativity (*H2b*). Leader humor has a stronger indirect effect on the radical creativity of employees with high levels of contradictory thinking than the radical creativity of employees with low levels of contradictory thinking.

The moderating role of corporate ownership

Based on H4a and H4b, the present study further proposes that the moderated mediation effect of contradictory thinking may also be influenced by corporate ownership. Ownership is

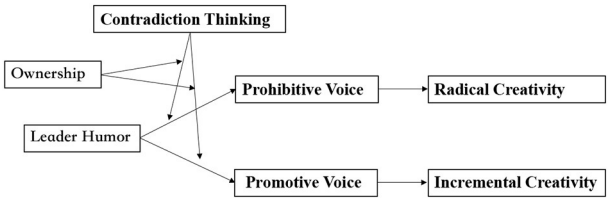


FIGURE 1
Research framework.

a common characteristic of Chinese enterprises (Peng and Luo, 2000). Although Chinese SOEs are market-oriented, they still retain traditional management styles. For example, many SOEs still adopt a bureaucratic management system with hierarchical and centralized characteristics, which is not conducive to encouraging employee voice. In contrast, POEs tend to be highly market-oriented and have a flatter management structure and a freer working atmosphere, thus encouraging employee voice. Recently, some POEs have established "suggestion boards" on their intranet systems to encourage employees to make suggestions for improving the enterprise. Thus, hypotheses 4a and 4b may not be supported in the case of SOEs.

H5a: Ownership moderates *H4a*; the moderating effect of contradictory thinking on the mediating role of a promotive voice in the relationship between leader humor and incremental creativity is stronger in POEs than in SOEs.
H5b: Ownership moderates *H4b*; the moderating effect of contradictory thinking on the mediating role of a prohibitive voice in the relationship between leader humor and radical creativity is stronger in POEs than in SOEs.

The research framework is illustrated in Figure 1.

Method

Participants and procedure

A total of 1,000 full-time employees were invited to participate in the survey. The participants did not know the research framework; they were only informed that the data would be used for statistical analysis rather than for other purposes. In addition, the participants included in the sample needed to have daily interactions with their direct supervisors. All data were collected at three time points. At time point 1, 1,000 participants rated their leader's humor, as well as their contradictory thinking and demographic information, and 937 valid questionnaires were collected. At time point 2, 937 participants rated their promotive and prohibitive voices in their workplace, and 881 valid questionnaires were collected. At time point 3, 881 participants were asked to rate their radical and incremental creativity, and 832 valid questionnaires were collected. After excluding unqualified samples (from those who failed to pass the quality check questions), 812 valid questionnaires were obtained.

Among the participants, 427 (52.6%) of them were from SOEs, including 150 men (35.1%) and 277 women (64.9%), with an average age of 31.37 years (SD = 8.319); 164 (38.4%) of them were unmarried, and 263 (61.6%) were married; 103 (24.1%) of participants had a senior high school or lower level of education, 124 (29.0%) had a junior college education, and 200 (46.9%) had an undergraduate or higher level of education. The average number of years they had worked in the current firm was 7.03 years (SD = 7.923). Moreover, 385 (47.4%) participants were from POEs, including 201 men (52.2%) and 184 women (47.8%), with an average age of 32.58 years (SD = 7.722); 144 (37.4%) of these participants were unmarried and 241 (62.6%) of them were married; 45 (11.7%) of them had a senior high school or lower level of education, 59 (15.3%) had a junior college education, 281 (73%) had an undergraduate or higher level of education; and the average years they worked in their current firm was 4.79 years (SD = 5.413).

Measures

All items in the questionnaire were rated on a 7-point Likert scale, ranging from 1 (completely disagree) to 7 (completely agree).

Leader humor

The Leader Humor Scale developed by Cooper et al. (2018) was used to measure leader humor. The scale contains three items, including: "In many situations, my leader will use humor to communicate with me." The internal consistency coefficient (α), the McDonald's ω, the composite reliability (CR), and the average variance extracted (AVE) of the scale were 0.921, 0921, 0.950, and 0.863, respectively.

Employee voice

The scale proposed by Liang et al. (2012) was adopted to measure employee voice. The scale contains two subscales that measure a promotive and a prohibitive voice. The subscale of promotive voice contains five items, including "I proactively suggest new projects that are beneficial to the work unit," while the subscale of prohibitive voice contains six items, including "I am willing to point out problems when they occur, even if it could hamper my relationship with other colleagues." The internal consistency coefficients (α), the McDonald's ω, the CR, and the AVE of the promotive voice were 0.944, 0.945, 0.957, and 0.818, respectively. The internal consistency coefficients (α), the McDonald's ω, the CR, and the AVE of the prohibitive voice were 0.896, 0.897, 0.920, and 0.660, respectively.

Creativity

The instrument proposed by Gilson et al. (2012) includes subscales of radical and incremental creativity and was used to measure employee creativity. The subscale of radical creativity contains four items, including "When you think of the ideas you come up with at work, to what extent would you characterize them as being... departures from what is currently done or offered." The subscale of incremental creativity contains three items, including

"When you think of the ideas you come up with at work, to what extent would you characterize them as being... incremental improvements upon existing processes or products." The internal consistency coefficients (α), the McDonald's ω, the CR, and the AVE of the radical creativity were 0.894, 0.895, 0.926, and 0.759, respectively. The internal consistency coefficients (α), the McDonald's ω, the CR, and the AVE of the incremental creativity were 0.899, 0.901, 0.937, and 0.833, respectively.

Contradictory thinking

The subscale of contradictory thinking in the Dialectical Thinking Scale for Chinese People developed by Hou (2004) was used to measure contradictory thinking. This subscale contains four items including: "I often find that things contradict themselves." The internal consistency coefficient (α), the McDonald's ω, the CR, and the AVE of the scale were 0.824, 0.826, 0.884, and 0.655, respectively.

Control variables

According to the recommendations of Chow (2020), this study included in the model the following as control variables: sex, age, marital status, educational background, and years working in the current firm. Specifically, sex (male = 1 and female = 2), marital status (married = 1 and unmarried = 2), and education (senior high school and lower level = 1, junior college = 2, and undergraduate and higher level = 3) were categorical variables, while age and years working at the firm were continuous variables.

Results

Quality of the data

The present study used Mplus Version 7.4 to conduct confirmatory factor analysis. The results showed that, among the "leader humor + prohibitive voice + radical creativity + contradictory thinking" models, the four-factor model fit the data better than alternative models ($\chi^2 = 489.046$, $\chi^2/df = 4.328$, $TLI = 0.954$, $CFI = 0.945$, $SRMR = 0.040$, $RMSEA = 0.064$); among the "leader humor + promotive voice + incremental creativity + contradictory thinking" models, the four-factor model fit the data better than alternative models ($\chi^2 = 305.884$, $\chi^2/df = 3.641$, $TLI = 0.969$, $CFI = 0.975$, $SRMR = 0.043$, $RMSEA = 0.057$).[1] To avoid the impact of the standard deviation, Harman's single-factor test was used to examine homology bias through SPSS 22.0. The result found that the first factor explained 38.750% of the total variation, which was lower than the 40% standard. Therefore, the standard deviation of the data was within an acceptable range.

Correlation analysis

Table 1 shows the data characteristics of each variable, including the mean value, standardized deviation, and the correlation coefficient. The results showed that leader humor was positively correlated with radical creativity ($r = 0.294$, $p < 0.01$) and incremental creativity ($r = 0.297$, $p < 0.01$). Leader humor was also positively correlated with a promotive voice ($r = 0.295$, $p < 0.01$), a prohibitive voice ($r = 0.302$, $p < 0.01$), and contradictory thinking ($r = 0.117$, $p < 0.01$). Moreover, a prohibitive voice was positively correlated with radical creativity ($r = 0.523$, $p < 0.01$), while a promotive voice was positively correlated with incremental creativity ($r = 0.604$, $p < 0.01$). These findings provide a basis for further hypothesis testing.

Hypothesis testing

An ordinary least squares (OLS) regression was used to test H1 and H2, and the results are shown in Table 2. Leader humor (collected at time point 1) had a significant positive correlation with radical creativity (*adjusted* $R^2 = 0.117$, $B = 0.213$, $p < 0.01$) and incremental creativity (*adjusted* $R^2 = 0.123$, $B = 0.208$, $p < 0.01$) (collected at time point 3). Hence, H1a and H1b were supported. In addition, leader humor was positively correlated with a promotive voice (*adjusted* $R^2 = 0.194$, $B = 0.236$, $p < 0.01$) and a prohibitive voice (*adjusted* $R^2 = 0.167$, $B = 0.223$, $p < 0.01$) (collected at time point 2). Next, Model 4 was constructed in PROCESS (Hayes, 2017) to test the mediating effect. The results showed that prohibitive voice mediated the influence of leadership humor on radical creativity (*indirect effect* = 0.105, $SE = 0.018$, 95% CI = 0.071 to 0.141; *direct effect* = 0.109, $SE = 0.023$, 95% CI = 0.064 to 0.153; *total effect* = 0.213, $SE = 0.024$, 95% CI = 0.166 to 0.261, the promotive voice was controlled). Promotive voice mediated the relationship between leader humor and incremental creativity (*indirect effect* = 0.122, $SE = 0.019$, 95% CI = 0.087 to 0.161; *direct effect* = 0.085, $SE = 0.021$, 95% CI = 0.045 to 0.126; *total effect* = 0.208, $SE = 0.024$, 95% CI = 0.162 to 0.254, the prohibitive voice was controlled). Therefore, H2a and H2b were supported.

Next, H3 was tested by examining the significance of the interaction item (leader humor × contradiction) (Table 3). The results showed that leader humor was positively correlated with prohibitive voice ($B = 0.073$, $p < 0.01$) and contradictory thinking ($B = 0.065$, $p < 0.01$). Then, the interaction effect was significant ($B = 0.050$, $p < 0.01$), and the model explained more variance (*adjusted* $R^2 = 0.516$, $\Delta R^2 = 0.010$, $p < 0.01$). Model 1 was then used in PROCESS (Hayes, 2017) to further test the moderating effect. The results showed that, when contradictory thinking was high, the effect of leader humor on prohibitive voice was significant (*effect* = 0.126, $SE = 0.023$, 95% CI = 0.080 to 0.172), and when contradictory thinking was low, the effect was not significant (*effect* = 0.014, $SE = 0.024$, 95% CI = −0.034 to 0.061). Thus, H3b was supported. Model 7 was used in PROCESS (Hayes, 2017) to test the effect of contradictory thinking on the mediating model. The results revealed that the indirect effect of leader humor on radical creativity was significant when contradictory thinking was high (*indirect effect* = 0.030, $SE = 0.009$, 95% CI = 0.014 to 0.049), the indirect effect was not significant when contradictory thinking was low (indirect effect = 0.003, SE = 0.009, 95% CI = −0.015 to 0.021), and that the indirect effect was significant when contradictory thinking was medium (indirect effect = 0.015, SE = 0.007, 95%

1 The Composite Reliability (CR) and the Average Variance Extracted (AVE) of all factors are greater than 0.7 and 0.5 respectively.

TABLE 1 Correlation analysis results.

Variables	Means (*SD*)	1	2	3	4	5	6	7	8	9	10	11
1 LH	4.47 (1.45)											
2 PROH	4.62 (1.07)	0.295**										
3 PROM	4.86 (1.13)	0.302**	0.692**									
4 CONTR	4.37 (1.18)	0.117**	0.111**	0.050								
5 OS	1.53 (0.50)	−0.094**	−0.162**	−0.178**	0.105**							
6 RC	4.54 (1.05)	0.294**	0.523**	0.567**	0.162**	−0.094						
7 IC	4.95 (1.02)	0.297**	0.512**	0.604**	0.090**	−0.155**	0.634**					
8 SEX	1.57 (0.50)	−0.070**	−0.183**	−0.197**	0.037	0.172**	−0.139**	−0.132**				
9 AGR	31.95 (8.06)	−0.064	0.199**	0.245**	−0.054	−0.075*	0.077*	0.093**	0.002			
10 EDU	2.54 (0.94)	0.096**	−0.010	0.078*	−0.067	−0.296**	0.067	0.115**	−0.225**	−0.112**		
11 MARY	1.62 (0.49)	−0.097**	0.127**	0.107**	−0.025	−0.010	0.044	0.053	0.056	0.569**	−0.152**	
12 YEAR	5.97 (6.94)	−0.070**	0.092**	0.148**	0.054	0.162**	0.099**	0.085*	−0.035	0.600**	−0.124**	0.347**

(1) $^{*}p < 0.05$; $^{**}p < 0.01$ (two-tailed). (2) TS: LH, leader humor; PROH, prohibitive voice; PROM, promotive voice; CONTR, contradiction; OS, ownership; RC, radical creativity; IC, incremental creativity; MAR, marital status.

TABLE 2 Regression analysis results.

Variables	PROH			PROM			RC			IC		
	B	*SE B*	β	*B*	*SE B*	β	*B*	*SE B*	β	*B*	*SE B*	β
LH	0.223	0.024	0.303**	0.236	0.025	0.304**	0.213	0.024	0.295**	0.208	0.023	0.295**
SEX	−0.384	0.071	−0.178**	−0.379	0.074	−0.167**	−0.233	0.072	−0.110**	−0.190	0.070	−0.092**
AGR	0.027	0.006	0.207**	0.037	0.006	0.264**	0.003	0.006	0.022	0.008	0.006	0.059
EDU	−0.060	0.038	−0.053	0.050	0.040	0.042	0.038	0.039	0.034	0.095	0.038	0.087*
MAY	0.121	0.087	0.055	−0.004	0.090	−0.002	0.084	0.088	0.039	0.094	0.085	0.045
YEAR	−0.007	0.006	−0.043	0.002	0.006	0.011	0.014	0.006	0.093	0.009	0.006	0.062
ADR2	0.167			0.194			0.117			0.123		

(1) $^{*}p < 0.05$; $^{**}p < 0.01$. (2) TS: LH, leader humor; PROH, prohibitive voice; PROM, promotive voice; RC, radical creativity; I, incremental creativity; MAR, marital status.

CI = 0.003 to 0.029). The moderated mediating effect of the overall model was significant (*index* = 0.012, *SE* = 0.053, 95% CI = 0.003 to 0.024). Hence, H4b was supported. The same methods were used to test H3a and H4a. Leader humor was found to be significantly correlated with promotive voice ($B = 0.091$, $p < 0.01$). However, there was no significant correlation between contradictory thinking and promotive voice ($B = -0.021$, *ns*). In addition, the effect of the interaction term was also not significant ($B = -0.023$, *ns*). Therefore, H3a was rejected (Table 4), and further testing for H4a and H5a was unnecessary.

Finally, Model 11 was applied in PROCESS (Hayes, 2017) to conduct a three-way interaction analysis. The results showed that the effect of the overall model was not significant (*index* = 0.037, *SE* = 0.010, 95% CI = −0.014 to 0.023). However, in SOEs, the moderated mediation model was significant (*indirect effect* = 0.013, *SE* = 0.007, 95% CI = 0.002 to 0.029). In POEs, the moderated mediation model was not significant (*indirect effect* = 0.009, *SE* = 0.007, 95% CI = −0.004 to 0.025); thus, H5b was partially supported.

Furthermore, the present study used the simple slope method to draw the chart. Low/high levels of contradictory thinking were calculated using −/+ one standard deviation from the mean of the variable. Figure 2 shows that leader humor had a stronger positive influence on prohibitive voice when contradictory thinking was high and a weaker influence when contradictory thinking was low, consistent with H3b. Figure 3 shows that leader humor had a stronger indirect effect on radical creativity when contradictory thinking was high and a weaker indirect effect when contradictory thinking was low. Figure 4 shows that, among the four scenarios ("SOE-high contradiction," "SOE-low contradiction," "POE-high contradiction," and "POE-low contradiction"), leader humor had a stronger indirect effect on radical creativity in the "SOE-high contradiction" case.

Discussion

Theoretical contributions

This study makes the following four theoretical contributions. First, the results showed that leader humor had a significant positive effect on employee incremental and radical creativity. Previous

TABLE 3 The moderating effect of contradictory thinking on the relationship between leader humor and the prohibitive voice.

Variables	PROH			PROH		
	B	*SE B*	β	*B*	*SE B*	β
LH	0.073	0.020	0.099**	−0.148	0.058	−0.201*
PROM	0.607	0.026	0.640**	0.604	0.026	0.637**
CONTR	0.065	0.023	0.072**	−0.163	0.060	−0.181**
LH * CONTR				0.050	0.012	0.428**
SEX	−0.160	0.056	−0.074	−0.151	0.056	−0.070**
AGR	0.006	0.005	0.048	0.007	0.005	0.054
EDU	−0.085	0.030	−0.074**	−0.076	0.029	−0.066*
MAY	0.123	0.067	0.056	0.120	0.066	0.055
YEAR	−0.009	0.005	−0.060	−0.010	0.005	−0.065*
R^2	0.506			0.516		
ΔR^2				0.010*		

(1) $^*p < 0.05$; $^{**}p < 0.01$. (2) TS: LH, leader humor; PROH, prohibitive voice; PROM, promotive voice radical creativity; CONTR, contradictory thinking.

TABLE 4 The moderating effect of contradictory thinking on the relationship between leader humor and the promotive voice.

Variables	PROM			PROM		
	B	*SE B*	*β*	*B*	*SE B*	*β*
LH	0.091	0.020	0.117**	0.193	0.060	0.249**
PROH	0.659	0.028	0.625**	0.666	0.029	0.632**
CONTR	−0.021	0.024	−0.022	0.085	0.064	0.090
LH * CONTR				−0.023	0.013	−0.190
SEX	−0.124	0.059	−0.055*	−0.126	0.058	−0.055*
AGR	0.018	0.005	0.131**	0.018	0.005	0.127**
EDU	0.088	0.031	0.073**	0.084	0.031	0.070**
MAY	−0.083	0.070	−0.036	−0.083	0.070	−0.036
YEAR	0.007	0.005	0.041	0.007	0.005	0.043
R^2	0.518			0.520		
ΔR^2				0.002		

(1) $^*p < 0.05$; $^{**}p < 0.01$. (2) TS: LH, leader humor; PROH, prohibitive voice; PROM, promotive voice radical creativity; CONTR, contradictory thinking.

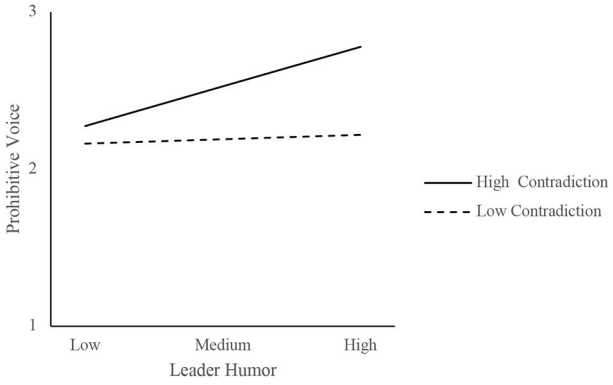


FIGURE 2
The moderating effect of contradictory thinking on the relationship between leader humor and a prohibitive voice.

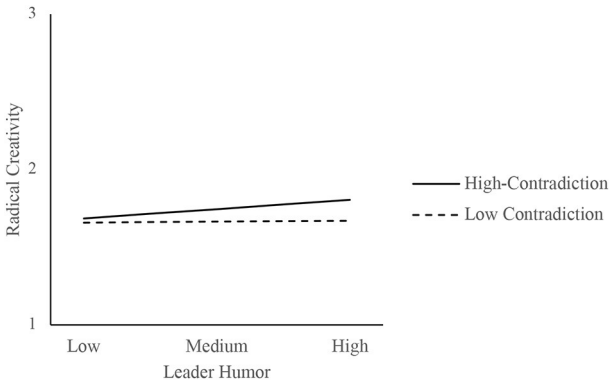


FIGURE 3
The moderating effect of contradictory thinking on the indirect effect of leader humor on radical creativity.

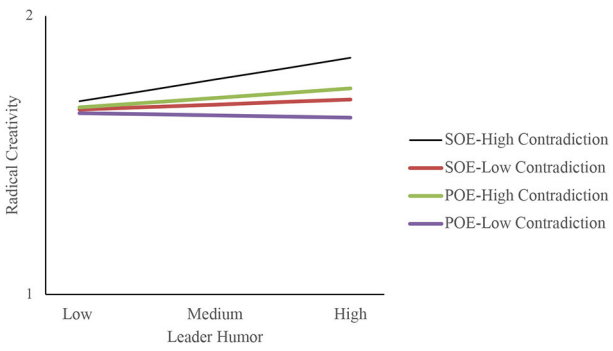


FIGURE 4
Three-way interaction of leader humor and contradictory thinking and corporate ownership on radical creativity through a prohibitive voice.

studies have conceptualized and operationalized creativity as a single concept, which overlooks its inherent complexity. This study further divided creativity into radical and incremental creativity according to the recommendations of Madjar et al. (2011). In this respect, these findings not only contribute to the literature on leadership but also enrich the existing theories of creativity. Second, based on the BVT, the results showed that leader humor has a positive impact on both promotive and prohibitive types of voice. This result is consistent with the conclusions of previous research (Lin, 2016; Tan et al., 2021). More importantly, this study presents the first efforts to distinguish the mechanisms by which leader humor influences different types of creativity. In specific, the results showed that a promotive voice mediates the impact of leader humor on incremental creativity, whereas a prohibitive voice mediates the association between leader humor and radical

creativity. Thus, different types of employee voices may lead to different types of creativity.

Third, this study found that contradictory thinking moderates the effect of leader humor on employee voice. Compared to employees with low levels of contradictory thinking, employees with high levels of contradictory thinking are more likely to perceive leader humor and thus express their voice. However, it was also found that contradictory thinking only moderates the relationship between leader humor and prohibitive voice but not between leader humor and promotive voice. This may be because Chinese culture emphasizes maintaining and prioritizing harmony. Thus, compared to the prohibitive voice that may put employees' relationships with leaders at risk, Chinese employees are more inclined to propose suggestions that maintain internal unity and stability, such as a promotive voice. Consequently, such social desirability for a promotive voice may make the participants exhibit bias in the process of completing the questionnaire.

Fourth, the moderated mediation effect was supported in SOEs but not in POEs. This conclusion was contrary to our hypothesis. The result further found that the indirect effect of leader humor on the radical creativity of employees with high levels of contradictory thinking through prohibitive voice is greater in SOEs than in POEs ("SOE-high contradiction" > "POE-high contradiction"). We attributed this phenomenon to the following reasons: There has been a growing demand for employment in China over recent years, which may result in increased difficulty in finding a new job. As a result, employees may be less willing to risk losing their current job to exhibit a prohibitive voice. Compared to employees in POEs, employees in SOEs are better protected (Sheng and Zhao, 2013) by law and thus have the courage to exhibit a prohibitive voice. However, employees in POEs have lower job security, and even if they perceive leader humor, they are unlikely to exhibit a prohibitive voice that may challenge their relationships with the leaders. Moreover, compared to POEs, SOEs are more likely to obtain external resources from universities, scientific institutions, and the government (Liu et al., 2017) to facilitate innovation in China (Choi et al., 2011). In contrast, POEs have fewer resources and are thus less capable of implementing innovation changes. Even though leaders are well aware of the prohibitive voice, the implementation of such suggestions is likely restricted due to limited resources in POEs. Therefore, employees in POEs may not have a stronger motivation to exhibit a prohibitive voice.

Practical implications

This study has some practical implications. First, this study found that radical and incremental creativity are not mutually exclusive, and thus, we suggest that managers should regard humor as an interpersonal resource that enhances employee creativity. Second, the findings showed that leader humor stimulates employee creativity by letting them voice their opinions. Therefore, we recommend that enterprises should provide communication training to managers and further encourage them to communicate with employees humorously. Third, we recommend that POEs adopt some management measures to enhance employees' job security, such as offering stock ownership plans or long-term work contracts. In addition, to encourage innovative projects in POEs, we recommend that the government provide them with more resources and opportunities for trial and error.

Limitations and future research

This study has some limitations that should be considered. First, social desirability may have influenced the participants' evaluation of the questionnaire on the concept of a promotive voice. Future research should control for such an effect. Second, all variables in this study were self-reported by participants. Although the standard deviation of the data was within an acceptable range, this design inevitably led to some bias. We recommend that multisource data collection be used in the future, such as collecting another set of data with multiple sources of data (leaders and followers) and attempting to replicate the outcomes. Third, we used questionnaires to explore how leader humor influences two types of creativity, but this method may not provide evidence for causal relations between variables. Future studies should investigate causality through an experimental design.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by the Peking University. The patients/participants provided their written informed consent to participate in this study.

Author contributions

YC and KZ developed the study concept, drafted the manuscript, and were performed the testing and data collection. YH and RM contributed to the study design and provided critical revisions. YC and YW performed the data analysis and interpretation under the supervision of YH and RM. All authors approved the final version of the manuscript for submission.

Funding

This research was funded by the Chinese National Natural Science Foundation, grant number 32271125.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

References

Acemoglu, D., and Akcigit, U. (2022). Radical and incremental innovation: the roles of firms, managers, and innovators. *Am. Econ. J. Macroecon.* 14, 199–249. doi: 10.1257/mac.20170410

Amabile, T. M., Conti, R., Coon, H., Lazenby, J., and Herron, M. (1996). Assessing the work environment for creativity. *Acad. Manage. J.* 39, 1154–1184. doi: 10.2307/256995

Arendt, L. A. (2006). *Leaders' Use of Positive Humor: Effects on Followers' Self-Efficacy and Creative Performance*. Wisconsin: The University of Wisconsin-Milwaukee.

Attardo, S. (1997). The semantic foundations of cognitive theories of humor. *Humor-Int. J. Humor Res.* 10, 395–420. doi: 10.1515/humr.1997.10.4.395

Benner, M. J. (2003). Exploitation, exploration, and process management: The productivity dilemma revisited. *Acad. Manage. Rev.* 28, 238–256. doi: 10.2307/30040711

Burris, E. R. (2012). The risks and rewards of speaking up: Managerial responses to employee voice. *Acad. Manage. J.* 55, 851–875. doi: 10.5465/amj.2010.0562

Byun, G., Dai, Y., Lee, S., and Kang, S. W. (2016). When does empowering leadership enhance employee creativity? A three-way interaction test. *Soc. Behav. Pers. Int. J.* 44, 1555–1564. doi: 10.2224/sbp.2016.44.9.1555

Cai, W., Lysova, E. I., Khapova, S. N., and Bossink, B. A. G. (2019). Does entrepreneurial leadership foster creativity among employees and teams? The mediating role of creative efficacy beliefs. *J. Bus. Psychol.* 34, 203–217. doi: 10.1007/s10869-018-9536-y

Chen, A. S. Y., and Hou, Y. H. (2016). The effects of ethical leadership, voice behavior and climates for innovation on creativity: A moderated mediation examination. *The Leadership Q.* 27, 1–13. doi: 10.1016/j.leaqua.2015.10.007

Cheng, D., Amarnani, R., Le, T., and Restubog, S. (2019). Laughter is (powerful) medicine: The effects of humor exposure on the well-being of victims of aggression. *J. Business Psychol.* 34, 389–402. doi: 10.1007/s10869-018-9548-7

Cheng, D., Chan, X. W., and Amarnani, R. K. (2021). Finding humor in work-life conflict: Distinguishing the effects of individual and coworker humor. *J. Vocat. Behav.* 125, 103538. doi: 10.1016/j.jvb.2021.103538

Choi, S. B., Lee, S. H., and Williams, C. (2011). Ownership and firm innovation in a transition economy: Evidence from China. *Res. Policy* 40, 441–452. doi: 10.1016/j.respol.2011.01.004

Chow, I. H. S. (2020). The effect of leader humor on employee adaptability. *Humor-Int. J. Humor Res.* 33, 137–156. doi: 10.1515/humor-2018-0042

Cooper, C. D., Kong, D. T., and Crossley, C. D. (2018). Leader humor as an interpersonal resource: Integrating three theoretical perspectives. *Acad. Manage. J.* 61, 769–796. doi: 10.5465/amj.2014.0358

Fredrickson, B. L. (1998). What good are positive emotions? *Rev. Gen. Psychol.* 2, 300–319. doi: 10.1037/1089-2680.2.3.300

Gilson, L. L., Lim, H. S., D'Innocenzo, L., and Moye, N. (2012). One size does not fit all: managing radical and incremental creativity. *J. Creative Behav.* 46, 168–191. doi: 10.1002/jocb.12

Gilson, L. L., and Madjar, N. (2011). Radical and incremental creativity: antecedents and processes. *Psychol. Aesthetics Creativity Arts* 5, 21–28. doi: 10.1037/a0017863

Hayes, A. F. (2017). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. London: Guilford Publications.

Hou, Y. (2004). *Research of the Structure of Chinese Thinking Styles and Its Influence*. Peking: Peking University.

Hu, W. (2020). Leader humor and employee creativity: a model integrating pragmatic and affective roles. *Asian Bus. Manage.* 8, 1–20. doi: 10.1057./s41291-020-00105-3

Hughes, D. J., Lee, A., Tian, A. W., Newman, A., and Legood, A. (2018). Leadership, creativity, and innovation: a critical review and practical recommendations. *The Leadership Q.* 29, 549–569. doi: 10.1016/j.leaqua.2018.03.001

Karakowsky, L., Podolsky, M., and Elangovan, A. R. (2020). Signaling trustworthiness: The effect of leader humor on feedback-seeking behavior. *J. Soc. Psychol.* 160, 170–189. doi: 10.1080/00224545.2019.1620161

Kim, T. Y., Lee, D. R., and Wong, N. Y. S. (2016). Supervisor humor and employee outcomes: the role of social distance and affective trust in supervisor. *J. Bus. Psychol.* 31, 125–139. doi: 10.1007/s10869-015-9406-9

Koh, D., Lee, K., and Joshi, K. (2019). Transformational leadership and creativity: A meta-analytic review and identification of an integrated model. *J. Org. Behav.* 40, 625–650. doi: 10.1002/job.2355

Lee, D. (2015). The impact of leader's humor on employees' creativity: the moderating role of trust in leader. *Seoul J. Bus.* 21, 59–86. doi: 10.35152/snusjb.2015.21.1.003

Lepine, J. A., and Van Dyne, L. (1998). Predicting voice behavior in work groups. *J. Appl. Psychol.* 83, 853–868. doi: 10.1037/0021-9010.83.6.853

Li, Z., Dai, L., Chin, T., and Rafiq, M. (2019). Understanding the role of psychological capital in humorous leadership-employee creativity relations. *Front. Psychol.* 10, 1636. doi: 10.3389/fpsyg.2019.01636

Liang, B., Van Knippenberg, D., and Gu, Q. (2021). A cross-level model of shared leadership, meaning, and individual creativity. *J. Org. Behav.* 42, 68–83. doi: 10.1002/job.2494

Liang, J., Farh, C. I. C., and Farh, J. L. (2012). Psychological antecedents of promotive and prohibitive voice: a two-wave examination. *Acad. Manage. J.* 55, 71–92. doi: 10.5465/amj.2010.0176

Lin, S. H., and Johnson, R. E. (2015). A suggestion to improve a day keeps your depletion away: examining promotive and prohibitive voice behaviors within a regulatory focus and ego depletion framework. *J. Appl. Psychol.* 100, 1381–1397. doi: 10.1037/apl0000018

Lin, Z. (2016). The influence of perceived leader humor on subordinate's voice behavior: A study under Chinese background. *Open J. Soc. Sci.* 4, 174–178. doi: 10.4236/jss.2016.44025

Litchfield, R. C. (2008). Brainstorming reconsidered: a goal-based view. *Acad. Manage. Rev.* 33, 649–668. doi: 10.5465/amr.2008.32465708

Liu, D., Gong, Y., Zhou, J., and Huang, J. C. (2017). Human resource systems, employee creativity, and firm innovation: the moderating role of firm ownership. *Acad. Manage. J.* 60, 1164–1188. doi: 10.5465/amj.2015.0230

Liu, W., and Zhu, R. (2010). I warn you because I like you: voice behavior, employee identifications, and transformational leadership. *The Leadership Q.* 21, 189–202. doi: 10.1016/j.leaqua.2009.10.014

Ma, X., and Jiang, W. (2018). Transformational leadership, transactional leadership, and employee creativity in entrepreneurial firms. *J. Appl. Behav. Sci.* 54, 302–324. doi: 10.1177/0021886318764346

Madjar, N., Greenberg, E., and Chen, Z. (2011). Factors for radical creativity, incremental creativity, and routine, noncreative performance. *J. Appl. Psychol.* 96, 730–743. doi: 10.1037/a0022416

Malik, M. A. R., and Choi, J. N. (2019). Distinct effects of intrinsic motivation and extrinsic rewards on radical and incremental creativity: the moderating role of goal orientations. *J. Org. Behav.* 40, 1013–1026. doi: 10.1002/job.2403

Mao, J. Y., Chiang, J. T. J., Zhang, Y., and Gao, M. (2017). Humor as a relationship lubricant: the implications of leader humor on transformational leadership perceptions and team performance. *J. Org. Studies* 24, 494–506. doi: 10.1177/1548051817707518

March, J. G. (1991). Exploration and exploitation in organizational learning. *Org. Sci.* 2, 71–87. doi: 10.1287/orsc.2.1.71

McGraw, A. P. (2010). Benign violations: making immoral behavior funny. *Psychol. Sci.* 21, 1141–1149. doi: 10.1177/0956797610376073

Mesmer-magnus, J., Glew, D. J., and Viswesvaran, C. (2012). A meta-analysis of positive humor in the workplace. *J. Manag. Psychol.* 27, 155–190. doi: 10.1108/02683941211199554

Miao, R., Lu, L., Cao, Y., and Du, Q. (2020). The high-performance work system, employee voice, and innovative behavior: the moderating role of psychological safety. *Int. J. Environ. Res. Public Health* 17, 1150. doi: 10.3390/ijerph17041150

Morrison, E. W. (2014). Employee voice and silence. *Ann. Rev. Org. Psychol. Org. Behav.* 1, 173–197. doi: 10.1146/annurev-orgpsych-031413-091328

Ng, T. W. (2012). Employee voice behavior: a meta-analytic test of the conservation of resources framework. *J. Org. Behav.* 33, 216–234. doi: 10.1002/job.754

Peng, L., Lei, S., and Guo, Y. (2020). How can leader humor enhance subordinates' service creativity? The moderator of subordinates' SFIT and the mediator of role modeling. *Leadership Org. Dev. J.* 41, 865–882. doi: 10.1108/LODJ-03-2020-0087

Peng, M. W., and Luo, Y. (2000). Managerial ties and firm performance in a transition economy: the nature of a micro-macro link. *Acad. Manage. J.* 43, 486–501. doi: 10.2307/1556406

Qu, R., Janssen, O., and Shi, K. (2015). Transformational leadership and follower creativity: the mediating role of follower relational identification and the moderating role of leader creativity expectations. *Leadership Q.* 26, 286–299. doi: 10.1016/j.leaqua.2014.12.004

Rego, A., Sousa, F., and Marques, C. (2012). Authentic leadership promoting employees' psychological capital and creativity. *J. Bus. Res.* 65, 429–437. doi: 10.1016/j.jbusres.2011.10.003

Romero, E. J., and Cruthirds, K. W. (2006). The use of humor in the workplace. *Acad. Manage. Persp.* 20, 58–69. doi: 10.5465/amp.2006.20591005

Sheng, H., and Zhao, N. (2013). *China's State-Owned Enterprises: Nature, Performance and Reform*. New York, NY: World Scientific.

Soomro, B. A., and Memon, M. (2020). Paternalistic leadership style, employee voice and creativity among entrepreneurs: Empirical evidence from SMEs of a developing country. *Manage. Decision* 59, 285–305. doi: 10.1108/MD-11-2018-1207

Spencer-Rodgers, J. (2017). *The Psychological and Cultural Foundations of East Asian Cognition: Contradiction, Change, and Holism*. Oxford: Oxford University Press.

Tan, L., Wang, Y., and Lu, H. (2021). Leader humor and employee upward voice: the role of employee relationship quality and traditionality. *J. Leadership Org. Studies* 28, 221–236. doi: 10.1177/1548051820970877

Ünal, Z. M. (2014). Influence of leaders' humor styles on the employees' job-related affective well-being. *Int. J. Acad. Rese. Accounting Finance. Manage. Sci.* 4, 201–211. doi: 10.6007/IJARAFMS/v4-i1/585

Wang, P., and Rode, J. C. (2010). Transformational leadership and follower creativity: the moderating effects of identification with leader and organizational climate. *Hum. Relations* 63, 1105–1128. doi: 10.1177/0018726709354132

Xu, S., and Jiang, X. (2018). The influence of openness to experience on perceived employee creativity: the moderating roles of individual trust. *The J. Creative Behav.* 52, 142–155. doi: 10.1002/jocb.138

Yam, K. C., Barnes, C. M., Leavitt, K., Wei, W., Lau, J., Uhlmann, E. L., et al. (2019). Why so serious? A laboratory and field investigation of the link between morality and humor. *J. Pers. Soc. Psychol.* 117, 758–772. doi: 10.1037/pspi0000171

Yam, K. C., Christian, M. S., Wei, W., Liao, Z., and Nai, J. (2018). The mixed blessing of leader sense of humor: Examining costs and benefits. *Acad. Manage. J.* 61, 348–369. doi: 10.5465/amj.2015.1088

Yang, C., and Yang, F. (2021). Linking leader humor to employee creativity: the roles of relational energy and traditionality. *J. Manage. Psychol.* 36, 548–561. doi: 10.1108/JMP-06-2020-0300

Younas, A., Wang, D., Javed, B., Rawwas, M. Y. A., Abdullah, I., Zaffar, M. A., et al. (2020). Positive psychological states and employee creativity: The role of ethical leadership. *J. Creat. Behav.* 54, 567–581. doi: 10.1002/jocb.391

Zhang, J., and Su, W. (2020). Linking leader humor to employee innovative behavior: The roles of work engagement and supervisor's organizational embodiment. *Front. Psychol.* 11, 592999. doi: 10.3389/fpsyg.2020.592999

Zhang, X., and Bartol, K. M. (2010). Linking empowering leadership and employee creativity: The influence of psychological empowerment, intrinsic motivation, and creative process engagement. *Acad. Manage. J.* 53, 107–128. doi: 10.5465/amj.2010.48037118

Zhou, J., and George, J. M. (2001). When job dissatisfaction leads to creativity: encouraging the expression of voice. *Acad. Manage. J.* 44, 682–696. doi: 10.2307/3069410

frontiers | Frontiers in Psychology

TYPE Original Research
PUBLISHED 26 June 2023
DOI 10.3389/fpsyg.2023.1170855

OPEN ACCESS

EDITED BY
Steven Van Den Heuvel,
Evangelical Theological Faculty, Belgium

REVIEWED BY
Yangchun Fang,
Zhejiang University of Technology, China
Jack Barentsen,
Evangelical Theological Faculty, Belgium
Jacobus Kok,
Evangelische Theologische Faculteit Leuven, Belgium

*CORRESPONDENCE
Henri Slob
slob@eibe.eur.nl

RECEIVED 21 February 2023
ACCEPTED 06 June 2023
PUBLISHED 26 June 2023

CITATION
Slob H, van Geest P and Commandeur H (2023) Caring for relations and organizational success—conceptualization of an Augustinian leadership scale.
Front. Psychol. 14:1170855.
doi: 10.3389/fpsyg.2023.1170855

Caring for relations and organizational success—conceptualization of an Augustinian leadership scale

Henri Slob[1,2]*, Paul van Geest[1,2,3] and Harry Commandeur[2,4]

[1]Erasmus School of Philosophy, Erasmus University Rotterdam, Rotterdam, Netherlands, [2]Erasmus Economics & Theology Institute, Erasmus Institute for Business Economics, Erasmus University Rotterdam, Rotterdam, Netherlands, [3]Department of Biblical Sciences and Church History, Tilburg School of Catholic Thought, Tilburg University, Tilburg, Netherlands, [4]Department of Applied Economics, Erasmus School of Economics, Erasmus University Rotterdam, Rotterdam, Netherlands

While making great strides in recent decades to connect leadership and human flourishing, the positive leadership literature has yet to focus on the aspect of the communal. Based on a close reading of Augustine's works, this paper examines Augustinian leadership and emphasizes the importance of a view on leadership that aims at community building and contains an ethical framework characterized by veracity. This leadership style is founded on *caritas* (Gr.: *agape*, Eng.: love) as the main motive for leaders. Based on Augustine's thinking, this kind of love is defined as a way to attain knowledge. We identify four subconstructs to constitute an Augustinian leadership scale: Centrality of the community, Veracity, Empathy and Success (through temperance). We provide theoretical grounds for the distinctiveness of this leadership construct as compared with neighboring constructs. Finally, we propose a testable framework of Augustinian leadership with a direct effect on affective commitment as well as a mediated effect, and with a sense of belonging as the mediating variable. We provide ideas for future research and present practical implications of the theoretical insights on Augustinian leadership.

KEYWORDS

Augustinian leadership, sense of belonging, affective commitment, morality, relational view, positive leadership, communal focus

Introduction

Leadership research has shifted from focusing on the leader to focusing more on the relationship between leaders and followers. Moreover, ethical considerations are increasingly being incorporated into more theories of leadership. The idea here is that greater attention not only to relationships in which human beings flourish but also to the broader organizational and ethical context will contribute to greater well-being for more people (Kelloway et al., 2013; Zhang and Song, 2020). However, these positive leadership theories still have a strongly individual focus, even though the follower is now the subject of interest rather than the leader (e.g., servant leadership, Van Dierendonck, 2011; Eva et al., 2019). However, in other cases, the leadership theory still focuses on leadership behavior or performance (e.g., transformational leadership, Wang et al., 2011). What is needed is a combined focus on the communal—that emphasizes the need to nurture a culture characterized by compassionate love—and an ethical framework characterized by veracity (*cf.* Nohria and Khurana, 2010; Rosette and Tost, 2010).

Positive leadership research has shown that organizational members are more willing to follow—and even go the extra mile for—leaders with high ethical standards and who value relationships. This manifests itself, for example, in high organizational citizenship behavior (Mo and Shi, 2017) or extra employee effort, both of which are related to higher performance by the firm (De Luque et al., 2008). In early Christianity, leadership, community and morality were very closely related, and even though the context of society and organization has changed, contemporary scholars frequently call for a closer connection to be made between those concepts once more (Sendjaya, 2005; Nohria and Khurana, 2010). What better place to search for answers than in the ancient source material itself, that is, going *ad fontes*, specifically in the texts of one of the church fathers who is widely considered to have greatly impacted Western thinking, namely Augustine (Pollmann and Otten, 2013). In the positive leadership literature we conceptualize Augustinian leadership as a leadership style connecting a communal perspective and morality, thus complementing the widely adopted insights from servant and transformational leadership. The ancient Christian thinker Augustine did not formulate a leadership theory himself, but through a close reading of crucial passages in his works in context we uncover his thoughts on leadership. By tapping into Augustine's thinking, we are able to stretch our frame of reference and enrich our view on leadership.

A fundamental motive for human action and a prerequisite for human flourishing is "to belong" (Fromm, 1956). By engaging in reciprocal relationships, an individual develops an identity of their own (Buber, 1923/1978). Paving the way for this relational view of man, Scholastic theologians adopted a standpoint captured in the phrase: *homo est esse ad*. This means that a human *is*, because he is related to, as opposed to the Cartesian view that humans *are* because they think (*cogito ergo sum*). People base their self-conceptualization on, among other things, the groups they are members of and the leaders that appeal to their values and beliefs (Knez, 2016). The importance of a relational view of leadership has been pointed out by scholars developing the Leader–Member Exchange (LMX) theory of leadership (e.g., Graen and Uhl-Bien, 1995) and the social identity theory of leadership (Hogg, 2001; Steffens et al., 2021). Instead of focusing on the leader or the follower, the LMX theory incorporates both viewpoints together with the dyadic relationship. For this reason, surveys on LMX are designed to be taken by members as well as leaders, and concern behaviors of the leader combined with characteristics of the relationship [Graen and Uhl-Bien (1995), p. 237].

This paper addresses the conceptualization of an Augustinian leadership scale. First, the leadership dimensions are distilled by going *ad fontes* (i.e., reading Augustine's texts). Next, a comparison is made with neighboring leadership constructs to identify overlapping and distinguishing components. Finally, a model is proposed with affective commitment as a possible result of Augustinian leadership, with a mediating variable. We thus contribute to the field of positive leadership by conceptualizing a leadership style with its effects, thereby providing a testable framework for future research.

Augustinian leadership

Because Augustine's thoughts on leadership are, as it were, implicitly and explicitly woven into treatises on themes such as community building, love or human happiness, we have selected as the starting point of our reflection on leadership those passages from his work in which this intertwining is most clearly expressed.

First, we provide insight into Augustine's societal context, along with some biographical information. In the second part, the central work of Augustine (1961) is his *In epistolam Johannis ad Parthos*, which contains his reflections on the apostle John's view on love. In the third part, we mainly draw on Augustine's *De beata vita* and his *Praeceptum* (Augustine, 1967, 1970). These works contain practical guidance for, respectively, living a virtuous life and leading a community. In his *De Civitate Dei*, Chapter 24, Augustine defines a community as "an assemblage of reasonable beings bound together by a common agreement as to the objects of their love." Here again, love is the central construct to understanding a community and its members. Because of the centrality of this construct, we first discuss its layers of meaning.

In the following, we present Augustine's thoughts insofar as they present insights into leadership from a business economic and psychological viewpoint. We thus do not aim to present the full spectrum of Augustine's thoughts, and this will mean losing some of the richness of his works. However, we do provide a coherent leadership framework that is based on scholarly insights into Augustine's teaching. All insights below have previously been published in theological, peer-reviewed journals.

Context

Few thinkers can rival Augustine's (354–430) influence on Western anthropology, theology and cosmology (Pollmann and Otten, 2013). His career as a teacher of rhetoric was made in Madaura, Carthage, Rome and Milan. After his baptism in Milan in 387 he developed into an extraordinarily prolific writer. As bishop of Hippo—he was ordained in 395—he wrote a great number of sermons, letters, biblical commentaries and longer works in which he emphasised the primacy of grace, arguing that this preceded good will. He also composed treatises in which he attempted to safeguard the unity of the church, for instance by accusing the Donatists of seriously wounding the church, the Body of Christ, through their schism, as we shall see below. His examination of conscience and the self-analysis performed in his *Confessiones*, as well as his account of history and of the ideal social and societal order in *De civitate Dei*, composed to prove the value of Christianity, have been most influential throughout the centuries. But at the end of his life, Augustine had to leave four works unfinished. One of these was his *Retractationes* (426–427): the catalogue of his works in chronological order, each accompanied by criticisms, corrections, and comments. It was intended as a toolbox for the expansion and spread of Latin Christendom (Drecoll, 2002).

In the decades before he was born, Africa had experienced an unprecedented economic boom, having developed into the granary of the late Roman Empire. The region where Augustine grew up was very prosperous in the third to early fourth centuries, which was reflected in the construction of public monuments, such as amphitheaters, in the cities. But in the fourth century, prosperity waned in the cities of what is now North Africa. The region in which Thagaste was located became more agrarian again and famine was not uncommon in the countryside. Born the son of an admittedly impoverished but still

Roman aristocrat, Augustine, however, did not really know poverty. Even as a teacher and later as a bishop, he belonged to an elite. It was during his period as a bishop that he began devoting thoughts to leadership. He did so at a time when leadership was not upheld democratically; not infrequently, the law of the strongest applied.

Love as the key motive for human behavior

Central to Augustine's thinking on human relations is *caritas* (Eng.: love) as a way of achieving knowledge (Lat.: via *amoris*). In Augustine's thinking, the substantive "love" has many meanings. The layers of meaning he attributes to the word are sometimes not even separable from each other. In his *In epistolam Johannis ad Parthos* (*ep. Io. tr.*, 415/1961), for example, it turns out to be a very layered concept. In its highest form, love is God himself (415/1961, 1.11; 8.5–8.7). However, love also appears to be a force in man because it is supposed to be a commandment and the ultimate goal of all commandments (415/1961, 1.9; 5.2; 6.4; 10.4; 10.5). By "love" is expressed a fundamental attitude and way of life (415/1961, 5.2; 9.1). It also stands for an inner force that, like desire, creates in man a receptivity towards God (415/1961, 6.8; 6.10; 6.12). As an inner force, moreover, love appears almost inseparable from love as a gift of grace (*ep. Io. tr*. 6.8). Love cannot exist without the Spirit of God. But it simultaneously takes shape in personal love for one's neighbor (415/1961, *6.10; 7.5; 7.6. cf.* 1 John 4: 7–8).

In his *In epistolam Johannis ad Parthos*, Augustine thereby also indicates the different stages to be distinguished in the growth of love. For example, he relates the physical love of married couples, which is related to the creative urge that is eros, to God by referring to it as a first stage in the development towards real Love. He also sees the willingness to do something for another and compassion for someone in need as the first stage in this development (415/1961, *5.12*). This love should be further nourished by the word of God. When this happens, according to Augustine, the motive ("love") and the basic attitude ("humility") coincide. He sees the willingness to give one's life for a fellow human being, or even for an enemy, as a sign of perfect love. It is in this, that man still senses the unknowable being of God (415/1961, *5.12; 6.1; 6.13*).

Of crucial importance in Augustine's view of *caritas* is that love involves a way of knowing. The via *amoris* is a way in which the creative urge (*eros*) is embedded in *agape* (*caritas*). Since Descartes and the Enlightenment, we have seen reason and reason alone as a capacity by which we know and arrive at substantiated insights. For Augustine, the capacity to love is crucial in order to arrive at knowledge, insight and wisdom. In the second book of *De doctrina christiana* (397/1866), Augustine writes that the insight into the insufficiency of the faculty of knowing can be overcome by love as a way of knowing, because it eliminates pride (Augustine, 1866). Moreover, Augustine maintained that humility is the seedbed of love and leads to deepened insight into the self, the other, the mystery of life. Loving someone would even lead to the highest possible form of knowledge (Van Geest, 2011).

In contrast with the first categories of love, *eros* and *philia*, this latter conceptualization of *agape* (or *caritas*) is not primarily concerned with admiration for the other, nor is it a form of contemplation; rather, it is an active, moral form of loving the other (Van Geest, 2011, p. 172; see also Levinas, 1994). This love directed to the other is based on the dignity they possess as a human being instead of a dignity resulting from either their societal status, possessions or capabilities.

The kind of love to which Augustine frequently referred was thus not of the romantic or erotic kind; rather, he meant to point out the importance of *compassionate* or *neighborly love*. For him, the power of *caritas* remains a mystery, just as the source of love (God) is. In *epistolam Johannis ad Parthos*, he states that no one can say what face, what form, what stature, what feet or what hands love has. But Augustine hastens to add that love has hands, for they reach out to the poor; eyes, for they see who is in need (415/1961, 7.10). In the context of this concept of love, he develops in his works four key leadership constructs that cannot be understood without keeping in mind their purpose: to love (see Figure 1). These four are: Love for the community, love for truth, love for the individual and ensuring durability for the community. We label these aspects respectively: Centrality of the community, Veracity, Empathy and Success (through temperance). We now turn to elaborate on each aspect of Augustinian leadership.

The dimensions of Augustinian leadership

As stated before, Augustine did not form a comprehensive leadership theory. He was, however, one of the first to systematically reflect on human behavior, the will and memory. In doing so, he countered ideas of the Platonic school that praised the rational capacities of human beings and thought honor to be a laudable cause to strive for. Augustine thought humility should be the basic attitude for leaders and love the key motive for behavior. People's will and the *ordo* which they live in is strongly determined by factors outside people's influence. Possessions and capabilities are granted to people by *gratia* (Eng.: grace). In the era he lived in, this anti-meritocratic view was strongly against the view of man, represented by his opponent Pelagius, who placed greater emphasis on the fact that people determine their own future. Certainly, in his later period, Augustine commented on this, maintaining that man's recognition that he owed his talents, educational opportunities and development mainly to others and to the Creator would make him more humble (Drecoll, 2020). Centuries later, influential thinkers like Thomas Aquinas and John Calvin, built on Augustine's thinking, making him

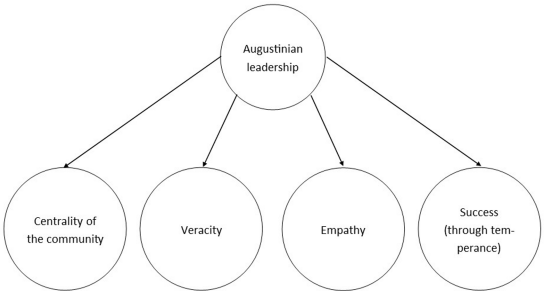


FIGURE 1
Augustinian leadership and its subconstructs.

a foundational thinker for their view on subjects such as love and leadership, among other things.

In Augustine's thoughts on man and human existence, the assumption is not that man *is* because he thinks (Descartes), even though he presumes reason to be man's highest capacity. In his anthropology, the human being is first and foremost a relational being. The human being *is* because he is able to establish relationships with others. This implies dualities under which leaders find themselves placed. Should a leader be result-oriented or also keen to impress upon employees that their work has meaning? Should they be action-oriented or condition-oriented, as Augustine envisaged when he developed a leadership model in his *Praeceptum*? In the Augustinian leadership model, the guiding questions posed by the church father to his people read, namely: what do you need; what preconditions may I create for you so that you not only experience yourself as a meaningful link in a community, but also remain focused on the common goal of us together; a goal characterized by the pursuit of a good relationship and reciprocity? (*cf. Praeceptum* 1; 5).

Centrality of the community

The Augustinian leader prioritizes a flourishing community over self-interest and pure altruism. Clarifying this prioritization, Augustine in his *Praeceptum* postulates a reciprocal relationship between the well-being of the community and of each individual participating in it, as well as between the *praepositus* (leader, overseer) and the community's members (Van Bavel, 1959; Verheijen, 1980). Every member of the community, including the leader, needs the others to flourish (*Praeceptum* 1,3; *De Civitate Dei XIX*). Together they are travelling through life, helping each other in their development. One of the conditions for a community to flourish is that participants cannot place their self-interest above the communal interest. Moreover, the community is not supposed to be a vehicle for self-actualization nor to consolidate their power. Augustine tells his confreres in the fifth chapter of his *Praeceptum* that they must never work to pursue their own interests but should be all the more zealous about their work because it benefits the community (397/1967, 5,2). Therefore, he opens his *Praeceptum* with the admonishment to live together in unity, "with one soul and one heart, towards God." (397/1967, *Praeceptum* 1; *cf.* Acts 4: 31–35). Just as in the earlier *Ordo Monasterii*, in the *Praeceptum* he identifies this aspect as the path to God. At the end of the first chapter, he associates the path to God (*in Deum*), which is established through unity of heart and soul, with the way we treat our neighbors (397/1967, *Praeceptum* 1; Van Bavel, 1996). With this inclusion in the first chapter, Augustine indicates that the perfection of the individual is related to the wholeness of the community and to the way we relate to others. And yet this great unity of heart and soul is supported mainly by the way in which people live together in everyday life: within the inclusion (Van Geest, 2020).

In order for the community to have a long lifespan, the Augustinian leader will strive for *unitas* (Eng.: unity), which presupposes compassionate *disciplina* (Eng.: discipline or correction) (Van Bavel, 1959). The latter is merely a method, never a goal in itself. To employ discipline in a predictable and just way, the Augustinian leader defines the community's boundary conditions. This way, guidance is offered to the members and appropriate measures can be taken when someone does not conform to the agreements made (Van Bavel, 1959). Augustinian leadership thus facilitates *concordia* (Eng.: harmony).

Veracity

Next, to *unitas*, the Augustinian leader sees veracity as the central component of morality. This means that speaking the truth is paramount in the ethical considerations of this leader. Lies, defined as willingly telling anything other than the truth or as withholding the truth, are not allowed (Van Geest, 2007). This in contrast to other church fathers who found white lies justifiable because, for example, it would not show mercy for a dying mother to be told in the hour of her death that her son had died in war. Although Augustine recognizes that he would not meet his own standard in such a situation, he still argues that the mother should be told the truth. He explains his point by stating that if people do not speak the truth, they do not stay on the track of the Truth that encompasses the world (Van Geest, 2017). This is because of the deteriorating effect lying has on the relationship: it makes group members doubt the trustworthiness of the person who is lying. In any case of defective behavior, be it lying or something else, the Augustinian leader enacts discipline compassionately. This means that a dialogic approach is chosen, instead of measures of hard power to instill fear in the person who wronged the group. This individual should be pointed toward the desirable behavior, and the leader's efforts should be aimed at maintaining this person as a member of the group.

Empathy

Here, we clearly see the importance of empathy in Augustinian leadership. The Augustinian leader grants each member time to become accustomed to the group norms and disciplines mercifully in the case where a member does not live up to these norms (*Praeceptum* 7; Schrama, 1991; Burt, 1999). The reason for this being that the norms are neither ends to strive for, nor a way to measure each members' perfection. Norms are in place to facilitate the development of each individual towards a better way of dealing with others (Köpf, 2007). This process culminates in *concordia* (Eng.: harmony). Moreover, while the leader is not primarily tasked with every member's self-actualization, it is part of their responsibility to acknowledge every individual's singularity and to adapt the way in which each group member is treated, according to their needs. This means that the strongest members are being challenged enough to develop personally, while the weaker members receive extra support to accomplish the given tasks. In the Augustinian leadership model, the church father aims at providing the preconditions needed for his people to thrive and experience themselves as a meaningful link in a community which strives after good relationships and reciprocity (*cf.* Augustine, 397/1967, *Praeceptum* 1,5; Zumkeller, 1968).

There is also a tension between leadership that focuses on thinking and doing and leadership that finds identity and development of primary importance. In the Augustinian leadership model, these two forms of leadership coincide. A bishop, *sermo* 340 shows, is good not only because he has worked out a good strategy for the future of his local church or shows himself to be a skilled administrator who keeps the finances well organized. Above all, a good bishop also

knows himself anchored in the community he has to lead. His function and responsibilities do not separate him from his people. Feeling part of the community is the basis for good leadership. This means the leader should not place himself above the community: that is, he has to be humble. Indeed, he can do well only when he is able to experience the power of consolation and encouragement. Thus, unity is not only posited as essential for the community, but also within the leader, who should be *integer*: *praxis* and intentions should be one (*sermo* 340a).

Success through temperance

In order to maintain the community and provide stability for the group members, the Augustinian leader strives for success, albeit through temperance. To him, success is equal to the durability of the community and to attain this, temperance is the required attitude (*Praeceptum* 1,3). The Stoic *ne quid nimis* principle ("nothing in excess") is central to Augustine's thought on this matter (Lawless, 1987). Too little or too much of anything is not desirable. He writes: "Not that he [the superior] must give everyone an equal share, because you are not all of equal strength, but he must give to each one what he personally needs." Thus, in *Praeceptum* 1,2 (397/1967), he translates the Stoic *ne quid nimis* principle into specific guidelines (Lawless, 1987; Van Geest, 2020). To illustrate his point, Augustine uses the example of Sergius Orata, a wealthy entrepreneur and inventor in the Roman Empire (n.d./1970). This man owned luxurious spas and was astute. However, due to his perceptiveness, he knew all too well that all his possessions could be lost due to some adversity. Augustine's conclusion in his *De beata vita* was that this fear of losing his possessions kept him from achieving true happiness. The same is true, however, for the poor whose worry stems from the lack they experience. In order to achieve true happiness, one should have just enough of everything in order not to worry about providing for one's own community while also not living in fear of losing the acquired wealth. To know when "wealth sufficiency"—that is, success—is achieved, wisdom (Lat.: *prudentia*) is needed. A wise and successful person is one who knows how to live with temperance.

Furthermore, Augustine states that *temperantia* is not a virtue solely applicable to the amount of personal or communal wealth. He also connects this concept to living a balanced life (Lawless, 1987; n.d./1970, IV.25). Augustine identifies seven—mutually interacting—"layers" constituting a balanced life (n.d./1970, IV.25; Van Geest, 2004). First, no life exists without body and breath. The second layer consists of the senses, e.g., seeing, feeling, and tasting. The intellectual abilities, as well as manual and artistic competencies, of human beings form the third part. The fourth aspect of the balanced life is morality. The final three layers form the transcendent part of human life, with the soul becoming one with God as the final layer. Modesty, or temperance, is essential for development of the soul and for living a balanced life and should be visible through humility. Augustine even states that a leader should be cured from *superbia* ("pride"), and this would be seen to be accomplished when the person becomes humble. In the fourth chapter of his *Praeceptum* (397/1967), Augustine begins by pointing out to his confreres that they must not try to stand out by their clothes, but by their attitude to life. The reason for that is that only a humble person can relate to others in a way that helps them grow and live an ordered life in contentment.

Neighboring leadership concepts

The Augustinian view on leadership contributes to the understanding of leadership centered on the organization as a community and containing moral dimensions. In this field, several leadership constructs already exist. In our comparison with neighboring constructs, the focus will be on servant leadership, transformational leadership and LMX. This is because these theories have generated a great deal of interest in leadership research and they either contain a moral component (servant and transformational leadership) or have a relational focus (LMX). For that reason, we do not consider other leadership theories, such as authentic leadership, where the main focus is on the authenticity of the leader. Augustinian leadership, we argue, can be differentiated from these leadership styles. The summary of our discussion can be found in Table 1.

While servant leadership focuses on the individual, the proposed Augustinian view on leadership prioritizes building a community. Community building has been considered a vital ingredient for servant leadership (Laub, 1999), but Barbuto and Wheeler (2006) conclude that this characteristic does not belong in the Servant Leadership Questionnaire since it is not unique to this leadership style. Moreover, in the systematic review on servant leadership by Eva et al. (2019) only one of the three recommended measures of servant leadership behavior contains items on the communal focus of the leader. In this measure, the SL-7 compiled by Liden et al. (2015), the community consists of the organization's surroundings. Adding to this, Yukl (2010) states that servant leaders prioritize social responsibility over short-term performance of the organization. While this may seem laudable, it also makes it more difficult for the leader to resolve the conflicting needs of team members and the organization (p. 421). In Augustinian thinking, this problem is less likely to arise because the leader is not called to serve in the first place—although serving is an important aspect of Augustinian leadership (Shirin, 2014). However, the Augustinian leader is expected to exercise authority when the situation calls for it.

The fact that Augustinian leadership gives priority to building a community also makes it possible to distinguish this leadership style as a complement to transformational leadership. The latter is mainly oriented toward idealized influence, or charisma (that is, at the person and behavior of the leader) (Bass, 1999; Yukl, 2010; Van Knippenberg and Sitkin, 2013). Through this behavior, characterized by idealized influence and intellectual stimulation, the leader is expected to align the personal interests of followers with the interests of the organization (Bass, 1999). Transformational and Augustinian leadership share some resemblance on this point, because followers should be oriented to communal interests above self-interest. However, all members of the organization going in the same direction is not the same thing as forming a community. In the proposed model of Augustinian leadership, a reciprocal relationship between individual flourishing and serving communal goals is a core ingredient of forming a closely knit community. Moreover, in order to achieve alignment of interests, the transformational leader starts with a vision and by articulating this he engenders respect and loyalty in the followers (Banks et al., 2016). Thus, the leader and his actions are the primary focus of this leadership style, which distinguishes this style from Augustinian leadership, since the proposed leadership framework emphasizes the importance of the community over the individual importance of either the leader or the follower. Finally, the communal focus of the Augustinian leader

TABLE 1 Comparison of Augustinian leadership with neighboring leadership constructs.

	Augustinian leadership	Servant leadership	Transformational leadership	Leader-member exchange theory of leadership
Nature of theory	Normative	Normative	Normative	Descriptive
Role of leader	To create a lasting, successful community	To serve followers	To inspire followers to pursue organizational goals	To develop positive relationships with followers
Role of follower	To serve the communal goals	To become wiser, freer, more autonomous	To pursue organizational goals	To develop positive relationships with leaders
Moral component	Explicit	Explicit	Unspecified	Unspecified
Moral contents	Veracity, moral development	Moral development	Unspecified	Unspecified
Outcomes expected	Affective commitment, employee well-being, organizational success and endurance	Follower satisfaction, and commitment to service, societal betterment	Goal congruence, increased effort, satisfaction, and productivity, organizational gain	High LMX-satisfaction, mutual trust, increased effort
Individual level	Desire to build community	Desire to serve	Desire to lead	Desire to relate
Interpersonal level	Leader empathically helps follower develop	Leader serves follower	Leader inspires follower	Leader exchanges with follower
Group level	Leader creates boundary conditions within which members act autonomously	Leader serves group to serve members' needs	Leader unites group to pursue group goals	Leader develops different exchanges with each person
Organizational level	Leader strives for satisfactory profit to maintain the community	Leader prepares organization to serve community	Leader unites followers to pursue organizational goals	Unspecified
Societal level	Leader guides society through dialogue and justice	Leader leaves a positive legacy for the betterment of society	Leader inspires nation or society to pursue articulated goals	Unspecified

Adapted from Barbuto and Wheeler (2006).

distinguishes the style from LMX theory, because of the dyadic focus of the latter. Here, collectivity is defined as the aggregation of dyads (Graen and Uhl-Bien, 1995). Within these collectivities, the network of relationships which forms the leadership structure is mapped onto the task structure of the organization, analyzing relationship effectiveness. This shows the dyadic and task-oriented focus of LMX theory. It leaves out aspects of culture and the sense of belonging to a group that serve to bind the dyadic relationships together.

The Augustinian leader acknowledges the importance of communal success in the long run to provide for and maintain the community. As stated above, leaders and members are called to place communal goals above self-interest. By doing so, they ensure that they will receive what they need when the fruit of their work is distributed among the community's members. Yukl (2010) stated that in servant leadership the prioritization works the other way around, that is, the employee's interest is put at the top. This makes it more difficult for a true servant leader to make decisions that would benefit the organization in the short run while benefitting its members as well—for example, by securing employment opportunities through obtaining higher financial buffers. Theory on transformational leadership does take organizational gain into account and is aimed at inspiring followers to transcend their self-interest (Bass, 1999). Hence, this theory shows some resemblance to Augustinian leadership, though the latter explicitly strives for success through temperance and within an ethical framework characterized by veracity. This prescriptive ethical framework differs from the moral basis of transformational leadership because, in the latter theory, identifying the content of morality is left to respondents rating their leader (Bass and Steidlmeier, 1999; Hannah et al., 2014; Hoch et al., 2018).

Its emphasis on the importance and content of morality, via veracity, is expected to distinguish the Augustinian leadership style from servant and transformational leadership, because morality in these latter theories means the moral development of the follower (Bass, 1999; Barbuto and Wheeler, 2006). Moreover, with regard to servant leadership the moral component is not clearly conceptualized at all (Lemoine et al., 2019; Nullens, 2019). Leaders are expected to elevate followers' moral consciousness and their capacity to act ethically, either through exemplary behavior, e.g., *idealized behavioral influence*, or by sharing (personal) values and beliefs (Bass, 1999). According to Yukl (2010), transformational theory is a rather behavior-oriented leadership style, while servant leadership, belonging to the stream of ethical leadership, emphasizes morality and values more strongly than transformational leadership (see also: Lemoine, 2015; Hoch et al., 2018). That is why the row headed "Moral component" in Table 1 states that this aspect is "unspecified" for transformational leadership. In LMX theory, morality is never mentioned as an aspect of relationship quality, which is the main variable in this field (Mahsud et al., 2010).

Lastly, empathy is considered a distinctive aspect of Augustinian leadership compared with servant leadership, transformational leadership and LMX. In *Praeceptum 5* (Augustine, 397/1967), Augustine asks the follower and leader to open themselves to each other in order to be able to empathize with the other's person and situation. While empathy is considered to be an integral part of servant leadership by some scholars (Spears, 2010), Barbuto and Wheeler (2006) state that this construct, along with listening, is "not unique to servant leadership" (p. 319). Their conclusion after composing and testing the Servant Leadership Questionnaire is that

the items associated with empathy should be dropped. Empathy, as operationalized here, partly overlaps with the construct *individualized consideration,* which is an element of transformational leadership (Bass, 1999). However, this construct mainly focuses on the opportunity of personal and professional growth, comparable with the construct *growth* in servant leadership (Barbuto and Wheeler, 2006), and does not take into account the importance of emotions and perspective-taking (Avolio and Bass, 1995, p. 202). Finally, empathy as a core part of Augustinian leadership clearly distinguishes this theory from LMX, because in the latter this construct is not considered to be fundamental (Graen and Uhl-Bien, 1995). Rather, taking listening as a proxy for empathy, studies have found this to be an antecedent to high quality relationships, that is, high LMX (Mahsud et al., 2010; Lloyd et al., 2017).

The overall comparison between Augustinian leadership and the three neighboring styles of leadership is provided in Table 1. This table was first composed by Barbuto and Wheeler (2006) and adapted for the purposes of this paper. As they did not explicate the contents of morality, we added the row headed "*Moral contents.*"

Augustinian leadership, sense of belonging and affective commitment

Besides conceptualizing Augustinian leadership based on what it is, we aim with this paper to provide insight into the expected outcome of applying the principles of Augustinian leadership, including a mediating effect (see Figure 2, *cf.* Carasco-Saul et al., 2015). This forms a starting point for identifying the practical relevance of Augustinian leadership, with possibilities for future research to crystallize our understanding of this leadership construct and its antecedents, correlates and outcomes. For this first framework, we employ the literature on organizational commitment since this deals with the attachment of individual interests to social systems (Kanter, 1968). These systems, or communities, play a significant role in Augustinian teachings (Augustine, 397/1967). Moreover, organizational commitment has proven to be a highly relevant construct in explaining employee well-being, turnover intention and job satisfaction (Wiener et al., 1987; Mathieu and Zajac, 1990; Panaccio and Vandenberghe, 2009).

Below, we discuss our proposed conceptual framework on Augustinian leadership in relation to the extant literature. Per relationship within the model, we form a proposition which follows from the theoretical discussion.

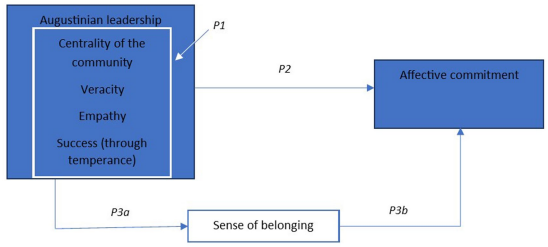


FIGURE 2
Proposed relationship between Augustinian leadership, sense of belonging, and affective commitment.

Figure 1 illustrates our model of Augustinian leadership. We identify the four dimensions by going *ad fontes*: Centrality of the community, Veracity, Empathy and Success (through temperance). Consistent with the development of other leadership scales, these four dimensions are expected to correlate strongly and function as indicators of Augustinian leadership as a latent construct (*cf.* Dahling et al., 2009). Following this, our first proposition is:

> Augustinian leadership is expected to consist of four dimensions, namely: communal focus, veracity, empathy, and success (through temperance).

Converging the work on organizational commitment and developing the Organizational Commitment Questionnaire (OCQ), Mowday et al. (1979) laid the foundation for developing further insights into this concept. In their seminal paper they define organizational commitment as "the relative strength of an individual's identification with and involvement in a particular organization" (p. 4). Although this is a multifaceted definition, it is still one definition for a layered construct. Currently, scholars agree that organizational commitment is a multidimensional construct and identify three forms of commitment: affective commitment, normative commitment and continuance commitment (Meyer and Allen, 1991; Meyer et al., 2002). We will first discuss the latter two briefly, and, since *affective commitment* is chosen as the main construct, we will dive into this construct more deeply later. Normative commitment is based on an individual's belief that he "ought to" stay, a belief that stems from internalized norms leading to the conclusion that staying with the organization is a moral obligation (Allen and Meyer, 1990). Continuance commitment is grounded on the calculative approach employees take to deciding whether to stay or leave. When leaving the organization is accompanied with (perceived) higher costs than staying, an individual will stay, and vice versa (Becker, 1960). Finally, affective commitment measures whether an individual "wants to" stay at the organization, based on emotional attachment to, identification with and involvement in the organization (Meyer and Allen, 1991). Based on this characterization of affective commitment, it is clear that the emotional aspect is complemented with an evaluative aspect. In Meyer and Allen's (1991), piece the evaluative part of affective commitment can be seen in, among other things, the importance of the fulfillment of pre-entry expectations (pp. 70 and 75). The antecedents for this form of commitment, identified by (Meyer and Allen, 1991; see also Mathieu and Zajac, 1990), are "personal characteristics," "organizational structure" and "work experiences." This last category consists of objective and subjective job characteristics, such as autonomy, organizational support and supervisor consideration (p. 71). DeCotiis and Summers (1987) identify a similar antecedent to organizational commitment, calling it "organizational processes." They state that these processes "are the way things get done in an organization" (p. 451), including leadership. Ethical leadership, with ethical climate as the mediating variable, has indeed been shown to impact affective commitment (Demirtas and Akdogan, 2015). Kim (2014) found a direct and indirect, via clan culture, effect of transformational leadership on affective commitment. Hence, because Augustinian leaders prioritize building and maintaining the community with individual consideration, we expect members of the organization to be more likely to want to stay at the organization, that is, to show affective commitment. Following this, our second proposition is:

> Augustinian leadership is expected to have a positive effect on affective commitment.

The communal focus of Augustine's thinking is not merely a postulate with conclusions on the macro-level. In his writings, he states that every human being always belongs to some group, and at the macro level to the human species. Belonging is a disposition for every person, and a gift (Augustine, 397/1967, Praeceptum 1 and 5). At the same time, the leader is called to actualize the sense of belonging (Augustine, 397/1967, Praeceptum 5). This construct is relatively new in leadership studies. Most studies related to it are conducted in educational research (e.g., Freeman et al., 2007; Allen et al., 2018). For the development of the instrument that is the sense of belonging, Hagerty and Patusky (1995) tested their scale with students, patients and Roman Catholic nuns—all individuals associated with the public sector. However, the closely related concept of organizational identification has gained a lot of scholarly attention. If a member strongly perceives himself to be part of the organization, organizational affairs become psychologically attached to the individual's perceived success (Ashforth and Mael, 1989). This process is called organizational identification and this belongs to the stream of research into social identification (Ashforth et al., 2008). Tajfel (1982), in his foundational paper on the topic of social identity theory, states that for identification two components are necessary, namely: a cognitive component that concerns "awareness of membership" and an evaluative component that means this awareness is accompanied with "some value connotations" (p. 2). A study by Cameron (2004) shows that a three-component model would be even stronger. His model consists of "Centrality," the "In-group affect" and "In-group ties." The first concept refers to the idea that not every involvement in a group is as central to an individual's self-categorization as other group memberships. Second, the in-group affect is closely related to Tajfel's evaluative component of identification, though here the emphasis is on the emotional value of group membership. The third aspect, in-group ties, is closely related to sense of belonging, because this aspect is operationalized as the extent to which individuals feel they are part of the group (Cameron, 2004, p. 243). Harris and Cameron (2005) argue that this multi-dimensional approach to identification is needed in order to explore more detailed relationships between organizational identification and its consequences. For example, in their study they find that the more emotionally relevant dimensions of identification are more strongly correlated to self-efficacy. For the purposes of this study, we focus on sense of belonging as an aspect of organizational identification.

Organizational identification has been connected to organizational commitment as an antecedent and an overlapping construct (Ashforth and Mael, 1989; Wiesenfeld et al., 2001; Riketta, 2005). It has been shown to positively impact employee performance and creativeness (Riketta, 2005; Hirst et al., 2009). Organizational factors and interpersonal factors, specifically leadership, have been identified as antecedents of organizational identification (He and Brown, 2013; Luo et al., 2022; Niu et al., 2022). For example, transactional and transformational leadership appear to have a positive impact on identification, moderated by positive and negative affectivity (Epitropaki and Martin, 2005). Based on the foregoing discussion, we expect a positive, direct relationship between Augustinian leadership and sense of belonging. Following this, our third proposition, part a, is:

> Augustinian leadership is expected to have a positive effect on sense of belonging.

Meyer and Herscovitch (2001) proposed a general model of workplace commitment with the bases of the different kinds of commitment and the connection with behavior. For this, they adopt the three-component model of organizational commitment of Meyer and Allen (1991). They identify identity and personal involvement as bases for affective commitment (Meyer and Herscovitch, 2001, p. 317). Based on this model, we expect a positive effect of sense of belonging, as a dimension of organizational identification, on affective commitment. Though these concepts have been used as synonyms, currently the consensus is that they are indeed two separate constructs (Mael and Tetrick, 1992; Riketta, 2005). The difference has been captured by stating that organizational identification is the process and commitment is the output (Meyer et al., 2004; Dávila and García, 2012). Ashforth and Mael (1989), influential scholars on this topic, state in their paper that identification is organization-specific: that is, an individual identifies with a particular organization. Commitment to organizational values can be transferred to another organization without personal, psychological costs. However, organizational identification leads to an individual feeling psychologically connected to the organization, that is, feeling as one, thus raising psychological costs if the member were to leave the organization (Van Knippenberg and Sleebos, 2006). The reason for this has to do with identification being self-referential while commitment is exchange-based (Van Knippenberg and Sleebos, 2006, p. 579). Because of this difference, Van Knippenberg and Sleebos conclude that social exchange analyses should incorporate not only the exchange component, commitment, but also concepts of self-definition, such as organizational identification.

Several studies have found a positive effect of organizational identification on affective commitment. For example, Bergami and Bagozzi (2000) have shown that cognitive organizational identification leads to affective commitment, with the latter defined specifically as emotional attachment. In their analysis, they tested a reciprocal relationship between identification and commitment but did not find an effect of commitment on identification (p. 570). Others find the constructs to be distinctive, although they show some overlap (e.g., Edwards, 2005; Van Knippenberg and Sleebos, 2006). Organizational identification is shown to correlate more strongly with extra-role behavior and job involvement, while (affective) organizational commitment is stronger correlated to job satisfaction and intent to stay (Riketta, 2005). Concluding, we expect sense of belonging, as a dimension of organizational identification, to positively affect affective commitment. Following this, our third proposition, part b, is:

> Sense of belonging is expected to have a positive effect on affective commitment.

Conclusion and suggestions for future research

Leaving the focus on power and on the individual displayed by other leadership theories, we propose Augustinian leadership as a leadership style that answers the call for more communally focused and morally laden leadership constructs. This style of leadership is

theoretically distinct from neighboring leadership constructs such as servant leadership and transformational leadership. Moreover, we provided a testable framework with propositions, thus providing clarity about the potential practical relevance of Augustinian leadership. The next step would be to test this framework and statistically assess the distinctiveness of Augustinian leadership compared to closely related theories of leadership.

The first edition of the Augustinian leadership scale has been developed and a face validity check with experts has been performed (Boateng et al., 2018). This scale was tested in a pre-study with 399 respondents recruited via Prolific, a platform recommended by Eyal et al. (2021). We are currently in the phase of evaluating the survey items. Through this process we will identify the items needed in the following phase of scale development and items that should be added or dropped. When this has been done, we will administer the scale on a similarly sized sample (Churchill, 1979). On this data we will perform an exploratory factor analysis to determine whether the proposed model of Augustinian leadership, with four dimensions, is present in the data (Boateng et al., 2018).

For this first conceptualization of Augustinian leadership, we identified four subconstructs. Future research into this leadership construct could dive deeper into *humilitas* and *auctoritas* as concepts influencing Augustine's view on leadership and leader behaviors.In addition to the proposed conceptual framework, future work on Augustinian leadership could look into other positive organizational outcomes—for example, extra-role behavior or turnover intention. Besides affective commitment, other positive outcomes correlated with Augustinian leadership could be employee well-being, with affective commitment as mediating variable (Meyer et al., 2002), and flourishing in the midst of turbulence (Urick et al., 2021). This leadership style could also benefit from studies looking into its contingencies. For example, individuals' personalities or the industry context might affect the interaction between Augustinian leadership and expected positive outcomes (*cf.* Epitropaki and Martin, 2005).

Practical implications

As a form of positive leadership, Augustinian leadership could help us better understand which personal strengths and characteristics would be favorable when selecting leaders within organizations. With its emphasis on creating a community with clear moral boundaries (that is, in turn, fertile ground for positive work outcomes), Augustinian leadership would be advantageous for organizations as well as individuals to tap into Augustine's thinking and the lessons we can learn from him today.

Given the meritorious nature of this leadership style inside the organization, it could also serve as a construct to be taught in business administration and executive education. This would offer students a more diverse view on leadership, adding the communal and morally laden approach to the transactional and power-focused styles of leadership. With its explicit moral component and an ethical framework characterized by veracity, Augustinian leadership could also prove useful as a complement to transformational leadership, which is a style already well received in consultancy and executive education.

Finally, because the Augustinian leader combines an empathic approach with guidance for the community via a clear ethical framework, this leadership construct is likely to be useful in the modern world, which is facing a great deal of turbulence. Understanding and attending to the individual needs of members of the community while also providing clarity on what is "right" are expectedly ingredients in maintaining hope for a better, more stable future.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

HS, PG, and HC contributed to the conception of this study. HS wrote the first draft of the manuscript. PG wrote sections of the manuscript. All authors contributed to the article and approved the submitted version.

Acknowledgments

The authors thank Hans Alderliesten for his helpful feedback on an earlier version of this paper. Furthermore, they are grateful for the helpful comments they received from three reviewers as well as from the editors of this special issue.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

References

Allen, K., Kern, M. L., Vella-Brodrick, D., Hattie, J., and Waters, L. (2018). What schools need to know about fostering school belonging: a meta-analysis. *Educ. Psychol. Rev.* 30, 1–34. doi: 10.1007/s10648-016-9389-8

Allen, N. I., and Meyer, J. P. (1990). The measurement and antecedents of affective, continuance, and normative commitment to the organization. *J. Occup. Psychol.* 63, 1–18.

Ashforth, B. E., Harrison, S. H., and Corley, K. G. (2008). Identification in organizations: an examination of four fundamental questions. *J. Manag.* 34, 325–374. doi: 10.1177/0149206308316059

Ashforth, B. E., and Mael, F. (1989). Social identity theory and the organization. *Acad. Manag. Rev.* 14, 20–39. doi: 10.2307/258189

Augustine (1866). "De doctrina christiana" in *Corpus Scriptorum Ecclesiasticorum Latinorum*. ed. J. Vahlen (Vienna: Verlag der Österreichischen Akademie der Wissenschaften), vol. 80, 3–169. Original work published 397

Augustine (1961). In epistolam Johannis ad Parthos. In P. Agaësse (intr., ed., trans.), *Commentaire de la première épître de S. Jean*. Paris: Cerf (*SC* 73). Original work published 415.

Augustine (1967). "Praeceptum" in *La règle de saint Augustin*. ed. L. Verheijen (Paris: Etudes Augustiniennes) Original work published 397

Augustine (1970). "De beata vita" in *Corpus Christianorum series Latina*. The Academic Board of Corpus Christianorum. (Turnhout: Typographi Brepols) Original publication date unknown

Avolio, B. J., and Bass, B. M. (1995). Individual consideration viewed at multiple levels of analysis: a multi-level framework for examining the diffusion of transformational leadership. *Leadersh. Q.* 6, 199–218. doi: 10.1016/1048-9843(95)90035-7

Banks, G. C., McCauley, K. D., Gardner, W. L., and Guler, C. E. (2016). A meta-analytic review of authentic and transformational leadership: a test for redundancy. *Leadersh. Q.* 27, 634–652. doi: 10.1016/j.leaqua.2016.02.006

Barbuto, J. E., and Wheeler, D. W. (2006). Scale development and construct clarification of servant leadership. *Group Org. Manag.* 31, 300–326. doi: 10.1177/1059601106287091

Bass, B. M. (1999). Two decades of research and development in transformational leadership. *Eur. J. Work Organ. Psy.* 8, 9–32. doi: 10.1080/135943299398410

Bass, B. M., and Steidlmeier, P. (1999). Ethics, character, and authentic transformational leadership behavior. *Leadersh. Q.* 10, 181–217. doi: 10.1016/S1048-9843(99)00016-8

Becker, H. S. (1960). Notes on the concept of commitment. *Am. J. Sociol.* 66, 32–40. doi: 10.1086/222820

Bergami, M., and Bagozzi, R. P. (2000). Self-categorization, affective commitment and group self-esteem as distinct aspects of social identity in the organization. *Br. J. Soc. Psychol.* 39, 555–577.

Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quiñonez, H. R., and Young, S. L. (2018). Best practices for developing and validating scales for health, social, and behavioral research: a primer. *Front. Public Health* 6. doi: 10.3389/fpubh.2018.00149

Buber, M. (1923/1978). *Ik en gij: met een epiloog [Ich und Du]* (HoutenI. J.van, Trans.). Utrecht: Bijleveld. Original work published 1923.

Burt, D. X. (1999). *Friendship and society. An introduction to Augustine's practical philosophy*. Grand Rapids, MI/Cambridge, MA: William B. Eerdmans Publishing Company.

Cameron, J. E. (2004). A three-factor model of social identity. *Self Identity* 3, 239–262. doi: 10.1080/13576500444000047

Carasco-Saul, M., Kim, W., and Kim, T. (2015). Leadership and employee engagement: proposing research agendas through a review of literature. *Hum. Resour. Dev. Rev.* 14, 38–63. doi: 10.1177/1534484314560406

Churchill, G. A. Jr. (1979). A paradigm for developing better measures of marketing constructs. *J. Mark. Res.* 16, 64–73. doi: 10.1177/002224377901600110

Dahling, J. J., Whitaker, B. G., and Levy, P. E. (2009). The development and validation of a new Machiavellianism scale. *J. Manag.* 35, 219–257. doi: 10.1177/0149206308318618

Dávila, M. C., and García, G. J. (2012). Organizational identification and commitment: correlates of sense of belonging and affective commitment. *Span. J. Psychol.* 15, 244–255.

De Luque, M. S., Washburn, N. T., Waldman, D. A., and House, R. J. (2008). Unrequited profit: how stakeholder and economic values relate to subordinates' perceptions of leadership and firm performance. *Adm. Sci. Q.* 53, 626–654. doi: 10.2189/asqu.53.4.626

DeCotiis, T. A., and Summers, T. P. (1987). A path analysis of a model of the antecedents and consequences of organizational commitment. *Hum. Relat.* 40, 445–470. doi: 10.1177/001872678704000704

Demirtas, O., and Akdogan, A. A. (2015). The effect of ethical leadership behavior on ethical climate, turnover intention, and affective commitment. *J. Bus. Ethics* 130, 59–67. doi: 10.1007/s10551-014-2196-6

Drecoll, V. H. (2002). Etiam posteris aliquid profuturum. Zur Selbststilisierung bei Augustin und der Beeinflussung der eigenen Wirkungsgeschichte durch Bücher und Bibliothek. *Rev. étud. augustin.* 47, 313–335.

Drecoll, V. H. (2020). "Grace" in *The Cambridge companion to Augustine's "confessions"*. ed. T. Toom (Cambridge: Cambridge University Press), 107–122.

Edwards, M. R. (2005). Organizational identification: a conceptual and operational review. *Int. J. Manag. Rev.* 7, 207–230. doi: 10.1111/j.1468-2370.2005.00114.x

Epitropaki, O., and Martin, R. (2005). The moderating role of individual differences in the relation between transformational/transactional leadership perceptions and organizational identification. *Leadersh. Q.* 16, 569–589. doi: 10.1016/j.leaqua.2005.06.005

Eva, N., Robin, M., Sendjaya, S., Van Dierendonck, D., and Liden, R. C. (2019). Servant leadership: a systematic review and call for future research. *Leadersh. Q.* 30, 111–132. doi: 10.1016/j.leaqua.2018.07.004

Eyal, P., David, R., Andrew, G., Zak, E., and Ekaterina, D. (2021). Data quality of platforms and panels for online behavioral research. *Behav. Res. Methods* 54, 1643–1662. doi: 10.3758/s13428-021-01694-3

Freeman, T. M., Anderman, L. H., and Jensen, J. M. (2007). Sense of belonging in college freshmen at the classroom and campus levels. *J. Exp. Educ.* 75, 203–220. doi: 10.3200/JEXE.75.3.203-220

Fromm, E. (1956). *The art of loving: an enquiry into the nature of love*. New York: Harper & Row Publishers.

Graen, G. B., and Uhl-Bien, M. (1995). Relationship-based approach to leadership: development of leader-member exchange (LMX) theory of leadership over 25 years: applying a multi-level multi-domain perspective. *Leadersh. Q.* 6, 219–247. doi: 10.1016/1048-9843(95)90036-5

Hagerty, B. M., and Patusky, K. (1995). Developing a measure of sense of belonging. *Nurs. Res.* 44, 9–13. doi: 10.1097/00006199-199501000-00003

Hannah, S. T., Sumanth, J. J., Lester, P., and Cavarretta, F. (2014). Debunking the false dichotomy of leadership idealism and pragmatism: critical evaluation and support of newer genre leadership theories. *J. Organ. Behav.* 35, 598–621. doi: 10.1002/job.1931

Harris, G. E., and Cameron, J. E. (2005). Multiple dimensions of organizational identification and commitment as predictors of turnover intentions and psychological well-being. *Can. J. Behav. Sci.* 37, 159–169. doi: 10.1037/h0087253

He, H., and Brown, A. D. (2013). Organizational identity and organizational identification: a review of the literature and suggestions for future research. *Group Org. Manag.* 38, 3–35. doi: 10.1177/1059601112473815

Hirst, G., Van Dick, R., and Van Knippenberg, D. (2009). A social identity perspective on leadership and employee creativity. *J. Organ. Behav.* 30, 963–982. doi: 10.1002/job.600

Hoch, J. E., Bommer, W. H., Dulebohn, J. H., and Wu, D. (2018). Do ethical, authentic, and servant leadership explain variance above and beyond transformational leadership? A meta-analysis. *J. Manage.* 44, 501–529. doi: 10.1177/0149206316665461

Hogg, M. A. (2001). A social identity theory of leadership. *Personal. Soc. Psychol. Rev.* 5, 184–200. doi: 10.1207/S15327957PSPR0503_1

Kanter, R. M. (1968). Commitment and social organization: a study of commitment mechanisms in utopian communities. *Am. Sociol. Rev.* 33, 499–517. doi: 10.2307/2092438

Kelloway, E. K., Weigand, H., Mckee, M. C., and Das, H. (2013). Positive leadership and employee well-being. *J. Leadersh. Organ. Stud.* 20, 107–117. doi: 10.1177/1548051812465892

Kim, H. (2014). Transformational leadership, organizational clan culture, organizational affective commitment, and organizational citizenship behavior: a case of South Korea's public sector. *Public Organ. Rev.* 14, 397–417. doi: 10.1007/s11115-013-0225-z

Knez, I. (2016). Toward a model of work-related self: a narrative review. *Front. Psychol.* 7. doi: 10.3389/fpsyg.2016.00331

Köpf, U. (2007). "Die Regula Augustini (Augustinregel)" in *Augustin Handbuch*. ed. V. H. Drecoll (Tübingen: Mohr Siebeck), 565–570.

Laub, J. A. (1999). *Assessing the servant organization: Development of the servant organizational leadership assessment (SOLA) instrument*. Boca Raton: Florida Atlantic University.

Lawless, G. (1987). *Augustine of hippo and his monastic rule*. Oxford: Clarendon Press.

Lemoine, G. J. (2015). Closing the leadership circle: building and testing a contingent theory of servant leadership (Doctoral dissertation, Georgia Institute of Technology).

Lemoine, G. J., Hartnell, C. A., and Leroy, H. (2019). Taking stock of moral approaches to leadership: an integrative review of ethical, authentic, and servant leadership. *Acad. Manag. Ann.* 13, 148–187. doi: 10.5465/annals.2016.0121

Levinas, E. (1994). *Tussen ons: Essays over het denken-aan-de-ander [Entre nous]* (KalshovenA., Trans.). Baarn: Uitgeverij Ambo. Original work published 1991.

Liden, R. C., Wayne, S. J., Meuser, J. D., Hu, J., Wu, J., and Liao, C. (2015). Servant leadership: validation of a short form of the SL-28. *Leadersh. Q.* 26, 254–269. doi: 10.1016/j.leaqua.2014.12.002

Lloyd, K. J., Boer, D., and Voelpel, S. C. (2017). From listening to leading: toward an understanding of supervisor listening within the framework of leader-member exchange theory. *Int. J. Bus. Commun.* 54, 431–451. doi: 10.1177/2329488415572778

Luo, Y., Zhang, Z., Chen, Q., Zhang, K., Wang, Y., and Peng, J. (2022). Humble leadership and its outcomes: a meta-analysis. *Front. Psychol.* 13. doi: 10.3389/fpsyg.2022.980322

Mael, F. A., and Tetrick, L. E. (1992). Identifying organizational identification. *Educ. Psychol. Meas.* 52, 813–824. doi: 10.1177/0013164492052004002

Mahsud, R., Yukl, G., and Prussia, G. (2010). Leader empathy, ethical leadership, and relations-oriented behaviors as antecedents of leader-member exchange quality. *J. Manag. Psychol.* 25, 561–577. doi: 10.1108/02683941011056932

Mathieu, J. E., and Zajac, D. M. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychol. Bull.* 108, 171–194. doi: 10.1037/0033-2909.108.2.171

Meyer, J. P., and Allen, N. J. (1991). A three-component conceptualization of organizational commitment. *Hum. Resour. Manag. Rev.* 1, 61–89. doi: 10.1016/1053-4822(91)90011-Z

Meyer, J. P., Becker, T. E., and Vandenberghe, C. (2004). Employee commitment and motivation: a conceptual analysis and integrative model. *J. Appl. Psychol.* 89, 991–1007. doi: 10.1037/0021-9010.89.6.991

Meyer, J. P., and Herscovitch, L. (2001). Commitment in the workplace: toward a general model. *Hum. Resour. Manag. Rev.* 11, 299–326. doi: 10.1016/S1053-4822(00)00053-X

Meyer, J. P., Stanley, D. J., Herscovitch, L., and Topolnytsky, L. (2002). Affective, continuance, and normative commitment to the organization: a meta-analysis of antecedents, correlates, and consequences. *J. Vocat. Behav.* 61, 20–52. doi: 10.1006/jvbe.2001.1842

Mo, S., and Shi, J. (2017). Linking ethical leadership to employees' organizational citizenship behavior: testing the multilevel mediation role of organizational concern. *J. Bus. Ethics* 141, 151–162. doi: 10.1007/s10551-015-2734-x

Mowday, R. T., Steers, R. M., and Porter, L. W. (1979). The measurement of organizational commitment. *J. Vocat. Behav.* 14, 224–247. doi: 10.1016/0001-8791(79)90072-1

Niu, L., Xia, W., and Liu, Y. (2022). The double-edged sword effect of ethical leadership on constructive deviance: an integrated model of two approaches based on organizational identification and normative conflict. *Front. Psychol.* 13. doi: 10.3389/fpsyg.2022.892395

Nohria, N., and Khurana, R. (2010). "Advancing leadership theory and practice" in *Handbook of leadership theory and practice*. eds. N. Nohria and R. Khurana (Boston, MA: Harvard Business Press)

Nullens, P. (2019). The will to serve: an anthropological and spiritual foundation for leadership. In L. Bouckaert and HeuvelS. C. van den (eds.), *Servant leadership, social entrepreneurship and the will to serve: Spiritual foundations and business applications*, 3–27. London: Palgrave Macmillan.

Panaccio, A., and Vandenberghe, C. (2009). Perceived organizational support, organizational commitment and psychological well-being: a longitudinal study. *J. Vocat. Behav.* 75, 224–236. doi: 10.1016/j.jvb.2009.06.002

Pollmann, K., and Otten, W. (2013). *The Oxford historical guide of the reception of Augustine (Vols. 1-3)*. Oxford: Oxford University Press.

Riketta, M. (2005). Organizational identification: a meta-analysis. *J. Vocat. Behav.* 66, 358–384. doi: 10.1016/j.jvb.2004.05.005

Rosette, A. S., and Tost, L. P. (2010). Agentic women and communal leadership: how role prescriptions confer advantage to top women leaders. *J. Appl. Psychol.* 95, 221–235. doi: 10.1037/a0018204

Schrama, M. (1991). Praeposito tamquam patri oboediatur. Augustinus über Frieden und Gehorsam. *Augustiniana* 41, 847–878.

Sendjaya, S. (2005). Morality and leadership: examining the ethics of transformational leadership. *J. Acad. Ethics* 3, 75–86. doi: 10.1007/s10805-005-0868-7

Shirin, A. V. (2014). Is servant leadership inherently Christian? *J. Relig. Bus. Ethics* 3:13.

Spears, L. C. (2010). Character and servant leadership: ten characteristics of effective, caring leaders. *J. Virtues Leadersh.* 1, 25–30.

Steffens, N. K., Munt, K. A., van Knippenberg, D., Platow, M. J., and Haslam, S. A. (2021). Advancing the social identity theory of leadership: a meta-analytic review of leader group prototypicality. *Organ. Psychol. Rev.* 11, 35–72. doi: 10.1177/2041386620962569

Tajfel, H. (1982). Social psychology of intergroup relations. *Annu. Rev. Psychol.* 33, 1–39. doi: 10.1146/annurev.ps.33.020182.000245

Urick, A., Carpenter, B. W., and Eckert, J. (2021). Confronting COVID: crisis leadership, turbulence, and self-care. *Front. Educ.* 6. doi: 10.3389/feduc.2021.642861

Van Bavel, T. J. (1959). Parallèles, vocabulaire et citations bibliques de la Regula sancti Augustini. Contribution au problème de son authenticité. *Augustiniana* 9, 12–77.

Van Bavel, T. J. (1996). Natural en spiritual relationships in Augustine. *Augustiniana* 46, 197–242.

Van Dierendonck, D. (2011). Servant leadership: a review and synthesis. *J. Manag.* 37, 1228–1261. doi: 10.1177/0149206310380462

Van Geest, P. J. J. (2004). "Stoic against his will? Augustine on the good life in *De beata vita* and the *Praeceptum*" in *Mélanges offerts à T.J. van Bavel à l'occasion de son 80e anniversaire*. eds. B. Bruning and J. L. C. Quy (Leuven: Peeters Publishers), 532–550.

Van Geest, P. J. J. (2007). "Ethik" in *Augustin-Handbuch*. ed. V. H. Drecoll (Tübingen: Morh Siebeck), 526–539.

Van Geest, P. J. J. (2011). *The incomprehensibility of god: Augustine as a negative theologian*. Leuven: Peeters Publishers.

Van Geest, P. J. J. (2017). Quae ad veritatem ac beatitudinem via (De vera religione III,3): Augustine on truth outside time and space which can nonetheless be encountered. *Filosofia e Teologia* 31, 427–443.

Van Geest, P. J. J. (2020). "The rule of Augustin" in *A companion to medieval religious rules and customaries*. ed. K. Pansters (Leiden: Brill), 126–153.

Van Knippenberg, D., and Sitkin, S. B. (2013). A critical assessment of charismatic—transformational leadership research: back to the drawing board? *Acad. Manag. Ann.* 7, 1–60. doi: 10.5465/19416520.2013.759433

Van Knippenberg, D., and Sleebos, E. (2006). Organizational identification versus organizational commitment: self-definition, social exchange, and job attitudes. *J. Organ. Behav.* 27, 571–584. doi: 10.1002/job.359

Verheijen, L. (1980). *Nouvelle Approche de la r'gle de Saint Augustin*. Bégrolles-en-Mauges: Abbaye de Bellefontaine.

Wang, G., Oh, I. S., Courtright, S. H., and Colbert, A. E. (2011). Transformational leadership and performance across criteria and levels: a meta-analytic review of 25 years of research. *Group Org. Manag.* 36, 223–270. doi: 10.1177/1059601111401017

Wiener, Y., Muczyk, J. P., and Gable, M. (1987). Relationships between work commitments and experience of personal well-being. *Psychol. Rep.* 60, 459–466. doi: 10.2466/pr0.1987.60.2.459

Wiesenfeld, B. M., Raghuram, S., and Garud, R. (2001). Organizational identification among virtual workers: the role of need for affiliation and perceived work-based social support. *J. Manag.* 27, 213–229. doi: 10.1177/014920630102700205

Yukl, G. A. (2010). *Leadership in organizations* (*7th ed.*). Upper Saddle River, NJ: Pearson Prentice Hall.

Zhang, Z., and Song, P. (2020). Multi-level effects of humble leadership on employees' work well-being: the roles of psychological safety and error management climate. *Front. Psychol.* 11. doi: 10.3389/fpsyg.2020.571840

Zumkeller, A. (1968). *Das Mönchtum des heiligen Augustinus: Cassiciacum 11* (*2nd ed.*). Würzburg: Augustinus-Verlag.

frontiers | Frontiers in Psychology

TYPE Original Research
PUBLISHED 03 August 2023
DOI 10.3389/fpsyg.2023.1148294

OPEN ACCESS

EDITED BY
Steven Van Den Heuvel,
Evangelical Theological Faculty, Belgium

REVIEWED BY
Arlene Walker,
Deakin University, Australia
Jasmijn Van Harten,
Utrecht University, Netherlands
Razia Sultana,
Al Yamamah University, Saudi Arabia

*CORRESPONDENCE
Omar Habets
✉ omar.habets@zuyd.nl

RECEIVED 19 January 2023
ACCEPTED 14 June 2023
PUBLISHED 03 August 2023

CITATION
Habets O, Peters P, Van der Heijden B, Stoffers J, Blomme R and Liao S (2023) Do you really want to hurt me? The impact of contextual factors on the moderating role of dark leadership in the relationships between learning climate facilitation, employability and turnover intention in the Netherlands and China.
Front. Psychol. 14:1148294.
doi: 10.3389/fpsyg.2023.1148294

Do you really want to hurt me? The impact of contextual factors on the moderating role of dark leadership in the relationships between learning climate facilitation, employability and turnover intention in the Netherlands and China

Omar Habets[1]*, Pascale Peters[2,3], Beatrice Van der Heijden[4,5,6,7,8], Jol Stoffers[1,5,9], Robert Blomme[2,5] and Shudi Liao[7,10,11]

[1]Research Centre for Employability, Zuyd University of Applied Sciences, Sittard, Netherlands, [2]Center for Strategy, Organization and Leadership, Nyenrode Business Universiteit, Breukelen, Netherlands, [3]Department of Organisation, Leadership and Management, Inland School of Business and Social Sciences, Lillehammer, Norway, [4]Institute for Management Research, Radboud University, Nijmegen, Netherlands, [5]Faculty of Management, Open Universiteit, Heerlen, Netherlands, [6]Department of Marketing, Innovation and Organisation, Ghent University, Ghent, Belgium, [7]Business School, Hubei University, Wuhan, China, [8]Kingston Business School, Kingston University, Kingston upon Thames, United Kingdom, [9]Research Centre for Education and the Labour Market (ROA), Maastricht University, Maastricht, Netherlands, [10]Hubei Center for Studies of Human Capital Development Strategy and Policy, Wuhan, China, [11]Key Research Base of Humanities and Social Science of Hubei Province, Wuhan, China

Introduction: Both the Dutch and Chinese labor markets experience severe shortages of skilled personnel and high turnover rates, being distressing socio-economic factors. At the same time, large cross-cultural studies indicate that these national contexts are highly different from a socio-cultural perspective. When considering issues on employee development and retainment, the public debate opens for negative attributes as dark leadership, wondering if employees accept to be hurt. This study contributes to the employability research and, moreover, it contributes to the call for the ability to contextualize theories and to the convergence/divergence debate. We applied Western theories to investigate possible contextual differences in the relationships between learning climate facilitation and turnover intention, and to investigate whether this relationship is mediated by employability, and whether dark leadership is a possible moderator.

Methods: To test our hypotheses, we collected data from 368 Dutch and 319 Chinese respondents who participate in an executive master's program, which was analyzed using PLS-Structural Equation Modeling.

Results: Employees in the Netherlands and China were found to interpret our study variables differently. Separate analyses revealed that, in both contexts, learning climate facilitation was both directly and indirectly, via the balance dimension of employability, negatively related to turnover intention. In addition, in the Dutch sample, dark leadership appeared to weaken the relationship between learning climate facilitation and the corporate sense dimension of employability, but the latter did not seem to be a mediator in the relationship with turnover intention. In the Chinese sample, no moderation effects were found.

Discussion: Our results show that both learning climate facilitation and dark leadership are important factors in the development and retainment of personnel and that particularly focusing on 'balancing group and individual goals' is important to retain personnel, regardless of national context. The latter may indicate the need for convergence of HR practices. At the same time, however, the different interpretations of the study's variables may indicate divergence in the meaning of HR concepts. In the discussion section, we elaborate on the study's implications for HR-researchers and -practitioners in national and global business contexts.

KEYWORDS

learning climate facilitation, dark leadership, employability, turnover intention, cross-national

1. Introduction

Across the globe, the COVID-19 pandemic has had implications for both people's daily (e.g., health conditions, distress, and life satisfaction) and working (e.g., working from home) lives (Zhang et al., 2020). In its aftermath, in both Western and Eastern contexts, people are facing socio-economic challenges, such as dealing with substantial labor-market shortages (Cui et al., 2018; CBS, 2019) that cause difficulties for organizations to attract and retain personnel (De Winne et al., 2019). More specifically, organizations experience challenges and instability, which calls for higher levels of employee agility, curiosity, risk mitigation, learning by exploring, and learning by doing, as these characteristics can enhance organizations' survival chances and competitiveness (Levenson, 2020). In view of this, the importance of a focus on maintaining and enhancing individuals' employability and facilitating learning opportunities (Buheji and Buheji, 2020) is evident. Employability can be defined as "the continuous fulfilling, acquiring or creating of work through the optimal use of competences" (Van der Heijde and Van der Heijden, 2006, p. 453). Enhancing individuals' employability implies that organizations need to develop a learning climate that enables and motivates employees to make use of the learning opportunities offered, such that they can indeed increase their individual capabilities and performance (Van der Heijden and Bakker, 2011). Learning climate can be defined as "employees' perceptions of organizational policies and practices aimed at facilitating, rewarding and supporting employee learning behavior" (Nikolova et al., 2014b, p. 259). This three-dimensional construct refers to facilitation, appreciation, and error avoidance. This study focuses on learning climate facilitation, i.e., organizational efforts to guide, shape and accelerate the learning processes within the organization, since this dimension may help organizations to optimize employees' process of learning at work (Nikolova et al., 2014b). Particularly, it is found that facilitating employees' learning opportunities is essential for employee learning and professional development (Marsick and Watkins, 2003; Nikolova et al., 2014a).

Generally, with employability-enhancing activities, organizations may be able to reduce employees' voluntary turnover intentions (Hom et al., 2012). However, we posit that the relationship between employees' learning opportunities, employability, and turnover intention may be contingent on how employees perceive and interpret their leaders' behaviors. Recently, more attention has been paid to dark leadership, in this study operationalized by abusive supervision (Tepper, 2000), as this can affect employees' motivation to make use of the learning opportunities offered by the organization and, hence, their employability. Dark leadership is defined as "subordinates' perceptions of the extent to which supervisors engage in the sustained display of hostile verbal and nonverbal behaviors, excluding physical contact" (Tepper, 2000, p. 178). Moreover, research shows that employees who experience dark leadership are more likely to quit their jobs (Tepper et al., 2009). Perhaps, employees who perceive having options to learn and develop themselves, but perceive dark leadership at the same time, may feel they have less opportunities to make use of, or to benefit from their learning options, which may affect their employability and, in turn, may enhance their turnover intention (Acikgoz et al., 2016; Akkermans et al., 2019; Rodrigues et al., 2020).

How employees perceive and respond to Human Resource (HR) practices and leadership style, however, may be contingent on the national context in which they operate of which culture is an important factor. Context refers to the "set of factors surrounding a phenomenon that exert some direct or indirect influence on it" (Whetten, 2009, p. 31). In this vein, Western and Eastern contexts can be characterized by different socio-cultural characteristics; the Netherlands, for example, can be characterized as individualistic, whereas China can be characterized as collectivistic (House et al., 2004; Hofstede Insights, 2022). In view of the call for more context-sensitive organizational research to be able to contextualize theories (Whetten, 2009; Zhu and Warner, 2019; Xiao and Cooke, 2022), this study taps into the convergence-divergence debate as discussed by Cooke et al. (2021). Essentially, this debate started with scholars arguing for the convergence thesis, based on similarities across nations and cultures (*cf.* Harbison and Meyers, 1959), being countered by cross-cultural scholars arguing for the divergence thesis, based on differences in (cultural) norms and values (*cf.* Hofstede, 1991). Addressing the convergence-divergence debate in the Dutch and Chinese contexts gives us reason to question whether employees respond to dark leadership when it comes to the opportunities they take for learning as signaled by their organization's learning climate and its consequences for employability enhancement and, subsequently, turnover intention. Possibly, in view of the more individualistic context, Dutch employees may notice and respond to dark leadership by altering their investments in their employability and,

in turn, their turnover intention. On the contrary, for China, being a country with a more collectivistic character, this reaction of employees may differ due its different contextual characteristics. When considering issues on employee development and retainment, however, such presumed cross-cultural differences are hardly accounted for, neither in HR theory nor in practice, and it can be questioned whether that is an omission in globalizing (labor) markets, as has been discussed in the convergence/divergence debate (*cf.* Cooke et al., 2021).

This study contributes to the employability research. To the best of our knowledge, no previous research has investigated the relationships between employability and turnover intention, using a competence-based operationalization of employability. In particular, earlier work in the field of turnover intentions and behaviors has conceptualized employability as perceived job chances, both inside and outside one's current organization (i.e., perceived internal and external employability; De Cuyper et al., 2011a; Nelissen et al., 2017; Baranchenko et al., 2020). Besides, we add to what is already known in the employability literature by investigating the possible moderation effect of dark leadership in the relationship between learning value of the job and employability. Moreover, this study contributes to the call for the ability to contextualize theories and to the convergence/divergence debate. More specifically, this empirical study builds on Western theories and mechanisms to investigate possible contextual differences in the relationships between learning climate facilitation and turnover intention, and whether this relationship is mediated by employability, and whether dark leadership is a possible moderator in this regard. Figure 1 shows the conceptual model that will be tested to address our research question.

2. Conceptual framework

2.1. Perspectives from the Netherlands and China

Marked by globalization, technological developments, and broader socio-economic, geopolitical, and demographic changes, contemporary complex business contexts require organizations to focus on identifying, attracting, recruiting, developing, and retaining talent (Claus, 2019; Reiche et al., 2019). It has been acknowledged, however, that national context, with their own socio-cultural characteristics, may be an influential factor regarding these focus points. According to Hofstede Insights (2022) and the GLOBE project (House et al., 2004), the Netherlands and China differ dramatically in terms of socio-cultural contextual characteristics. According to Hofstede Insights (2022), the Netherlands is characterized as individualistic with low power distance, high uncertainty avoidance, and high indulgence, whereas China is characterized as collectivistic and as having high power distance, low uncertainty avoidance, and low indulgence. Furthermore, the particular focus on leadership in the GLOBE project shows that leaders in the Netherlands are less autonomous (i.e., the degree to which leaders are independent and individualistic) and less self-protective (i.e., the degree to which leaders focus on ensuring the safety and security of the individual and group through status enhancement and face saving) than leaders in China (House et al., 2004). In empirical research in different national contexts, it is important to note that for meaningfully comparing the mean scores of latent factors, the measurement structures underlying the latent factors used in the research (displayed through a specific set of scale items) should be stable, that is 'invariant' (Van de Schoot et al., 2015). Obviously, this is not automatically the case, especially since differences may exist in the prevalence of HR practices (e.g., career development-related ones) in the Netherlands and China (*cf.* Verburg et al., 1999; Van Dierendonck et al., 2016). Also leadership (style) is shown to be deeply rooted in the national contexts' historical developments (Lin et al., 2018), which makes us believe that leadership behaviors are portrayed differently in the Netherlands and China.

Since socio-cultural characteristics may influence the design and implementation of HR and leadership practices, and their conceptual interpretations (Kim and Wright, 2011), it is crucial to explore the role of socio-cultural characteristics when investigating constructs in different national contexts. Based on the outline given above, we have formulated the following hypothesis:

> *H1*: Employees in the Netherlands and China differ regarding their conceptual interpretation of the variables in this study (i.e., learning climate facilitation, dark leadership, employability, and turnover intention).

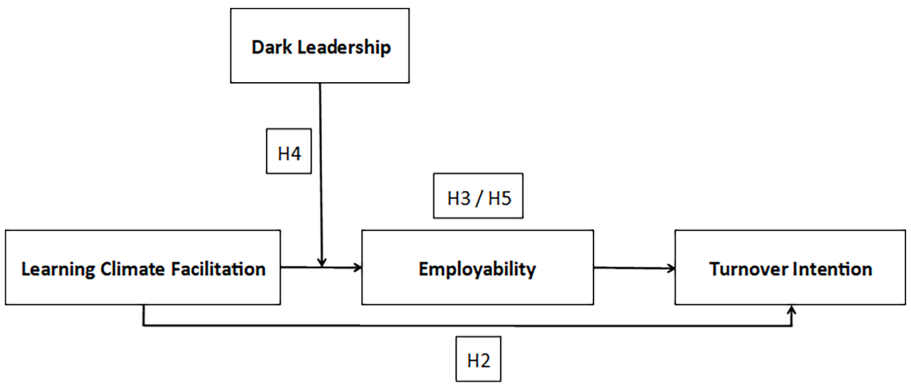


FIGURE 1
Conceptual model.

2.2. Learning climate facilitation and turnover intention

Employees' turnover intentions and their actual quitting behaviors prompt negative organizational outcomes, including financial costs (e.g., recruitment and selection) and loss of highly skilled, talented, and perhaps difficult-to-replace human resources (Lee and Liu, 2007; Hom et al., 2012). High turnover is particularly troublesome for organizations in tight labor markets, given the loss of (firm-specific and general) knowledge and skills, the transfer of that knowledge and skills to a rival organization, and potential deterrence of other employees in the future (Kraimer et al., 2009; Knocke and Schuster, 2017). At the same time, present-day work is changing at an ever-increasing rate and can be constantly restructured in nature (Fugate et al., 2021). This demands of organizations that they have a strong learning climate for their employees that enables them to cope with changing internal and external environments. Even though the construct learning climate by Nikolova et al. (2014b) is three-dimensional (i.e., facilitation, appreciation, and error avoidance), this study focusses on learning climate facilitation only. More specifically, to remain competitive in a fast-changing global economy, an organizational climate that facilitates employees' workplace learning is essential for an organization to survive (Kyndt et al., 2009; Nikolova et al., 2014b). Allen et al. (2003) already found that perceived organizational support, e.g., the facilitation of a learning climate, can reduce employee turnover. Other research also found that a learning climate reduces negative employee outcomes, such as turnover intention (Egan et al., 2004; Govaerts et al., 2011; Lin and Huang, 2021). This is particularly so since providing a high-quality learning environment signals that organizations value their employees (Egan et al., 2004; Joo, 2010). Hence, we have formulated the following hypothesis:

> *H2*: Learning climate facilitation is negatively related with turnover intentions.

2.3. The mediating role of employability in the relationship between learning climate facilitation and turnover intention

To survive in contemporary labor markets, protecting and enhancing individuals' employability is essential (De Vos and Van der Heijden, 2017; Van der Heijden and Spurk, 2019; Stoffers et al., 2020). This, however, is not the responsibility of individual employees alone. Rather, it has been widely acknowledged that organizations should support or facilitate their employees to sustain and enhance their employability (Van Harten et al., 2016; Van der Heijden et al., 2018). Research shows that a learning climate is a precursor to valuable outcomes, such as employees' learning intentions, positive attitudes toward learning, and participation in learning (Govaerts et al., 2011; Hauer et al., 2012). Indeed, employability can be stimulated by developing an organizational learning climate that promotes employee learning, resulting in the acquisition of new knowledge, skills, and abilities (Nikolova et al., 2016), which provide employees with sufficient opportunities to improve their competencies (Osagie et al., 2018), and hence, their employability (Van der Heijde and Van der Heijden, 2006; Van der Heijden et al., 2018; Crans et al., 2021). This is especially important in an environment characterized by organizational change (Nikolova et al., 2016).

However, there is no consensus on the relationship between employability and turnover intention. This knowledge gap is described in the 'traditional' flexibility/commitment paradox (management paradox) (Van der Heijde and Van der Heijden, 2006; De Cuyper and De Witte, 2011). This paradox is defined as "a tension between the contribution of employability to employee well-being and performance, on the one hand, versus its contribution to undesired turnover, on the other hand" (De Cuyper et al., 2011b, p. 1486–1487). In other words, it stresses organizations' fear of a loss of commitment and external mobility among employees with a high career potential (Van der Heijde and Van der Heijden, 2006) resulting from employability investments. Next to the 'traditional' flexibility/commitment paradox, scholars also proposed the notion of the 'inverted' flexibility/commitment paradox (Peters and Lam, 2015), which refers to employability aimed at enhancing the organizations' adaptability, flexibility, effectiveness, and efficiency. In view of this, Human Resource Management (HRM) is aimed at attracting and developing skilled and committed workers who can both easily rotate in their work (i.e., functional flexibility), and who are also focused on external mobility (Peters and Lam, 2015). In this case, the focus is on the idea that HRM's main goal of their employability policy is not to foster employees' internal labor market orientation and long-term commitment but rather to enhance both their (short-term) commitment and their flexibility and labor market mobility.

Indeed, empirical research found mixed results in the (indirect) relationship between employability and turnover intention. So far, to the best of our knowledge, all research dealing with the relationship between employability and turnover intention incorporated measures of employability conceptualizing perceived job chances at the internal and/or external labor markets. For example, Hom et al. (1992) found a positive association between employability and turnover intention and while testing the employability paradox, Nelissen et al. (2017) also found that employability relates positively to turnover intention, however, only in terms of upward career development.

On the other hand, De Cuyper et al. (2011a) found no direct relationship between employability and turnover intention, and Akkermans et al. (2019) reported that perceived investments in HR practices relate positively with organizational commitment. Recently, Rodrigues et al. (2020) found that when an organization invests in employees' career development (and in case the employee is receptive), it has a positive impact on their intention to stay with the employer, and, moreover, they found a negative association between employability and turnover intention.

Building on these mixed results, we strive to shed more light on the phenomenon by introducing a competence-based operationalization of employability (Van der Heijde and Van der Heijden, 2006; Van der Heijden et al., 2018) that mediates the negative relationship between learning climate facilitation and turnover intention. Hence, we have formulated the following hypothesis:

> *H3*: Employability mediates the negative relationship between learning climate facilitation and turnover intention.

2.4. The moderating role of dark leadership in the relationship between facilitating learning climate and employability

Scholarly work in the field of leadership focuses mainly on constructive leadership styles since leadership behavior that supports and reinforces learning can enhance employability (Stoffers et al., 2019). However, researchers in other fields have also investigated the phenomenon of dark leadership. This has not been done without reason, since research showed that destructive leadership is an enduring problem for organizations due to its adverse and expensive effects on turnover (Tepper et al., 2006). The recent literature review by Mackey et al. (2021) gave an overview of definitions for various styles of destructive leadership. Abusive supervision (Tepper, 2000) has been especially influential in the literature (Mackey et al., 2021). The recent systematic reviews on abusive supervision by Fischer et al. (2021) and Goute et al. (2021) show that Tepper (2000) definition of abusive supervision is widely used in empirical research. The reviews referred to above presented us with a rather uniform picture: abusive supervision is 'bad news' (Fischer et al., 2021). Furthermore, another recent meta-analytic review by Landay et al. (2019) indicated a concern regarding the potential prevalence of individuals with psychopathic tendencies in corporate leadership positions and the negative effects they may have on both individuals and their organizations in practice. They found a negative association for psychopathic tendencies and leadership effectiveness amongst others towards employees. The meta-analysis by Schyns and Schilling (2013) also demonstrated negative correlations between dark leadership, on the one hand, and positive follower outcomes and behaviors (e.g., attitudes toward a leader, wellbeing, and individual performance), on the other hand, and, similarly, positive correlations with negative outcomes (e.g., turnover intentions, resistance toward a leader, and counterproductive work behaviors).

To the best of our knowledge, up until now, the phenomenon of dark leadership has not been investigated in relation to workers' employability. Incorporating the possible role of dark leadership as a moderator in the relationship between facilitating learning climate and employability is crucial given the dual responsibility for employability enhancement, that is both the employee and the supervisor need to invest in these (Van der Heijden, 2005).

Possibly, employees who perceive having options to learn and to develop themselves but who perceive dark leadership at the same time, may feel less motivated due to reduced self-efficacy, and, as such, they perceive to have fewer opportunities to make use of the learning options offered by the organization. The latter may affect their employability and, ultimately, may have consequences for their turnover intention (Acikgoz et al., 2016; Akkermans et al., 2019; Le Blanc et al., 2019; Rodrigues et al., 2020). In other words, in a context in which employees experience dark leadership, employees may be less motivated and more hindered to take advantage of the learning options offered, which may affect their employability, and, indirectly, their turnover intention. Based on the outline given above, we have formulated the following hypotheses:

> *H4*: Dark leadership moderates the positive relationship between learning climate facilitation and employability, such that this relationship is weaker for employees who experience a higher degree of dark leadership.

> *H5*: The interaction effect between dark leadership and learning climate facilitation has an indirect effect through employability on turnover intention.

3. Methods

3.1. Participants and procedures

To test our hypotheses, we used a quantitative approach with a cross-sectional research design. To comply with the need to conduct more research with higher levels of contextual analysis, we gathered data from the Netherlands and China, as they experience similar socio-economic challenges, such as labor shortages and the COVID-19 pandemic but, at the same time, have different national contexts (Cui et al., 2018; CBS, 2019). China is particularly interesting to incorporate in our study as the opening-up policy and its reforms in 1978 have led to remarkable economic performance, primarily because of its abundance of cheap labor (Cui et al., 2018). Correspondingly, the Chinese labor market has experienced high-speed developments over the past decennia. More specifically, over the last three decades, HRM has emerged as a discipline and research field of interest for (Chinese) scholars (Cooke et al., 2021) making human capital a highly interesting topic to be studied empirically.

In both national contexts, respondents were approached through the research team's personal contacts (i.e., convenience sampling). They were employees at middle and higher management levels, with some years of work experience and were recruited via several part-time master's programs. In return for participating in the research, all respondents received a personalized employability report of their own employability scores set off against a benchmark. The respondents could use this in their personal development component of their master's program. The final sample comprised 382 Dutch and 319 Chinese respondents. In the Dutch sample 46% were male and 54% female, and the average age was 47.34 years (SD = 10.13). Furthermore, 79% of the respondents had a fixed contract, 12% a temporary contract, and 9% were self-employed. In the Chinese sample 59% were male and 41% female with an average age of 37.24 (SD = 4.58). In this Chinese sample, 85% had a fixed contract, 9% a temporary contract, and 6% were self-employed.

3.2. Measures

Learning climate facilitation was measured using a validated scale (Nikolova et al., 2014a,b), comprising three items. A sample item was "My organization provides appealing learning opportunities." Responses were reported using a Likert-type scale that ranged from 1 (not applicable at all) to 5 (fully applicable).

Dark leadership was measured using the abusive supervision scale (Tepper, 2000). Respondents completed Tepper (2000) 15-item measure of abusive leadership. A sample item was: "My boss tells me my thoughts or feelings are stupid." The items were scored using a Likert-type scale that ranged from 1 (strongly disagree) to 7 (strongly agree).

Employability was measured using the thoroughly validated 22-item short form version (Van der Heijden et al., 2018) of the 47-item employability five-factor instrument (Van der Heijde and Van

TABLE 1 Overview reliability and construct validity scores of the constructs.

	N	Theoretical range	Actual range	Mean	SD	Cronbach alfa	Ave.
Learning climate facilitation	687	1.00–5.00	1.00–5.00	3.24	0.90	0.85	0.77
Dark leadership	687	1.00–7.00	1.00–7.00	2.12	1.09	0.95	0.62
Occupational expertise	687	1.00–7.00	1.40–6.00	4.75	0.61	0.8	0.54
Anticipation and optimization	687	1.00–7.00	2.00–6.00	4.11	0.73	0.74	0.55
Personal flexibility	687	1.00–7.00	1.00–6.00	4.6	0.6	0.8	0.55
Corporate sense	687	1.00–7.00	1.25–6.00	4.35	0.78	0.75	0.57
Balance	687	1.00–7.00	1.50–6.00	3.88	0.77	0.75	0.55
Turnover intention	687	1.00–5.00	1.00–5.00	2.93	0.96	0.8	0.69

TABLE 2 Correlation table, numbers shown in boldface denote the square root of the average variance extracted.

	1	2	3	4	5	6	7	8
Learning climate facilitation (1)	**0.89**							
Dark leadership (2)	−0.38**	**0.7**						
Occupational expertise (3)	0.17	−0.13**	**0.73**					
Anticipation and optimization (4)	0.28**	−0.14**	0.40**	**0.74**				
Personal flexibility (5)	0.32**	−0.30**	0.50**	0.48**	**0.74**			
Corporate sense (6)	0.30**	−0.24**	0.38**	0.60**	0.52**	**0.75**		
Balance (7)	0.41**	−0.36**	0.22**	0.25**	0.34**	0.30**	**0.74**	
Turnover intention (8)	−0.52**	0.39**	−0.06	−0.22**	−0.20**	−0.25**	−0.41**	**0.83**

Significance correlations: $^{**}p < 0.01$.

der Heijden, 2006). Tests of the instrument's reliability and validity, including assessments of convergent, discriminant, and predictive validity (for career success), have yielded satisfactory psychometric results (Van der Heijden et al., 2018). The instrument comprises the following dimensions: occupational expertise (5 items); anticipation and optimization (4 items); personal flexibility (5 items); corporate sense (4 items); and balance (4 items). Sample items for employability include: "I consider myself competent to provide information on my work in a way that is comprehensible" (occupational expertise); "I consciously devote attention to applying my newly acquired knowledge and skills" (anticipation and optimization); "I adapt to developments within my organization" (personal flexibility); "I share my experience and knowledge with others" (corporate sense); and "I achieve a balance in alternating between reaching my own career goals and supporting my colleagues" (balance). All items were scored using a Likert-type scale that ranged from 1 (not at all/never) to 6 (considerable degree/very often), depending on an item's wording.

Turnover intention was measured using a 3-item scale from Camman et al. (1979). A sample item was "I often think of leaving the organization." Items were scored using a Likert-type scale that ranged from 1 (totally disagree) to 5 (totally agree).

3.3. Analyses

We conducted PLS-SEM, using the SmartPLS version 4.0.8.5 (Ringle et al., 2022). For the partial least square algorithm, we used the path weighting scheme, and we set the maximum number of iterations at 300. We used 10^-5 as our stop criterion and a uniform value of 1 as the initial value for each of the outer weights (Henseler, 2010). The sample size was acceptable using Barclay et al. (1995) rule of thumb, suggesting the use of ten times the maximum number of paths aiming at any construct in the outer and inner models. Items were based on 5-point, 6-point and 7-point Likert-scales and could be interpreted as continuous variables, thus following the fundamental OLS principles.

4. Results

4.1. Model characteristics

For the outer model evaluation, we first examined reliability. All the scales appeared to be reliable (Nunnally, 1978) and no item had to be removed (see Table 1 for all details). Second, we checked for convergent validity using Fornell and Larcker's criterion of an Average Variance Extracted (AVE) for each construct above the 0.5 benchmark (Fornell and Larcker, 1981). In this respect, we also did not have to remove any items to have sufficient convergent validity (see Table 1).

Finally, we checked for discriminant validity, comparing the AVEs of the constructs with the inter-construct correlations determining whether each latent variable shared greater variance with its own measurement variables or with other constructs (Fornell and Larcker, 1981; Chin, 1998). We compared the square root of the AVE for each construct with the correlations with all other constructs in the model (see Table 2). A correlation between constructs exceeding the square roots of their AVEs indicates that they may not be sufficiently discriminable (see Table 2 for all details). For each construct, we found that the absolute correlations did not exceed the square roots of the AVEs. As such, there was support for sufficient reliability and validity of all measurements in our research model.

4.2. Common-method variance

As this research was conducted using a self-administered survey method, we tested for Common-Method Variance (CMV) to have evidence that there is no systematic bias which might have influenced the collected data (Podsakoff et al., 2003). We used a two-step approach. First, following Podsakoff and Organ (1986), we used Harman (1976) one-factor test. Following this approach, all principal constructs were entered into one principal component factor analysis. Using SPSS Software (SPSS version 27 for MAC OS), the one-factor extraction and non-rotation method was applied. Results showed that only one factor emerged, explaining less than 50 percent of the variance (25.20%), which gives a first indication of no common-method variance. Second, we used Bagozzi's method (Bagozzi et al., 1991) which stresses that CMV occurs when the highest correlation between constructs is more than 0.9. As shown in Table 2, the highest correlation between constructs is 0.60 (correlation between Anticipation and Corporate Sense). Therefore, it appears that there is no CMV in the collected data.

4.3. Differences between the Dutch and Chinese sample

To find out whether the group of Dutch and Chinese respondents interpreted the study's core variables in a similar manner, we used the Measurement Invariance of Composite Models (MICOM) procedure (*cf.* Hair et al., 2017), which is considered a proper avenue to a group's uniqueness when exploring significant differences between two groups (Sarstedt et al., 2011; Henseler et al., 2016). The first step of the MICOM procedure is to test for configural invariance to examine whether each common factor was associated with identical item sets across the two distinguished groups. Configural invariance means that a latent variable, which has been specified equally, emerges as a unidimensional entity across the two groups (Henseler et al., 2016). As shown in Table 1, and as discussed in the previous section, all constructs showed sufficient reliability and validity for both groups and were used as an input for the next step.

As a second step, the compositional invariance was tested. The results indicate whether the latent variables are formed differently in the two groups (Henseler et al., 2016). In this analysis, the correlation (r) between, on the one hand, the composite scores using the weights obtained from the first group and, on the other hand, the composite scores using the weights obtained from the second group, were compared using a permutation test (Henseler et al., 2016). Henseler et al. (2016) proposed that the correlation r should be equal to one. If the correlation c diverges significantly from 1, no support is found for compositional invariance. To statistically test for compositional invariance, we proposed a two-step procedure. The second step comprises q permutation test over the correlation c (Chin and Dibbern, 2010). The outcomes of the second step in the permutation test yielded insufficient support for compositional invariance (Henseler et al., 2016), given that for multiple variables (i.e., corporate sense and dark leadership) the correlations c between the two distinguished groups were significantly different. As such, no support was found for compositional invariance (see Table 3). Furthermore, in step 3 (*cf.* Hair et al., 2017), in which the differences between the equal means (see Table 4) and equal variances (see Table 5) are calculated, also significant differences for most of the constructs were found.

The MICOM analysis demonstrated insufficient measurement invariance for both groups, which indicates that the group of Dutch

TABLE 3 Step 2 in the MICOM procedure.

	Original correlation	Correlation permutation mean	5.0%	Permutation *p* value
Learning climate facilitation	1	1	1	0.66
Dark leadership	1	1	1	0.04
Occupational expertise	0.89	0.94	0.84	0.11
Anticipation and optimization	0.97	0.99	0.97	0.09
Personal flexibility	0.99	0.99	0.98	0.14
Corporate sense	0.98	0.99	0.98	0.05
Balance	1	1	0.99	0.43
Turnover intention	1	1	1	0.80

TABLE 4 Step 3a in the MICOM procedure (mean).

	Original difference	Permutation mean difference	2.5%	97.5%	Permutation *p* value
Learning climate facilitation	−0.34	0.00	−0.14	0.16	0.00
Dark leadership	0.60	0.00	−0.16	0.15	0.00
Occupational expertise	−0.07	0.00	−0.15	0.15	0.36
Anticipation and optimization	−0.35	−0.01	−0.17	0.14	0.00
Personal flexibility	−0.64	0.00	−0.16	0.15	0.00
Corporate sense	−0.46	0.00	−0.14	0.14	0.00
Balance	−0.28	0.00	−0.16	0.16	0.00
Turnover intention	0.06	0.00	−0.14	0.16	0.46

10.3389/fpsyg.2023.1148294

TABLE 5 Step3b MICOM procedure (variances).

	Original difference	Permutation mean difference	2.5%	97.5%	Permutation *p* value
Learning climate facilitation	−0.05	0.00	−0.19	0.18	0.58
Dark leadership	−0.04	0.00	−0.27	0.26	0.75
Occupational expertise	0.13	0.00	−0.28	0.30	0.38
Anticipation and optimization	−0.26	0.00	−0.21	0.22	0.02
Personal flexibility	0.08	0.00	−0.28	0.27	0.59
Corporate sense	−0.28	0.00	−0.20	0.19	0.04
Balance	0.23	0.00	−0.24	0.21	0.05
Turnover intention	−0.34	0.00	−0.19	0.17	0.00

TABLE 6a Direct effects Dutch respondents.

	γ	Standard deviation	T statistics	f^2 values	*p* values
Learning climate facilitation - > Occupational expertise	0.16	0.09	1.79	0.02	0.07
Learning climate facilitation - > Anticipation and optimization	0.25	0.05	4.62	0.06	0.00
Learning climate facilitation - > Personal flexibility	0.19	0.05	3.48	0.03	0.00
Learning climate facilitation - > Corporate sense	0.21	0.06	3.68	0.04	0.00
Learning climate facilitation - > Balance	0.28	0.05	5.77	0.08	0.00
Learning climate facilitation - > Turnover intention	−0.43	0.04	9.80	0.25	0.00
Dark leadership × Learning climate facilitation - > Occupational expertise	0.07	0.08	0.85	0.00	0.40
Dark leadership × Learning climate facilitation - > Anticipation and optimization	0.01	0.05	0.24	0.00	0.81
Dark leadership × Learning climate Facilitation - > Personal flexibility	0.00	0.05	0.04	0.01	0.97
Dark leadership × Learning climate facilitation - > Corporate sense	−0.14	0.06	2.46	0.01	0.01
Dark leadership × Learning climate facilitation - > Balance	0.06	0.06	1.03	0.03	0.30
Dark leadership - > Occupational expertise	−0.06	0.08	0.69	0.00	0.49
Dark leadership - > Anticipation and optimization	−0.02	0.07	0.23	0.00	0.82
Dark leadership - > Personal flexibility	−0.14	0.07	2.11	0.01	0.04
Dark leadership - > Corporate sense	−0.13	0.07	1.90	0.01	0.06
Dark leadership - > Balance	−0.19	0.07	2.98	0.03	0.00
Occupational expertise - > Turnover intention	0.10	0.07	1.52	0.01	0.13
Anticipation and optimization - > Turnover intention	−0.10	0.05	1.92	0.01	0.06
Personal flexibility - > Turnover intention	0.04	0.06	0.80	0.00	0.42
Corporate sense - > Turnover intention	−0.07	0.05	1.45	0.00	0.15
Balance - > Turnover intention	−0.26	0.05	5.03	0.09	0.00

respondents interpreted the measures in a conceptually different way compared to their Chinese counterparts. This outcome provides support for Hypothesis 1 [Employees in the Netherlands and China differ regarding their conceptual interpretation of the variables in this study (i.e., learning climate facilitation, dark leadership, employability, and turnover intention)], as the constructs of learning climate facilitation, dark leadership, employability, and turnover intention demonstrated significantly different interpretations across the two national contexts.

4.4. Model estimations

Regarding the inner model evaluation and estimates, we analyzed the path coefficients by using bootstrap t-statistics, using 5,000 subsamples, with a bias-corrected bootstrap, testing for a two-tailed significance of 95% (Anderson and Gerbing, 1988). The model showed a good fit to our data: the Standardized Root Mean Square Residual (SRMR) was 0.06, which is in line with Hu and Bentler (1998) criterion of a lower value than 0.08. As the MICOM procedure demonstrated that the groups were different, we tested Hypotheses 2, 3, 4 and 5 for the Dutch and Chinese groups of respondents separately.

To test the hypotheses, we used a two-step approach. First, we calculated the direct effects for the paths in the model (see Tables 6a, 7a). Second, we calculated the indirect effects for the paths in the model (see Tables 6b, 7b). Last, we tested the predicting power using f^2 effect size of Cohen (1988) in the direct effects to indicate whether each construct had a weak, average, or strong effect on each of the related constructs (see Tables 6a, 7a).

TABLE 6b Indirect effects Dutch sample.

	γ	Standard deviation	T statistics	p values
Learning climate facilitation - > Occupational expertise - > Turnover intention	0.02	0.01	1.09	0.28
Learning climate facilitation - > Anticipation and optimization - > Turnover intention	−0.03	0.01	1.79	0.07
Learning climate facilitation - > Personal flexibility - > Turnover intention	0.01	0.01	0.73	0.46
Learning climate facilitation - > Corporate sense - > Turnover intention	−0.02	0.01	1.29	0.20
Learning climate facilitation - > Balance - > Turnover intention	−0.07	0.02	3.77	0.00
Dark leadership × Learning climate facilitation - > Occupational expertise - > Turnover intention	0.01	0.01	0.74	0.46
Dark leadership × Learning climate facilitation - > Anticipation and optimization - > Turnover intention	0.00	0.01	0.22	0.83
Dark leadership × Learning climate facilitation - > Personal flexibility - > Turnover intention	0.00	0.00	0.02	0.98
Dark leadership × Learning climate facilitation - > Corporate sense - > Turnover intention	0.01	0.01	1.19	0.24
Dark leadership × Learning climate facilitation - > Balance - > Turnover intention	−0.02	0.02	1.00	0.32
Dark leadership - > Occupational expertise - > Turnover intention	−0.01	0.01	0.54	0.59
Dark leadership - > Anticipation and optimization - > Turnover intention	0.00	0.01	0.21	0.84
Dark leadership - > Personal flexibility - > Turnover intention	−0.01	0.01	0.70	0.49
Dark leadership - > Corporate sense - > Turnover intention	0.01	0.01	0.95	0.34
Dark leadership - > Balance - > Turnover intention	0.05	0.02	2.60	0.01

TABLE 7a Direct effects Chinese respondents.

	γ	Standard deviation	T statistics	f^2 values	p values
Learning climate facilitation - > Occupational expertise	0.14	0.08	1.69	0.02	0.09
Learning climate facilitation - > Anticipation and optimization	0.31	0.06	5.14	0.10	0.00
Learning climate facilitation - > Personal flexibility	0.32	0.06	5.53	0.11	0.00
Learning climate facilitation - > Corporate sense	0.29	0.06	5.32	0.09	0.00
Learning climate facilitation - > Balance	0.35	0.05	6.91	0.15	0.00
Learning climate facilitation - > Turnover intention	−0.36	0.05	6.93	0.15	0.00
Dark leadership × Learning climate facilitation - > Occupational expertise	−0.10	0.07	1.54	0.01	0.13
Dark leadership × Learning climate facilitation - > Anticipation and optimization	−0.08	0.06	1.25	0.01	0.21
Dark leadership × Learning climate facilitation - > Personal flexibility	−0.10	0.06	1.55	0.01	0.12
Dark leadership × Learning climate facilitation - > Corporate sense	−0.06	0.06	1.03	0.00	0.30
Dark leadership × Learning climate facilitation - > Balance	−0.05	0.06	0.95	0.00	0.34
Dark leadership - > Occupational expertise	−0.14	0.08	1.62	0.02	0.11
Dark leadership - > Anticipation and optimization	0.01	0.08	0.13	0.00	0.90
Dark leadership - > Personal flexibility	−0.20	0.07	2.99	0.04	0.00
Dark leadership - > Corporate sense	−0.19	0.07	2.72	0.04	0.01
Dark leadership - > Balance	−0.26	0.06	4.59	0.07	0.00
Occupational expertise - > Turnover intention	0.12	0.06	1.90	0.01	0.06
Anticipation and optimization - > Turnover intention	0.02	0.07	0.30	0.00	0.76
Personal flexibility - > Turnover intention	−0.06	0.06	0.88	0.00	0.38
Corporate sense - > Turnover intention	−0.13	0.07	1.98	0.01	0.05
Balance - > Turnover intention	−0.23	0.06	4.22	0.06	0.00

Hypothesis 2 (Learning climate facilitation is negatively related with turnover intentions) was supported for both groups with our data. For the Dutch respondents, learning climate facilitation had a significant negative relationship with turnover intention ($\gamma = -0.43$, $p < 0.00$, $R^2 = 0.37$) with a strong predictive power ($f^2 = 0.25$). For the Chinese respondents, learning climate also facilitation had a significant negative relationship with turnover intention ($\gamma = -0.36$, $p < 0.00$, $R^2 = 0.33$) with an average predictive power ($f^2 = 0.15$).

TABLE 7b Indirect effects Chinese respondents.

	γ	Standard deviation	T statistics	p values
Learning climate facilitation - > Occupational expertise - > Turnover intention	0.02	0.01	1.17	0.24
Learning climate facilitation - > Anticipation and optimization - > Turnover intention	0.01	0.02	0.30	0.77
Learning climate facilitation - > Personal flexibility - > Turnover intention	−0.02	0.02	0.85	0.40
Learning climate facilitation - > Corporate sense - > Turnover intention	−0.04	0.02	1.84	0.07
Learning climate facilitation - > Balance - > Turnover intention	−0.08	0.02	3.92	0.00
Dark leadership × Learning climate facilitation - > Occupational expertise - > Turnover intention	−0.01	0.01	1.11	0.27
Dark leadership × Learning climate facilitation - > Anticipation and Optimization - > Turnover intention	0.00	0.01	0.23	0.82
Dark leadership × Learning climate facilitation - > Personal flexibility - > Turnover intention	0.01	0.01	0.70	0.49
Dark leadership × Learning climate facilitation - > Corporate sense - > Turnover intention	0.01	0.01	0.83	0.41
Dark leadership × Learning climate facilitation - > Balance - > Turnover intention	0.01	0.01	0.89	0.37
Dark leadership - > Occupational expertise - > Turnover intention	−0.02	0.01	1.33	0.18
Dark leadership - > Anticipation and optimization - > Turnover intention	0.00	0.01	0.04	0.97
Dark leadership - > Personal flexibility - > Turnover intention	0.01	0.01	0.78	0.44
Dark leadership - > Corporate sense - > Turnover intention	0.03	0.02	1.38	0.17
Dark leadership - > Balance - > Turnover intention	0.06	0.02	2.76	0.01

Hypothesis 3 (Employability mediates the negative relationship between learning climate facilitation and turnover intention) was partly supported for both groups. For the Dutch respondents, learning climate facilitation had a significant negative relationship with turnover intention via balance ($\gamma = -0.07$, $p < 0.000$, $R^2 = 0.37$). For the Chinese respondents, learning climate facilitation also had a significant negative relationship with turnover intention via balance ($\gamma = -0.08$, $p < 0.00$, $R^2 = 0.33$). Indirect paths with the other components of employability as mediator demonstrated to be non-significant.

Hypothesis 4 (Dark leadership moderates the positive relationship between learning climate facilitation and employability, such that this relationship is weaker for employees who experience a higher degree of dark leadership) was partially supported for the Dutch respondents; a significant moderation effect between dark leadership and learning climate facilitation was found on corporate sense ($\gamma = -0.14$, $p < 0.01$, $R^2 = 0.37$). However, for the Chinese respondents, no significant relationship was found for the moderation between dark leadership and learning climate facilitation on each of the components of employability.

Hypothesis 5 (The interaction effect between dark leadership and learning climate facilitation has an indirect effect through employability on turnover intention) was neither supported for the Dutch nor for the Chinese group of respondents, as no significant indirect relationship was found of the moderation between dark leadership and learning climate facilitation and turnover intention via each of the components of employability.

5. Discussion and conclusion

In view of the call for the ability to contextualize theories (Whetten, 2009) and to contribute to the convergence/divergence debate, this empirical study applied Western theories to investigate possible contextual differences in the relationships between learning climate facilitation and turnover intention, and to examine whether this relationship is mediated by employability, and the possible role of dark leadership as a moderator in our research model. To test our hypotheses, we collected data from 319 Chinese and 368 Dutch respondents, which were analyzed using PLS-Structural Equation Modeling. Below, we summarize our results and reflect on them in the light of our theoretical lens. We conclude by discussing the study's implications for HR researchers and - practitioners in national and global business contexts.

In line with our expectations, employees in the Netherlands and China were shown to interpret our study variables differently. More specifically, our results indicated that learning climate facilitation, dark leadership, employability, and turnover intention are significantly differently interpreted across the two national contexts studied. More generally, this would argue for the divergence thesis as brought forward by cross-cultural scholars when it comes down to the interpretation of our Western concepts related to HRM and leadership in China.

Our separate analyses revealed a significant negative relationship between learning climate facilitation and turnover intention in both the Netherlands and China. Although not directly comparable with each other (see Hypothesis 1), we found a negative relationship between the two constructs in both contexts. Since employees in both contexts can be expected to have lower turnover intentions when they perceive a learning climate facilitation within their organization, this supports the convergence thesis. This finding is also in line with recent research by Lin and Huang (2021) that a learning climate reduces turnover intention. Although this was not hypothesized, in both samples, we found that learning climate facilitation also had a positive direct relationship with employability (anticipation and optimization, personal flexibility, corporate sense, and balance) (see Tables 6a, 7a). This means that in both the Netherlands and China, efforts of an organization to facilitate a

learning climate are beneficial to the employability development of their employees.

Another notable result is that, in both contexts, learning climate facilitation had a significant negative relationship with turnover intention via the competence based employability dimension of balance. In this empirical work, balance refers to the capability to align one's current job versus career goals, employers' versus employees' interests, and employees' opposing work, career, and private interests (Van der Heijde and Van der Heijden, 2006). Considering the lack of consensus on the relationship between employability and turnover intention in empirical research, this study shows, in line with the 'inverted' flexibility/commitment paradox (Peters and Lam, 2015), that employees would have lower intentions to leave the organization when they experience the balance between organizational goals and individual goals to be right. A possible explanation for this outcome may be that employees (in our sample those who participate in an executive master's program) who believe to have more learning opportunities, experience a higher form of balance (in this case by experiencing that their employer's and their own interests are taken care of), resulting into lower turnover intentions. We find a similar relationship between both contexts, which also supports the convergence thesis. Interestingly, this is in line with recent research (Burmeister et al., 2018) that also found that the effects of HR practices do not significantly differ when comparing collectivist and individualist countries.

Furthermore, in this empirical study it was found that in the Dutch context, dark leadership moderates the relationship between learning climate facilitation and the employability dimension of corporate sense, meaning that the positive relationship between learning climate facilitation and corporate sense [e.g., networking skills, actual participation in different types of working groups, and sharing responsibilities, expertise, successes *et cetera* (Van der Heijde and Van der Heijden, 2006)] is weakened by the experience of dark leadership. In other words, the positive contribution of learning climate facilitation to corporate sense is hindered by dark leadership.

In contrast to the Dutch respondents, there is no significant result in the Chinese context for a moderation of dark leadership in our model. This supports the divergence thesis, stressing contextual differences in HR practices and leadership style. It may well be that the historical developments of leadership (Lin et al., 2018) and employees in the Netherlands and China make for actual differences in current times. Where Chinese leaders are more autonomous and more self-protective compared to leaders in the Netherlands and Chinese employees are more collectivistic (House et al., 2004), it may well be that Chinese employees are not affected by dark leadership and do not experience it as a hinderance in the relationship between learning climate facilitation and employability.

Finally, no significant relationship was found for the moderation of dark leadership in the relationship between learning climate facilitation and turnover intention running via the employability dimensions. In contrast to our expectations, experienced dark leadership does not indirectly affect employees' turnover intention via employability in either the Dutch or the Chinese context. Yet, we did find a direct negative relationship of dark leadership with employability in the Netherlands (personal flexibility and balance) and China (personal flexibility, corporate sense, and balance), implying that employees who experience dark leadership perceive lower levels on selected dimensions of employability. Overall, our finding is in line with the rather uniform picture presented by Fischer et al. (2021) indicating that abusive supervision is 'bad news'.

Based on our study, on the one hand, it can be concluded that both learning climate facilitation and dark leadership are important factors in the development and retainment of personnel and that particularly focusing on 'balancing employer and individual goals' can be considered as particularly important to retain personnel, regardless of the national context being the Netherlands or China. To some extent, this may indicate the need for convergence of HR practices regarding learning climate facilitation.

On the other hand, however, the different interpretations of our study's variables may indicate divergence in the meaning of HR concepts in the two national contexts studied. In line with the call for more context-sensitive organizational research to be able to contextualize theories (Whetten, 2009; Zhu and Warner, 2019; Xiao and Cooke, 2022), our study contributes to the understanding of contextual differences, while using Western theories. More specifically, our study contributes to the extant literature on learning climate facilitation, dark leadership, employability, and turnover intention, by providing insights on contextual similarities and differences.

5.1. Limitations and future research

Like other studies, this study also has some limitations. First, data was collected using surveys, and thus response set consistencies and common-method biases may be a potential concern (Doty and Glick, 1998). However, in the study's design, we reduced common-method variance by using brief questionnaires and a combination of response formats and labeling (Podsakoff et al., 2012).

Second, this study exclusively used self-ratings, and thus more research is needed to assess how this might have affected results. Future research can also use a qualitative interpretation to increase the understanding of the results.

Third, concerning measures of our mediation variable, extant studies suggested that other-ratings of employability are less differentiated and result in less variance between the employability sub-dimensions distinguished (Van der Heijden et al., 2016). Self-ratings of employability were thus justified to obtain nuanced findings. However, future research could use multi-source data to further enhance our understanding of the influence of learning climate facilitation on employees' turnover intentions.

Fourth, related to the previous limitation, a multi-wave approach would have provided more data on the stability and change of variables in the model, and longitudinal, cross-lagged relationships compared with the current cross-sectional design (Boker and Nesselroade, 2002). Future studies could assess reciprocal relationships, such as cross-lagged effects between antecedents and outcomes (Kwok and Fang, 2021). For example, employees with higher turnover intention who focus on external collaboration and networks might become more employable over time as well, thereby suggesting positive reciprocal relationships between the study's variables.

Finally, our sample was limited to employees who were allowed by their employer to participate in an executive master's program limited to two countries, i.e., the Netherlands and China. This may have diminished the generalizability of our study, as it is likely that employees who at the same time are participating in such an educational program, may have a more positive impression of their

learning opportunities in comparison with those who do not. The latter possibly implies that they have a rosier image of their leader, which may have led to an underrepresentation of employees who have given higher ratings for dark leadership. Future research may focus on other employees not being in educational programs yet to be better able to address generalizability of our outcomes.

5.2. Practical implications

Based on the results of this study, it is recommended that HR-practices are aligned with the particular context they operate in. It is important to address socio-economic and socio-cultural aspects of the context which may alter relationships that have been found, for example, in previous empirical research in other contexts. Specifically, this study shows that employees in the Netherlands and China interpret learning climate facilitation, dark leadership, employability, and turnover intention differently.

However, in both the socio-cultural national contexts studied (the Netherlands and China), our study showed that learning climate facilitation has a significant negative relationship with turnover intention. This suggests that HRM practices promoting learning climate facilitation can lower managers' anxiety to lose employees. Especially in times of labor market shortages, the investment in learning climate facilitation may help to keep employees within the organization. This can provide organizations with a competitive advantages as they will not lose out on (firm-specific and general) knowledge and skills, or risk transferring knowledge and skills to a rival organization or potentially deterring other employees in the future.

In combination with globalization and its associated increased demands on productivity, creativity, flexibility, and accelerated developments (e.g., new production concepts and technologies), employees are required to renew their competencies across their working lives (Messmann et al., 2017; Stoffers et al., 2019, 2020). This study shows that employability and consequently dark leadership are highly relevant constructs, with highly qualified, flexible, committed employees who are focused on personal development becoming increasingly important to a firm (Atatsi et al., 2019, 2022). This new employee has lower turnover intentions through increased balance where he or she, e.g., can balance their own career goals whilst supporting their colleagues. Finally, in the Netherlands, HRM practitioners should identify dark leadership within the organization since dark leadership lowers an employee's corporate sense even though the organization facilitates a learning climate, diminishing the positive effect of the organizational efforts.

Overall, this study showed contextual differences from the Netherlands and China, which indicates that it is important for HR-practitioners to be aware of the influence context has on the interpretation and results of HR policies and practices.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. The patients/participants provided their written informed consent to participate in this study.

Author contributions

OH, PP, BH, and JS: conceptualization. OH, PP, BH, JS, RB, and SL: methodology, writing, including the original draft's writing, and editing. OH and SL: data curation. OH and RB: formal analysis. OH, PP, BH, JS, RB, and SL: reviewing. PP, BH, and JS: supervision. All authors contributed to the article and approved the submitted version.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

References

Acikgoz, Y., Sumer, H. C., and Sumer, N. (2016). Do employees leave just because the can? Examining the perceived employability–turnover intentions relationship. *J. Psychol.* 150, 666–683. doi: 10.1080/00223980.2016.1160023

Akkermans, J., Tims, M., Beijer, S., and De Cuyper, N. (2019). Should employers invest in employability? Examining employability as a mediator in the HRM-commitment relationship. *Front. Psychol.* 10:717. doi: 10.3389/fpsyg.2019.00717

Allen, D. G., Shore, L. M., and Griffeth, R. W. (2003). The role of perceived organizational support and supportive human resource practices in the turnover process. *J. Manag.* 29, 99–118. doi: 10.1177/014920630302900107

Anderson, J. C., and Gerbing, D. W. (1988). Structural equation modeling in practice: a review and recommended two-step approach. *Psychol. Bull.* 103, 411–423. doi: 10.1037/0033-2909.103.3.411

Atatsi, E. A., Curşeu, P. L., Stoffers, J., and Kil, A. (2022). Learn in order to innovate: an exploration of individual and team learning as antecedents of innovative work behaviours in Ghanaian technical universities. *Sustain.* 14:4012. doi: 10.3390/su14074012

Atatsi, E., Stoffers, J., and Kil, A. (2019). Factors affecting employee performance: a systematic literature review. *J. Adv. Manage. Res.* 16, 329–351. doi: 10.1108/JAMR-06-2018-0052

Bagozzi, R. B., Yi, Y., and Phillips, L. W. (1991). Assessing construct validity in organizational research. *Adm. Sci. Q.* 36, 421–458. doi: 10.2307/2393203

Baranchenko, Y., Xie, Y., Lin, Z., Lau, M. C. K., and Ma, J. (2020). Relationship between employability and turnover intention: the moderating effects of organizational support and career orientation. *J. Manag. Organ.* 26, 241–262. doi: 10.1017/jmo.2019.77

Barclay, D., Higgins, C., and Thompson, R. (1995). The partial least squares (PLS) approach to causal modeling: personal computer adoption and use as an illustration. *Technol. Stud.* 2, 285–309.

Boker, S. M., and Nesselroade, J. R. (2002). A method for modeling the intrinsic dynamics of Intraindividual variability: recovering the parameters of simulated oscillators in multi-wave panel data. *Multivar. Behav. Res.* 37, 127–160. doi: 10.1207/S15327906MBR3701_06

Buheji, M., and Buheji, A. (2020). Planning competency in the new normal—employability competency in post-COVID-19 pandemic. *Int. J. Hum. Resour. Stud.* 10, 237–251. doi: 10.5296/ijhrs.v10i2.17085

Burmeister, A., van der Heijden, B. I. J. M., Yang, J., and Deller, J. (2018). Knowledge transfer in age-diverse coworker dyads in China and Germany: how and when do age-inclusive human resource practices have an effect? *Hum. Resour. Manag. J.* 28, 605–620. doi: 10.1111/1748-8583.12207

Camman, C., Fichman, M., Jenkins, D., and Klesh, J. (1979). *The Michigan Organizational Assessment Questionnaire*. (University of Michigan, Ann Arbor, Michigan).

CBS (2019). Krapte Arbeidsmarkt Neemt Verder Toe. Available at: https://www.cbs.nl/nl-nl/nieuws/2019/20/krapte-arbeidsmarkt-neemt-verder-toe (Accessed September 02, 2022).

Chin, W. W. (1998). "The partial least squares approach to structural equation modeling" in *Modern Methods for Business Research*. ed. G. A. Marcoulides (Mahwah, NJ: Lawrence Erlbaum Associates), 295–336.

Chin, W. W., and Dibbern, J. (2010). "An introduction to a permutation based procedure for multi-group PLS analysis: results of tests of differences on simulated data and a cross cultural analysis of the sourcing of information system services between Germany and the USA" in *Handbook of Partial Least Squares*. eds. V. Esposito Vinzi, W. Chin, J. Henseler and H. Wang (Berlin: Springer), 171–193.

Claus, L. (2019). HR disruption—time already to reinvent talent management. *Bus. Res. Q.* 22, 207–215. doi: 10.1016/j.brq.2019.04.002

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*, *2nd*. Hillsdale: Lawrence Erlbaum Associates

Cooke, F. L., Xiao, Q., and Xiao, M. (2021). Extending the frontier of research on (strategic) human resource management in China: a review of David Lepak and colleagues' influence and future research direction. *Int. J. Hum. Resour. Manag.* 32, 183–224. doi: 10.1080/09585192.2020.1803949

Crans, S., Gerken, M., Beausaert, S., and Segers, M. (2021). The mediating role of social informal learning in the relationship between learning climate and employability. *Career Dev. Int.* 26, 678–696. doi: 10.1108/CDI-09-2020-0234

Cui, Y., Meng, J., and Lu, C. (2018). Recent developments in China's labor market: labor shortage, rising wages and their implications. *Rev. Dev. Econ.* 22, 1217–1238. doi: 10.1111/rode.12391

De Cuyper, N., and De Witte, H. (2011). The management paradox: self-rated employability and organizational commitment and performance. *Pers. Rev.* 40, 152–172. doi: 10.1108/00483481111106057

De Cuyper, N., Mauno, S., Kinnunen, U., and Mäkikangas, A. (2011a). The role of job resources in the relation between perceived employability and turnover intention: a prospective two-sample study. *J. Vocat. Behav.* 78, 253–263. doi: 10.1016/j.jvb.2010.09.008

De Cuyper, N., Van der Heijden, B. I. J. M., and De Witte, H. (2011b). Associations between perceived employability, employee well-being, and its contribution to organizational success: a matter of psychological contracts? *Int. J. Hum. Resour. Manag.* 22, 1486–1503. doi: 10.1080/09585192.2011.561962

De Vos, A., and Van der Heijden, B. I. J. M. (2017). Current thinking on contemporary careers: the key roles of sustainable HRM and sustainability of careers. *Curr. Opin. Environ. Sustain.* 28, 41–50. doi: 10.1016/j.cosust.2017.07.003

De Winne, S., Marescaux, E., Sels, L., Van Beveren, I., and Vanormelingen, S. (2019). The impact of employee turnover and turnover volatility on labor productivity: a flexible non-linear approach. *Int. J. Hum. Resour. Manag.* 30, 3049–3079. doi: 10.1080/09585192.2018.1449129

Doty, D. H., and Glick, W. H. (1998). Common methods bias: does common methods variance really bias results? *Organ. Res. Methods* 1, 374–406. doi: 10.1177/109442819814002

Egan, T. M., Yang, B., and Bartlett, K. R. (2004). The effects of organizational learning culture and job satisfaction on motivation to transfer learning and turnover intention. *Human Res. Dev. Q.* 15, 279–301. doi: 10.1002/hrdq.1104

Fischer, T., Tian, A. W., Lee, A., and Hughes, D. J. (2021). Abusive supervision: a systematic review and fundamental rethink. *Leadersh. Q.* 32:101540. doi: 10.1016/j.leaqua.2021.101540

Fornell, C., and Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *J. Mark. Res.* 18, 39–50. doi: 10.1177/002224378101800104

Fugate, M., Van der Heijden, B. I. J. M., De Vos, A., Forrier, A., and De Cuyper, N. (2021). Is what's past prologue? A review and agenda for contemporary employability research. *Acad. Manag. Ann.* 15, 266–298. doi: 10.5465/annals.2018.0171

Goute, A. K., Goute, A., and Jan, N. A. (2021). The dark side of leadership: a review of literature on abusive supervision. *J. Organ. Behav.* 20, 153–166.

Govaerts, N., Kyndt, E., Dochy, F., and Baert, H. (2011). Influence of learning and working climate on the retention of talented employees. *J. Workplace Learn.* 23, 35–55. doi: 10.1108/13665621111097245

Hair, J.F., Hult, G.T., and Ringle, C.M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*, *2nd*. Thousand Oaks: Sage

Harbison, F., and Meyers, C.A. (1959). *Management in the Industrial World*. New York: McGraw-Hill

Harman, H.H. (1976). *Modern Factor Analysis*. Chicago, IL: University of Chicago Press.

Hauer, E., Nordlund, A. M., and Westerberg, K. (2012). Developmental intervention, learning climate and use of knowledge in elderly care. *J. Workplace Learn.* 24, 19–33. doi: 10.1108/13665621211191087

Henseler, J. (2010). On the convergence of the partial least squares path modeling algorithm. *Comput. Stat.* 25, 107–120. doi: 10.1007/s00180-009-0164-x

Henseler, J., Hubona, G., and Ray, P. A. (2016). Using PLS path modeling in new technology research: updated guidelines. *Ind. Manag. Data Syst.* 116, 2–20. doi: 10.1108/IMDS-09-2015-0382

Hofstede, G. (1991). *Culture's Consequences: Software of the Mind*. London: McGraw-Hill Book Company.

Hofstede Insights (2022). Country Comparison. Available at: https://www.hofstede-insights.com/country-comparison/china,the-netherlands/ (Accessed October 11, 2022).

Hom, P. W., Caranikas-Walker, F., Prussia, G. E., and Griffeth, R. W. (1992). A meta-analytical structural equations analysis of a model of employee turnover. *J. Appl. Psychol.* 77, 890–909. doi: 10.1037/0021-9010.77.6.890

Hom, P. W., Mitchell, T. R., Lee, T. W., and Griffeth, R. W. (2012). Reviewing employee turnover: focusing on proximal withdrawal states and an expanded criterion. *Psychol. Bull.* 138, 831–858. doi: 10.1037/a0027983

House, R.J., Hanges, P.J., Javidan, M., Dorfman, P.W., and Gupta, V. (Eds.) (2004). *Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies*. London: Sage Publications.

Hu, L. T., and Bentler, P. M. (1998). Fit indices in covariance structure modeling: sensitivity to underparameterized model misspecification. *Psychol. Methods* 3, 424–553. doi: 10.1037/1082-989X.3.4.424

Joo, B. K. (2010). Organizational commitment for knowledge workers: the roles of perceived organizational learning culture, leader–member exchange quality, and turnover intention. *Hum. Resour. Dev. Q.* 21, 69–85. doi: 10.1002/hrdq.20031

Kim, S., and Wright, P. M. (2011). Putting strategic human resource management in context: a contextualized model of high commitment work systems and its implications in China. *Manag. Organ. Rev.* 7, 153–174. doi: 10.1111/j.1740-8784.2010.00185.x

Knocke, J., and Schuster, T. (2017). Repatriation of international assignees: where are we and where do we go from here? A systematic literature review. *J. Glob. Mobil* 5, 275–303. doi: 10.1108/JGM-01-2017-0001

Kraimer, M. L., Shaffer, M. A., and Bolino, M. C. (2009). The influence of expatriate and repatriate experiences on career advancement and repatriate retention. *Hum. Resour. Manag.* 48, 27–47. doi: 10.1002/hrm.20265

Kwok, S. Y., and Fang, S. (2021). A cross-lagged panel study examining the reciprocal relationships between positive emotions, meaning, strengths use and study engagement in primary school students. *J. Happ. Studies.* 22, 1033–1053. doi: 10.1007/s10902-020-00262-4

Kyndt, E., Dochy, F., and Nijs, H. (2009). Learning conditions for non-formal and informal workplace learning. *J. Workplace Learn.* 21, 369–383. doi: 10.1108/13665620910966785

Landay, K., Harms, P. D., and Credé, M. (2019). Shall we serve the dark lords? A meta-analytic review of psychopathy and leadership. *J. Appl. Psychol.* 104, 183–196. doi: 10.1037/apl0000357

Le Blanc, P. M., Peeters, M. C. W., Van der Heijden, B. I. J. M., and Van Zyl, L. (2019). To leave or not to leave? A multi-sample study on individual, job-related, and organizational antecedents of employability and retirement intentions. *Front. Psychol.* 10: 2057.

Lee, H. W., and Liu, C. H. (2007). An examination of factors affecting repatriates' turnover intentions. *Int. J. Manpow.* 28, 122–134. doi: 10.1108/01437720710747956

Levenson, A. (2020). A Long Time Until the Economic New Normal, Leaders Must Learn from the Pandemic Now to Position their Companies to Thrive in the Next Crisis. Sloan Review. Available at: https://sloanreview.mit.edu/article/a-long-time-until-the-economic-new-normal/ (Accessed September 02, 2022).

Lin, C. Y., and Huang, C. K. (2021). Employee turnover intentions and job performance from a planned change: the effects of an organizational learning culture and job satisfaction. *Int. J. Manpow.* 42, 409–423. doi: 10.1108/IJM-08-2018-0281

Lin, L., Li, P. P., and Roelfsema, H. (2018). The traditional Chinese philosophies in inter-cultural leadership: the case of Chinese expatriate managers in the Dutch context. *Cross Cult. Strateg. Manag.* 25, 299–336. doi: 10.1108/CCSM-01-2017-0001

Mackey, J. D., Ellen, B. P. III, McAllister, C. P., and Alexander, K. C. (2021). The dark side of leadership: a systematic literature review and meta-analysis of destructive leadership research. *J. Bus. Res.* 132, 705–718. doi: 10.1016/j.jbusres.2020.10.037

Marsick, V. J., and Watkins, K. E. (2003). Demonstrating the value of an organization's learning culture: the dimensions of the learning organization questionnaire. *Adv. Dev. Hum. Resour.* 5, 132–151. doi: 10.1177/1523422303005002002

Messmann, G., Stoffers, J., Van der Heijden, B. I. J. M., and Mulder, R. (2017). Joint effects of job demands and job resources on vocational teachers' innovative work behaviour. *Pers. Rev.* 46, 1948–1961. doi: 10.1108/PR-03-2016-0053

Nelissen, J., Forrier, A., and Verbruggen, M. (2017). Employee development and voluntary turnover: testing the employability paradox. *Hum. Resour. Manag. J.* 27, 152–168. doi: 10.1111/1748-8583.12136

Nikolova, I., Van Ruysseveldt, J., De Witte, H., and Syroit, J. (2014a). Work-based learning: development and validation of a scale measuring the learning potential of the workplace (LPW). *J. Vocat. Behav.* 84, 1–10. doi: 10.1016/j.jvb.2013.09.004

Nikolova, I., Van Ruysseveldt, J., De Witte, H., and Van Dam, K. (2014b). Learning climate scale: construction, reliability and initial validity evidence. *J. Vocat. Behav.* 85, 258–265. doi: 10.1016/j.jvb.2014.07.007

Nikolova, I., Van Ruysseveldt, J., Van Dam, K., and De Witte, H. (2016). Learning climate and workplace learning: does work restructuring make a difference? *J. Pers. Psychol.* 15, 66–75. doi: 10.1027/1866-5888/a00015

Nunnally, J.C. (1978). *Psychometric Theory*, *2nd*. New York: McGraw-Hill.

Osagie, E. R., Wesselink, R., Runhaar, P., and Mulder, M. (2018). Unraveling the competence development of corporate social responsibility leaders: the importance of peer learning, learning goal orientation, and learning climate. *J. Bus. Ethics* 151, 891–906. doi: 10.1007/s10551-017-3638-8

Peters, P., and Lam, W. (2015). Can employability do the trick? Revealing paradoxical tensions and responses in the process of adopting innovative employability enhancing policies and practices in organizations. *Ger. J. Hum. Resour. Manag.* 29, 235–258. doi: 10.1177/239700221502900305

Podsakoff, P. M., and Organ, D. W. (1986). Self-reports in organizational research: problems and prospects. *J. Manage.* 12, 69–82. doi: 10.1177 /014920638601200408

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., and Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *J. Appl. Psychol.* 88, 879–903. doi: 10.1037/0021-9010.88.5.879

Podsakoff, P. M., MacKenzie, S. B., and Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Ann. Rev. Psychol.* 63, 539–569. doi: 10.1146/annurev-psych-120710-100452

Reiche, B. S., Lee, Y., and Allen, D. G. (2019). Actors, structure, and processes: a review and conceptualization of global work integrating IB and HRM research. *J. Manag.* 45, 359–383. doi: 10.1177/0149206318808885

Ringle, C.M., Wende, S., and Becker, J.-M. (2022). SmartPLS 4. Available at: https://www.smartpls.com/ (Accessed November 02, 2022).

Rodrigues, R., Butler, C. L., and Guest, D. (2020). Evaluating the employability paradox: when does organizational investment in human capital pay off? *Int. J. Hum. Resour. Manag.* 31, 1134–1156. doi: 10.1080/09585192.2019.1704825

Sarstedt, M., Henseler, J., and Ringle, C. M. (2011). Multigroup analysis in partial least squares (PLS) path modeling: alternative methods and empirical results. *Adv. Int. Mark.* 22, 195–218. doi: 10.1108/S1474-7979(2011)0000022012

Schyns, B., and Schilling, J. (2013). How bad are the effects of bad leaders? A meta-analysis of destructive leadership and its outcomes. *Leadersh. Q.* 24, 138–158. doi: 10.1016/j.leaqua.2012.09.001

Stoffers, J., Hendrikx, K., Habets, O., and Van der Heijden, B. I. J. M. (2019). Employability and innovative work behaviours in SMEs in a Euroregion: a cross-national comparison between Belgium and the Netherlands. *Pers. Rev.* 49, 167–187. doi: 10.1108/PR-10-2018-0387

Stoffers, J. M. M., Van der Heijden, B. I. J. M., and Jacobs, E. A. (2020). Employability and innovative work behaviour in small and medium-sized enterprises. *Int. J. Hum. Resour. Manag.* 31, 1439–1466. doi: 10.1080/09585192.2017.1407953

Tepper, B. J. (2000). Consequences of abusive supervision. *Acad. Manag. J.* 43, 178–190. doi: 10.2307/1556375

Tepper, B. J., Carr, J. C., Breaux, D. M., Geider, S., Hu, C., and Hua, W. (2009). Abusive supervision, intentions to quit, and employees' workplace deviance: a power/dependence analysis. *Organ. Behave. Hum. Decis. Process.* 109, 156–167. doi: 10.1016/j.obhdp.2009.03.004

Tepper, B. J., Duffy, M. K., Henle, C. A., and Lambert, L. S. (2006). Procedural injustice, victim precipitation and abusive supervision. *Pers. Psychol.* 59, 101–123. doi: 10.1111/j.1744-6570.2006.00725.x

Van De Schoot, R., Schmidt, P., De Beuckelaer, A., Lek, K., and Zondervan-Zwijnenburg, M. (2015). Measurement invariance. *Front. Psychol.* 6, 1–4. doi: 10.3389/978-2-88919-650-0

Van der Heijde, C. M., and Van der Heijden, B. I. J. M. (2006). A competence-based and multidimensional operationalization and measurement of employability. *Hum. Resour. Manag.* 45, 449–476. doi: 10.1002/hrm.20119

Van der Heijden, B. I. J. M. (2005). *"No One Has Ever Promised You a Rose Garden" on Shared Responsibility and Employability Enhancing Strategies Throughout Careers*. Heerlen: Open University of the Netherlands/Assen: Van Gorcum.

Van der Heijden, B. I. J. M., and Bakker, A. B. (2011). Toward a mediation model of employability enhancement: a study of employee-supervisor pairs in the building sector. *Career Dev. Q.* 59, 232–248. doi: 10.1002/j.2161-0045.2011.tb00066.x

Van der Heijden, B. I. J. M., Gorgievski, M. J., and De Lange, A. H. (2016). Learning at the workplace and sustainable employability: a multi-source model moderated by age. *Eur. J. Work Organ. Psychol.* 25, 13–30. doi: 10.1080/1359432x.2015.1007130

Van der Heijden, B. I. J. M., Notelaers, G., Peters, P., Stoffers, J., De Lange, A. H., Froehlich, D. E., et al. (2018). Development and validation of the short-form employability five-factor instrument. *J. Vocat. Behav.* 106, 236–248. doi: 10.1016/j.jvb.2018.02.003

Van der Heijden, B. I. J. M., and Spurk, D. (2019). Moderating role of LMX and proactive coping in the relationship between learning value of the job and employability enhancement among academic staff employees. *Career Dev. Int.* 24, 163–186. doi: 10.1108/CDI-09-2018-0246

Van Dierendonck, D., Lankester, A., Zmyslona, M., and Rothweiler, H. (2016). Linking HRM practices and institutional setting to collective turnover: an empirical exploration. *Administ. Sci.* 6, 1–17. doi: 10.3390/admsci6040018

Van Harten, J., Knies, E., and Leisink, P. (2016). Employer's investments in hospital workers' employability and employment opportunities. *Pers. Rev.* 45, 84–102. doi: 10.1108/PR-05-2014-0115

Verburg, R. M., Drenth, P. J., Koopman, P. L., Muijen, J. J. V., and Wang, Z. M. (1999). Managing human resources across cultures: a comparative analysis of practices in industrial enterprises in China and the Netherlands. *Int. J. Hum. Resour. Manag.* 10, 391–410. doi: 10.1080/095851999340396

Whetten, D. (2009). An examination of the interface between context and theory applied to the study of Chinese organizations. *Manag. Organ. Rev.* 5, 29–56. doi: 10.1111/j.1740-8784.2008.00132.x

Xiao, Q., and Cooke, F. L. (2022). Contextualizing employee perceptions of human resource management: a review of China-based literature and future directions. *Asia Pacific J. Hum. Resour.* 60, 252–282. doi: 10.1111/1744-7941.12259

Zhang, S. X., Wang, Y., Rauch, A., and Wei, F. (2020). Unprecedented disruption of lives and work: health, distress and life satisfaction of working adults in China one month into the COVID-19 outbreak. *Psychiatry Res.* 288:112958. doi: 10.1016/j.psychres.2020.112958

Zhu, C. J., and Warner, M. (2019). The emergence of human resource management in China: convergence, divergence and contextualization. *Hum. Resour. Manag. Rev.* 29, 87–97. doi: 10.1016/j.hrmr.2017.11.002

frontiers | Frontiers in Psychology

TYPE Original Research
PUBLISHED 31 August 2023
DOI 10.3389/fpsyg.2023.1183203

OPEN ACCESS

EDITED BY
Hans Henrik Knoop,
Aarhus University, Denmark

REVIEWED BY
Ken Brien,
University of New Brunswick, Canada
Sheila Keener,
Old Dominion University, United States

*CORRESPONDENCE
Martine J. H. Coun
✉ martine.coun@ou.nl
Pascale Peters
✉ p.peters@nyenrode.nl

†These authors have contributed equally to this work and share first authorship

RECEIVED 09 March 2023
ACCEPTED 14 August 2023
PUBLISHED 31 August 2023

CITATION
Coun MJH, De Ruiter M and Peters P (2023) At your service: supportiveness of servant leadership, communication frequency and communication channel fostering job satisfaction across generations. *Front. Psychol.* 14:1183203. doi: 10.3389/fpsyg.2023.1183203

At your service: supportiveness of servant leadership, communication frequency and communication channel fostering job satisfaction across generations

Martine J. H. Coun[1*†], Melanie De Ruiter[2†] and Pascale Peters[2,3*†]

[1]Management Sciences, Open Universiteit, Heerlen, Netherlands, [2]Center for Strategy, Organization and Leadership, Nyenrode Business Universiteit, Breukelen, Netherlands, [3]Organization, Leadership and Management, Inland School of Business and Social Sciences, Lillehammer, Norway

Introduction: The present study contributes to the conversations on the role of 'autonomy supportive' factors in employee wellbeing in remote work contexts by examining the relationships between servant leadership, communication frequency – overall and *via* synchronous (i.e., individual video-calls, individual telephone calls) and asynchronous communication channels (i.e., e-mail messages, and WhatsApp) – on the one hand, and job satisfaction, on the other, and the moderating role of generation (Baby Boomers and Gen X versus Gen Y) in these relationships.

Method: Building on self-determination theory, incorporating insights from servant leadership, telework, and media richness and synchronicity literatures, we developed hypotheses that were tested *via* multilevel analysis (273 employees nested in 89 managers).

Results: In line with expectations, servant leadership had a positive relationship with job satisfaction. Total communication frequency, however, was not related to job satisfaction. Further analyses per communication channel showed that only level 2 e-mail communication frequency was positively related to job satisfaction. In contrast to expectations, the relationships studied were not moderated by generation.

Discussion: We concluded that, for all generations, both servant leadership and frequent (e-mail) communication can be regarded as 'autonomy supportive' factors in employee wellbeing. Paradoxically, whereas servant leadership, considered as a human-centric leadership style, suggests close trust-based employment relationships, employees valued frequent asynchronous communication (*via* e-mail). Having access to information and knowledge when needed may satisfy employees' need for autonomy (and perhaps for flexibility to engage in work and non-work activities). The insights gained in our study can inform organizations, managers, and employees, particularly in future remote work contexts.

KEYWORDS

job satisfaction, servant leadership, communication frequency and channels, selfdetermination theory, media richness, synchronicity, remote working, generations

Introduction

Since the COVID-19 pandemic, many employees have started looking for new job opportunities as they are no longer satisfied with their current job (PwC's Global Workforce Hopes and Fears Survey, 2022). Related to this, Gratton (2023) posits that the shared experience of the COVID-19 pandemic and the lockdowns in which people had to work from home more intensively than ever before has made them question what they find important in work and the rest of life. In view of this, Gratton (2023) advocated organizations to offer employees more say about how, when, and where to work, as this allows them to craft their working lives and make new connections, both within and outside work, which she links to job satisfaction.

Job satisfaction - as the extent to which people like (satisfaction) or dislike (dissatisfaction) their job (Spector, 1997) - is an indicator of employee well-being. According to Locke (1976), job satisfaction reflects "a positive emotional or pleasurable state resulting from the appraisal of one's job or job experience" (p. 1304) and has been related to work contexts that are 'autonomy supportive' (Gagne, 2003; Zhang et al., 2023). This implies that people are given choice, encouraged to take initiative, experience relatedness, and feel supported to develop and use their competences (Deci et al., 2001).

Traditionally, the concept of job satisfaction has been discussed in light of social interaction and meaningful connections at work, which reflect contextual supportiveness by offering opportunities for autonomous working, information sharing, feedback, dealing with others, and friendship which, according to the self-determination theory (SDT; Deci and Ryan, 2000), can enhance the satisfaction of employees' basic psychological needs (i.e., the need for autonomy, relatedness, and competence), autonomous motivation, performance satisfaction, and employee well-being (Gagne, 2003; Fonner and Roloff, 2010).

More specifically, job satisfaction has been related to the attention that people receive from others, such as their managers (Belias and Koustelios, 2014). Since the COVID-19 pandemic, the importance of human-centric leadership may even have increased, as employees who were forced to work from home during the pandemic needed guidance and coaching in disrupted work-family contexts (Contreras et al., 2020), which stresses the importance of establishing mutual trust in work relationships (Ahern and Loh, 2020) that is needed to enhance and sustain employees' self-efficacy (Sweet et al., 2012).

Servant leadership, as an 'autonomy supportive' contextual factor that can enhance need satisfaction (Deci and Ryan, 2000; Gagne, 2003), is an important human-centric leadership approach (Van Dierendonck, 2011; Bardy, 2018; Fernandez and Shaw, 2020) that emphasizes the attentiveness of leaders to employees' basic psychological needs and how they empathize with them (Greenleaf, 1977). Moreover, servant leaders are considered community builders who provide opportunities for employees to interact with each other. Their emotional intelligence and stability can provide the trust needed in employment relationships (Eva et al., 2019). Because of this, servant leadership may lead to positive emotional responses that affect employees' evaluations of the (financial and non-financial) rewards of their job, such as job autonomy, flexibility, social contacts, personal development and growth, and career opportunities, which is reflected in higher job satisfaction (Aziri, 2011; Alegre et al., 2016).

In a similar vein, it can be argued that communication frequency with the supervisor can be viewed as an 'autonomy supportive' contextual factor that plays a role in employees' job satisfaction. Through more frequent social interaction and meaningful connections, SDT and self-efficacy theory (Bandura, 1977) suggest that leaders can satisfy employees' basic psychological needs which enhances their self-efficacy and autonomous motivation (Sweet et al., 2012), resulting in job satisfaction (Gagne, 2003).

Traditionally, face-to-face interaction has been considered the most salient way of interacting, as it is synchronous and enables the exchange of multiple and rich cues, allowing employees to use all their human senses, which can lead to higher levels of job satisfaction (Fonner and Roloff, 2010). In the context of remote working, however, face-to-face communication is often partly or completely replaced by communication *via* information and communication technologies (ICT), such as individual video-calls (e.g., *via* Teams, Skype, or Zoom), individual telephone calls, e-mail messages, and WhatsApp messages, which makes it more challenging for leaders to interact with their followers (Erickson, 2021). More specifically, according to media richness theory (MRT; Lengel and Daft, 1988) and media synchronicity theory (MST; Dennis and Valacich, 1999), IT-mediated communication is less 'channel rich' and often asynchronous compared to face-to-face communication, which hinders direct feedback and the transfer of business and personal information, signals, and personal attention (Martins et al., 2004; Lee et al., 2005; Smith et al., 2018). Even though the quality of digital communication nowadays comes close to that of face-to-face communication (Nguyen et al., 2020), making use of IT-mediated communication channels may be less effective, particularly when it comes to providing complex and ambiguous information and feedback and to signalling that employees are valued. Therefore, communication has become a constant leadership concern, not only regarding team effectiveness (Tigre et al., 2022), but also regarding job satisfaction (Paksoy et al., 2017).

Finally, the generation literature suggests that the importance of servant leadership and communication frequency and quality (i.e., type of communication channel) for job satisfaction may differ across generations. A generation, often called a cohort, refers to "an identifiable group that shares birth years, age, location, and significant life events at critical developmental stages" (Kupperschmidt, 2000, p. 66) and who have experienced similar social, historical, and life events (Mannheim, 1972). This categorization may be important to consider, particularly when it comes to a comparison of groups that have been socialized with very different technologies and lifestyles (Nicholas, 2009). Generally, four generations can be distinguished in the workplace: Baby Boomers (born 1946–1965), Gen (eration) X (born 1966–1980), Gen Y or Millennials (born 1981–2000), and Gen Z (born 2001+). The focus in this paper is on the older generations (in this study: the Baby Boomers and Gen X) versus the younger generations (in this study: Gen Y), as these are dominant and distinct groups in today's workforce (Hart, 2006; Taylor, 2018). More specifically, particularly Gen Y may value personal support (Anderson et al., 2017) characterizing servant leadership (Barbuto and Gottfredson, 2016). Moreover, Gen Y may be more computer literate and technology ready than Baby Boomers and Gen X and, therefore, more prepared to work in remote work contexts (Pearson et al., 2010; Anderson et al., 2017; Camp et al., 2022). Although MRT (Lengel and Daft, 1988) considers e-mail and WhatsApp communication to be leaner communication channels than face-to-face communication, recent literature (Ishii et al., 2019) suggests that perceptions of media richness may differ across generations, as these much depend on the

experience people have with using information and communication channels, such as text-based communication (e.g., e-mail and WhatsApp). Since technology plays an important role in remote work contexts, the generation lens can be interesting to further explore (Heuss et al., 2022).

Our study aims to contribute to the conversations on the role of 'autonomy supportive' factors in employee wellbeing in remote work contexts by examining the relationships between servant leadership, communication frequency with supervisor — overall and *via* synchronous (i.e., video-calls, telephone calls) and asynchronous communication channels (i.e., e-mail messages, and WhatsApp) — on the one hand, and job satisfaction, on the other, and the moderating role of generation (Baby Boomers and Gen X versus Gen Y) in these relationships.

The intended contribution of our study is threefold. First, our study extends the literature on employee wellbeing in remote work contexts by examining how both leadership style and communication frequency with the supervisor (overall and *via* synchronous and asynchronous communication channels) — as indicators of work conditions that according to SDT (Deci et al., 2017) can support employee autonomy— may foster employee wellbeing in terms of job satisfaction (Inceoglu et al., 2018). Second, we contribute to the conversation on the changing role of leadership by examining the extent to which servant leadership relates to job satisfaction, which may be particularly important for younger generations in remote work contexts (Fernandez and Shaw, 2020; Banks et al., 2022; Tigre et al., 2022). Third, we contribute to the literature on media richness by examining communication frequency, also considering the communication channel, as factor in employee wellbeing in remote work contexts (Lengel and Daft, 1988; Ishii et al., 2019). More specifically, employing a generation lens (Heuss et al., 2022), we examine how the frequent use of synchronous and asynchronous communication channels, can impact job satisfaction differently for older versus younger generations.

Theory and hypotheses

Servant leadership and job satisfaction

In present-day volatile and remote work contexts, directive leadership may only have short-term effects (Stoker et al., 2022). Although directive leadership can help structure the work of employees by setting clear goals and giving feedback when the work is not satisfactory, it does not stimulate employees and teams to act autonomously, to collaborate with peers inside and outside the organization, and to develop their skills and competences (Donia et al., 2016), which relates to the three basic human needs distinguished by Deci and Ryan (2000). A more appropriate leadership style to satisfy employees' psychological needs is servant leadership (de Sousa and van Dierendonck, 2014). Servant leadership was first introduced by Greenleaf (1977), stressing leaders' motivation to serve others and to make sure that their needs are taken care of above their own. Since then, the concept of servant leadership has been presented as a multidimensional construct (Spears, 2010; Liden et al., 2014). A seminal multidimensional conceptualisation by Van Dierendonck (2011) illustrates that servant leaders empower and develop employees, display humility, are authentic, embrace employees for what defines them, provide direction, and show stewardship. In consecutive work, Van Dierendonck et al. (2017) examined which central servant leadership dimensions were supported and solid across eight different countries. We draw from this cross-culturally validated five-dimensional conceptualization (Van Dierendonck et al., 2017) in the present study, and consider the following five servant leadership dimensions: empowerment, humility, authenticity, standing back, and stewardship.

The first dimension, *empowerment*, has two facets (Van Dierendonck et al., 2017). It focuses on enhancing people's autonomous motivation by providing autonomy, responsibility and decision-making influence. Moreover, it has a developmental aspect which focuses on enabling employees to develop themselves. More specifically, servant leadership aims to promote a proactive attitude and self-confidence among followers (Van Dierendonck, 2011) by showing that they are valued and that their learning potential is recognized, which encourages employee development (Laub, 1999).

The second dimension, *humility,* refers to leaders' ability to assess the true value of one's own achievements and talents (Patterson, 2003), and acknowledge that they themselves are not flawless but also capable of making mistakes (Van Dierendonck and Nuijten, 2011).

The third dimension, *authenticity*, reflects the expression of oneself that corresponds to one's inner thoughts and feelings. It is about being true to oneself, expressing feelings and thoughts, intentions, and commitment (Van Dierendonck and Nuijten, 2011). This leadership behavior is displayed by doing what is promised, visibility within the organization, honesty, and vulnerability (Van Dierendonck, 2011).

The fourth dimension, *standing back,* relates to a leader's lack of pretension when withdrawing from a task that has been successfully completed (Van Dierendonck and Nuijten, 2011). Servant leaders can put other people's interests first and offer essential support when needed (Van Dierendonck, 2011).

The fifth dimension, *stewardship*, refers to the leader's willingness to take responsibility for the actions and performance of the team, act as a role model, and encourage others to act for the team. This characteristic is related to social responsibility, loyalty, and teamwork (Van Dierendonck, 2011), which taps into employees' need for belongingness.

Servant leadership aims to promote job satisfaction by creating a positive work atmosphere (Eva et al., 2019). In line with this, Chan and Mak (2014) reported that servant leaders strive for high quality relationships with their employees and are eager to support and encourage them, which can enhance their need satisfaction, autonomous motivation and, ultimately, job satisfaction. Also, Jenkins and Stewart (2010) claimed that when servant leaders increase trust between themselves and their employees, employees feel valued in their jobs and gain intrinsic benefits from their work, which can impact job satisfaction. Recently, a systematic literature review by Langhof and Güldenberg (2020) revealed empirical evidence for a positive relationship between servant leadership and job satisfaction, albeit mostly in non-remote work contexts. However, particularly in times of need and crisis, such as the COVID-19 pandemic, employees are expected to experience higher levels of autonomous motivation and job satisfaction when they perceive that their organization provides support and shows concern for their wellbeing (Eisenberger et al., 2001). Therefore, we propose the following:

> *Hypothesis 1*: Perceived servant leadership is positively related to job satisfaction.

Communication frequency and job satisfaction

Communication between leaders and followers can be conceived as important for fulfilling employees' basic psychological needs, and hence, can increase autonomous motivation and job satisfaction. Communication allows to exchange greater levels of information that help to work autonomously, to prevent professional isolation (Marshall et al., 2007) and build and maintain high-quality employment relationships, and to gain information that help employees to develop professionally (Fonner and Roloff, 2010; Stevens, 2020), which may point to the importance of communication frequency (Kacmar et al., 2003). In remote work contexts, frequent communication may have become even more important for building trust (Erickson, 2021). Missing out social face-to-face interactions and reduced interactions with supervisors and colleagues can run parallel with decreased job satisfaction among remote workers (Cooper and Kurland, 2002; Golden and Viega, 2005). In line with this, Staples (2001) found that communication frequency between manager and employees ensured a higher level of interpersonal trust and, therefore, higher levels of job satisfaction among remote workers relative to non-remote workers.

Contrary to these findings, however, Fonner and Roloff (2010) found that less frequent information exchange among high-intensity teleworkers, relative to office-based workers, related to higher job satisfaction, which could be attributed to lower stress from meetings and interruptions, and, consequently, less work-life conflict. In their view, teleworkers also perceived less office politics, which enhanced job satisfaction. Although some authors indicated that high telework-intensities (i.e., more than 15.1 h per week) may plateau the positive telework-job satisfaction relationship, suggesting a curvilinear relationship (Golden and Viega, 2005), the findings by Fonner and Roloff (2010) indicated that high-intensity teleworkers were more satisfied than collocated office workers. Strikingly, their results suggest that less interaction with others, indicating more job autonomy and independence, satisfying employees' need for autonomy, can be beneficial. This chimes with the findings by Leonardi and Barley (2010) who found that teleworkers strategically dealt with the expectation of constant connectivity in remote work contexts by reducing their interaction intensity to focus on their work. In addition, others argued that the frequent use of digital communication can have a negative effect on employees due to too many interruptions and unpredictability of digital communication channels (Ter Hoeven et al., 2016).

In the context of the COVID-19 pandemic, however, communication may have been especially important given the uncertainty that this period entailed. Hence, particularly during the COVID-19 pandemic, leader-follower communication frequency can be seen as a proxy for perceived employee support and dealing with stress in times of crisis, which may enable employees' need satisfaction and, subsequently, positively impact job satisfaction (Rhoades and Eisenberger, 2002). Therefore, we propose the following:

> *Hypothesis 2*: Perceived communication frequency with the supervisor is positively related to job satisfaction.

Frequency of use of communication channel and job satisfaction

In remote work contexts, also communication quality, which may depend on the communication channels used, might impact job satisfaction. According to the MRT (Daft and Lengel, 1986), the quality of communication channels (media) can be classified based on their 'media richness' and the equivocality of tasks. Communication media vary in their degree of "richness," or the "ability of information to change understanding within a time interval" (Daft and Lengel, 1986, p. 561) and the extent to which the ambiguity of a message can be reduced (Daft et al., 1987). More specifically, media richness can be assessed based on four characteristics: (1) capacity of immediate feedback, (2) ability to use multiple cues, (3) personal focus provided, and (4) language variety. Based on these criteria, the richness of communication channels rank 'face-to-face' communication as the richest, followed by telephone, written documents, and messages, including e-mails. As new electronic communication media, such as individual video-call (e.g., *via* Teams, Skype, or Zoom) and WhatsApp, are developing rapidly, also MST (Dennis and Valacich, 1999) can be helpful to classify channels regarding these channels' media richness. In fact, MST focuses on the same characteristics as MRT but incorporates the capability of achieving synchronicity in communication. This will be elaborated below.

E-mail is a text-only communication tool which runs asynchronous and has low channel richness (Lengel and Daft, 1988). Although the use of this channel lacks personalization and is limited in conveying signals, it has proven its effectiveness and mainly offers the advantage of continuity in conversations in remote work contexts (Smith et al., 2018).

Like e-mail, *instant messaging* (e.g., *WhatsApp*) is a form of textual computer-mediated communication but it allows users to communicate more synchronously when others are available than e-mail (Smith et al., 2018). These tools allow for rapid feedback and are often seen as a supplemental and informal form of communication that has gained importance in work contexts (Darics, 2020; Omar et al., 2020).

Telephone communication runs synchronously and allows for a greater direct exchange of (social) information. Consequently, it is considered more channel rich than e-mail. However, a disadvantage is that both parties must be available at the same time and that it does not allow messages with continued interactivity (Smith et al., 2018).

Video conferencing comes closest to face-to-face interactions and has a high channel richness. In high-intensity remote work contexts, this communication channel is considered to have the capacity to compensate for the absence of face-to-face interactions.

Following MRT and MST, when the communication between leaders and followers is complex and the level of ambiguity of the message content is high, face-to-face communication would be most effective (Boell et al., 2016). For a lower level of ambiguity of the message, however, a leaner medium, such as telephone or e-mail, may be more effective (Daft and Lengel, 1986). In line with this, research demonstrated that richer communication channels are more often used to communicate complex information, whilst leaner communication channels are more suitable for simple information (Matarazzo and Sellen, 2000). An empirical study by Peltokorpi (2015), for example, pointed out that, despite the many advantages associated with IT-mediated communication, face-to-face

communication remained the standard for transferring tacit knowledge, whereas for communicating more explicit knowledge, such as data, lean media were shown to be more appropriate.

Although communication channels, such as e-mail, instant messaging (WhatsApp), telephone, and video calls may be more appealing and suitable for remote workers, also in remote work contexts, face-to-face communication is usually presented as the most preferred communication channel for leader-follower interactions (Smith et al., 2018), as these can better satisfy employees' basic psychological needs. In line with leader-member exchange theory, positing that mutual trust and support is crucial for developing and maintaining high-quality relationship (Graen and Uhl-Bien, 1995), Braun et al. (2019) found that employees preferred face-to-face communication with their leaders in favor of e-mail and telephone communication, as they perceived this enhanced their mutual understanding, which was associated with higher job satisfaction. For employees who spend a lot of time working from home, video communication may compensate for the absence of face-to-face interactions. Nevertheless, research demonstrated that during the COVID-19 pandemic, long-lasting use of video calls was exhausting and caused so-called 'zoom fatigue,' which caused people to prefer to meet *via* other media channels (Nesher Shoshan and Wehrt, 2022).

Building on MRT (Lengel and Daft, 1988) and MST (Dennis and Valacich, 1999), we generally propose that to achieve job satisfaction in remote work contexts, frequent use of synchronous, relative rich communication channels (face-to-face communication, video calls, and telephone) remains superior to other communication channels.

> *Hypothesis 3*: The positive relationship between the frequency of use of synchronous communication channels (i.e., face-to-face communication, video calls, and telephone) and job satisfaction is stronger than the relationships between the frequency of use of asynchronous communication channels (i.e., WhatsApp and e-mail) and job satisfaction.

The moderating role of generation

Despite that generations are labeled differently, and the periods of birth years covered by these labels vary, there is consensus among academics and practitioners that generations have different norms, values, needs, and behaviors (Eisner, 2005; Anderson et al., 2017), which can also play a role in how their psychological needs are satisfied. Joshi et al. (2011) defined generational cohorts as those individuals grouped by birth years that have experienced common social and historical events during their formative years. This is of importance, particularly when comparing groups which represent individuals raised with very different technologies and lifestyles (Nicholas, 2009). Baby Boomers, stereotypically described as independent, workaholic, and disciplined, are now either retired or on the point of retirement (Eisner, 2005; Heuss et al., 2022). Gen X are considered to value greater autonomy and freedom regarding how they work; they are skeptical of authority, most likely due to the economic downturns which occurred as many of them were seeking their first job. They are not particularly fond of being micromanaged and are often in management roles themselves (Jones et al., 2019). For Baby Boomers and Gen X, education is considered necessary, and they are trying to keep up with technology. Gen Y, however, is the first generation that grew up in a world characterized by transparency, great individualism, many choices, and constant communication (Heuss et al., 2022). One of the distinctive characteristics that make Gen Y unique is that they were socialized when the development of the Internet and digital media changed the world. The literature is consistent in describing Gen Y as 'me-oriented' (individualistic) and as having a great desire for management support (Anderson et al., 2017), searching for meaningful jobs, work-flexibility, job satisfaction, and team collaboration in a non-hierarchical, flatter workplace (Joshi et al., 2011). Moreover, they strongly prefer to work for employers that they respect and can learn from and that support their work-life balance (Hastings, 2008).

There is some evidence that relationship-oriented leadership, characterized by inter-personal reliability, support, and trust, is valued higher among younger generations, including Gen Y, than task-oriented leadership, being more focused on personal credibility and competence (Lyons and Kuron, 2014). Younger generations also prefer to work with leaders who provide working environments that meet their individual fulfillment and ambitions rather than who focus on task and organizational success (Lyons and Kuron, 2014). Barbuto and Gottfredson (2016), for example, stressed that Gen Y prefer servant leaders who focus on employees' developmental needs and human capital improvements. Also, according to Balda and Mora (2011), servant leadership particularly fits the needs of Gen Y, as this generation strongly values meaningful relationships with peers and supervisors, suggesting that servant leaders' open way of communicating promotes job satisfaction. Therefore, we propose the following:

> *Hypothesis 4a*: The proposed positive relationship between perceived servant leadership and job satisfaction is stronger for Gen Y compared to Baby Boomers and Gen X.

Communication frequency between leaders and followers can be associated with higher levels of interpersonal trust among remote workers (Staples, 2001). Myers and Sadaghiani (2010) noted that Gen Y seems to look for a team-based workplace culture with close contact and communication with superiors and frequent feedback to satisfy their basic psychological needs. In a similar vein, Barbuto and Gottfredson (2016) referred to a survey by Ernst and Young that found that 85% of Gen Y want frequent and fair feedback, which was higher than Gen X. A study by Gabrielova and Buchko (2021) found that Gen Y employees are entrepreneurial thinkers who like to take responsibility, demand direct and immediate feedback, expect a frequent sense of accomplishment, and have a high need for engagement and support from their manager and organization (Winter and Jackson, 2014). Since in remote work contexts, frequent communication with the supervisor is important to enhance job-satisfaction, and Gen Y values communication even more, we propose that:

> *Hypothesis 4b*: The proposed positive relationship between communication frequency and job satisfaction is stronger for Gen Y than for Baby Boomers and Gen X.

As younger employees are more experienced with using lean and asynchronous communication channels, younger generations can be expected to perceive messaging as richer than older generations. In

earlier research, Reisenwitz and Iyer (2009) found that Gen Y, relative to the older generations, has a higher preference for web applications and e-mail-communication and that Gen Y, who are more comfortable with technology, make use of collaborative tools, such as mobile phones, instant messaging, and social networking platforms, to connect with others and to facilitate a collective process of creative problem solving. Generally, Gen Y is more proficient at multitasking, and their preferences for communication with co-workers and peers are significantly different—and more technology-oriented—from those of Gen X. Online communication can also be an efficient way to satisfy employees' basic psychological needs. This is in line with remote workers who have less frequent communication but perceive their communication to be of higher quality, timelier, and more efficient, which can result in job satisfaction (Fonner and Roloff, 2010). Therefore, we propose that:

> *Hypothesis 4c*: The proposed positive relationship between the frequency of use of synchronous communication channels (face-to-face, video calls, telephone) and job satisfaction is weaker for Gen Y relative to Baby Boomers and Gen X.

> *Hypothesis 4d*: The proposed positive relationship between the frequency of use of asynchronous communication channels (WhatsApp and e-mail) and job satisfaction is stronger for Gen Y relative to Baby Boomers and Gen X.

Materials and methods

Sample and procedure

This study was part of a larger, cross-sectional multi-source data collection effort on leadership and wellbeing during the COVID-19 pandemic. Data was collected in Belgium and the Netherlands through student-recruited sampling (Wheeler et al., 2014) by students enrolled in a (part-time) Master or PhD program at one of two Dutch universities. The incentive for Master student recruiters to participate was the use of the collective dataset for their thesis projects. Since the two universities had different deadlines for the thesis projects, there were two periods in which data was collected. The first data collection took place in the Netherlands between December 2020 and January 2021, while the second data collection was conducted in Belgium and the Netherlands between May and July 2021.

Since we were interested in exploring the effects of servant leadership, communication frequency, and communication channels within a remote (homeworking) context, employees who did not or hardly worked from home during the pandemic or who worked from home less during the pandemic were eliminated from the sample. In addition, in this study, we only included employees when at least two employees rated their manager's servant leadership behavior. Cases with missing data were removed. In total, 273 employees nested in 89 managers were included in the sample. An average of 3.07 employees (range 2 to 11 employees) filled in information about their manager's servant leadership style.

Fifty-two percent of employees in the sample were female. 53.8% of employees belonged to the millennial generation (Gen Y), while 46.2% belonged to the older generations (Baby Boomers and Gen X). The majority (80.2%) of respondents had completed a higher education degree. Student recruiters were asked to provide contact information of a diverse group of knowledge workers employed at different organizations and in different industries. Hence, respondents in our sample worked across the public and private sectors in a variety of organizations (e.g., governmental institutions, healthcare, banks, insurers, employment agencies). The majority of respondents (67.8%) worked in organizations with more than 500 employees. The mean tenure with the organization was 11.16 (SD = 10.85) years ranging from less than 1 year to 46 years. The tenure with one's manager ranged from less than 1 year to 31 years with an average of 2.69 years (SD = 3.09). 71.43% of the employees in our sample did not work from home prior to the COVID-19 pandemic and indicated to work from home regularly or completely during the COVID-19 pandemic, while 28.57% had already worked from home prior to the pandemic and was still working (partly) from home during the pandemic.

Since the data was collected at different periods during the pandemic (December 2020 – January 2021; May – July, 2021) and within two different countries (Belgium and the Netherlands), it is important to discuss the similarities in governmental regulations during this period. In the Netherlands, in relation to the two data collection efforts, the lockdown was still in effect between December 2020 through June 5, 2021. While the Netherlands reopened after June 5, the advice (in effect from June 26, 2021) was that employees travel to the office for no more than half their workweek (RIVM, 2021). In Belgium, it was mandatory to work from home between April and July 2021. Employees were allowed to go to the office a maximum of one time per week (Belgium.be, 2021). Toward the end of the data collection (June 26 – beginning of July), the Netherlands had fewer restrictions regarding going to the office, yet only a few employees responded to the questionnaire after June 26.

Measures

Servant leadership

A cross-culturally validated 18-item scale developed by Van Dierendonck et al. (2017) was used to measure servant leadership. The 18 items represent five dimensions of servant leadership (empowerment, humility, authenticity, standing back, and stewardship). The items were measured on a 6-point Likert scale ranging from (1) strongly disagree to (6) strongly agree. An example item includes 'my manager keeps himself/herself at the background and gives credits to others'.

Communication frequency

Communication frequency with one's supervisor was based on a measure presented in Webster and Wong (2008). In their study, Webster and Wong (2008) asked respondents to indicate the frequency with which they communicated with eight different media on a 7-point Likert scale (1 = never, 2 = about once a month, 3 = about once a week, 4 = about once a day, 5 = about 2–3 times a day, 6 = about 4–5 times per day, 7 = almost continuously). The sum of those eight communication media items was used to represent total

communication frequency. In the present study, we adopted a similar approach, although we limited the media channels to face-to-face, telephone, e-mail, video calls, and WhatsApp. Moreover, we specifically asked employees to indicate how often they had used each of the communication channels in their communication with their direct manager during the COVID-19 pandemic. While originally, we used the 7-point Likert response scale, we recoded the variables to a 5-point scale to obtain a more equal division across response points (1 = never, 2 = about once a month, 3 = about once a week, 4 = about once a day, about 2–3 times a day, about 4–5 times a day, 5 = almost continuously). Communication frequency was calculated as the sum of the frequency with which employees communicated with their manager across all channels, with a minimum score of 5 and a maximum score of 25.

Frequency of use of types of communication channels

To tease out the effects of specific media channels [i.e., synchronous communication channels (face-to-face, video, and telephone) and asynchronous communication channels (e-mail, WhatsApp)], we used the recoded 5-point scales of the single items adapted from Webster and Wong (2008).

Job satisfaction

Job satisfaction was measured with the 4-item scale of Mossholder et al. (2005). The items were measured on a 7-point Likert scale ranging from strongly disagree to strongly agree. An example item includes 'All in all, I am satisfied with my job'.

Generation

To determine generational cohort, the respondents' age was subtracted from the year in which the data was collected. For the first data collection effort (December 2020 – January 2021), we used the year 2020. That is, since only a few respondents filled in the questionnaire in 2021, and it was only the very beginning of 2021, it made more sense to use 2020 to calculate one's year of birth. For the second data collection effort (May – July, 2021), 2021 was used. By subtracting one's age from the year of data collection, we could obtain a good approximation of one's year of birth. Generational cohorts were devised based on the respondents' year of birth. Employees born between 1981 and 2000 were grouped into the category Gen Y (coded 1). Employees born between 1946 and 1965 (Baby Boomers) and between 1966 and 1980 (Gen X) were grouped into the category older generations (coded 0).

Confirmatory factor analyses

We conducted confirmatory factor analyses (CFAs) for the multi-dimensional scales included in our study (i.e., servant leadership, job satisfaction). The CFAs were conducted at the individual level of analysis. We first conducted a series of CFAs to examine the factorial structure of the servant leadership scale. Following Van Dierendonck et al. (2017), we compared the fit of a one-factor servant leadership model consisting of 18 items to a 5-factor model with five dimensions represented by 18 items. Both models did not have an acceptable fit (see Table 1). Despite the use of a previously validated scale, considering the results, we found it important to conduct post-hoc analyses (e.g., exploration of modification indices) and continue in an iterative, exploratory fashion.

According to the modification indices, one item of the humility dimension and one to two items of the authenticity dimension seemed to (cross) load on a different factor. In addition, one authenticity item had a factor loading below 0.50. When the modification indices do not offer a clear picture, EFA is more informative regarding the identification of cross-loading items than CFA (Farrell, 2010). Consequently, we performed an EFA on the 18 items. The results of the EFA showed that the three authenticity items did not load together on one factor, with one item loading on the same factor as the empowerment items. After removal of this authenticity item, the other authenticity items still did not load on the same factor. Based on this iterative process, we decided to remove the remaining two authenticity items from the scale. One humility item also did not load on the same factor as the other two items, but instead loaded together with the six empowerment items. We removed this item. After removal of this item, the remaining four factor model had an adequate fit with the data (Table 1). Considering the high correlations between the subdimensions of the four-factor model (range 0.62 to.79), following Van Dierendonck et al. (2017), we proceeded with the examination of a higher-order servant leadership model which also showed an acceptable fit with the data (Table 1).

Next, we examined a CFA consisting of the higher-order servant leadership model with four dimensions measured through 14 items and the four-item job satisfaction scale. The model showed an acceptable fit with the data, chi-square = 304.709, df = 130, chi-square/df = 2.344, CFI = 0.94, TLI = 0.93, RMSEA = 0.070. Based on the results of the CFAs, a composite score for servant leadership (average of 14 items) and job satisfaction (average of 4 items) was created.

TABLE 1 Confirmatory factor analyses.

Factor structure servant leadership[1]	$\chi 2$	df	$\chi 2$/df	CFI	TLI	RMSEA
One-factor model (18 items)	608.653	135	4.51	0.82	0.80	0.114
Five-factor model (18 items)	411.220	125	3.29	0.89	0.87	0.092
Iterations factor structure servant leadership						
Four-factor model (14 items)[2]	190.331	71	2.68	0.94	0.92	0.079
Higher-order four-factor model (14 items)[2]	204.318	73	2.80	0.93	0.92	0.081
Measurement model servant leadership and job satisfaction						
Higher-order servant leadership (14 items, 4 factors) and job satisfaction (4 items)[2]	304.709	130	2.34	0.94	0.93	0.070

n = 273. CFI, Comparative Fit Index; TLI, Tucker Lewis Index; RMSEA, root mean square error of approximation. [1]This model consists of the original 18 items by Van Dierendonck et al. (2017). [2]In this model, the authenticity dimension was not included.

Analysis strategy: preliminary analyses

While our hypotheses were at the individual level of analysis, due to the nested structure of our data, it was important to determine whether having the same manager was an important source of variance in our data. We evaluated non-independence in two ways, (i) we considered whether individual employee ratings of one's manager's servant leadership and frequency of communication with one's manager could be (partly) attributed to having the same manager, and (ii) we assessed whether there was significant between group variance in the outcome variable (i.e., job satisfaction).

Using the tool reported in Biemann et al. (2012), we calculated interrater reliability indices [ICC(1), ICC(2)] and computed two $r_{wg(j)}$ estimates (uniform distribution and slight skew) to estimate the upper and lower bound estimate for interrater agreement on the 14-item servant leadership measure. The results showed an upper bound $r_{wg(14)}$ of 0.92, SD = 0.23 (uniform distribution) and a lower bound $r_{wg(14)}$ of 0.87, SD = 0.26 (slight skew). Based on the lower bound $r_{wg(14)}$ estimates (slight skew), 89.89% of groups had strong (0.71–0.90) to very strong agreement (0.91–1.00). For the upper bound, 94.38% of groups had strong to very strong agreement. The ICC(1) is 0.16 and the ICC(2) is 0.37, F ratio = 1.60 $p < 0.01$. The "F ratio is the result of an ANOVA-based significance test of between-group differences and indicates the statistical significance of group membership" (Biemann et al., 2012, p. 78).

In addition to servant leadership ratings, we also asked employees to indicate the frequency of communication with their manager through five different media channels. While the items focused on individual communication with one's manager, it might be that how often and in what way managers communicate with their employees is (partly) shared among employees. We, therefore, examined the ICC(1), ICC(2) and r_{wg} (uniform distribution and moderate skew) for the single-item communication frequency measures by means of Biemann et al.'s tool which also allows for the calculation of these indices for single-item measures. In Table 2 (format adapted from Biemann et al., 2012), we present the results for the single-item measures for the uniform and measure-specific (moderate skew) indices. Since the composite score is based on the sum of these single-item constructs, similar levels of agreement on the composite score are assumed. Although the significant F-tests and ICC(1) and ICC(2) values warrant aggregation, even when considering the upper bound r_{wg} indices (uniform distribution), for several communication channels there are a considerable number of groups with lack of, weak or moderate agreement. This entails that within numerous groups, the aggregated score may not represent any of the raters' perspectives adequately (*cf.* Klein and Kozlowski, 2000). Nevertheless, it is important to not simply ignore potential group-level effects, as "researchers may draw erroneous conclusions (due to biased standard errors) when unit membership is a known source of variance but is excluded from statistical analyses" (Biemann et al., 2012, p. 72).

To assess the extent of non-independence in job satisfaction, we calculated ICC(1) by dividing the interclass variance by the sum of the interclass variance and intraclass variance (ICC(1) = 0.062/(0.062 + 1.104) = 0.053) based on the null model with restricted maximum likelihood estimation (Heck et al., 2014). The ICC(1) value was at the cut-off point of 0.05 for conducting multilevel analyses (González-Romá and Hernández, 2017). Although it has been suggested that non-independence of 0.05 or lower in the outcome variable does not require multi-level analyses, the interrater agreement (r_{wg}-based indices) and interrater reliability (ICC1 and ICC2) indices for servant leadership and the communication frequency variables point to potential group-level effects that should not be neglected. Consequently, we decided to consider both the individual level and the group level components of servant leadership and the communication variables in our analysis (i.e., we included the predictor variables at both the first and second level of analysis). By taking this approach, we had the opportunity to tease out unique estimates for within and between-group coefficients.

Data analysis strategy: hypothesis testing

We conducted multi-level analyses through MIXED MODELS Linear with restricted maximum likelihood estimation in SPSS version 28. Since 'communication frequency' was constructed as the sum of the frequency on the individual communication channels it was not possible to include these variables together in one analysis (there would be perfect collinearity with one individual communication channel variable and the composite communication frequency score). Hence, we tested Hypotheses 1 and 2 (Model 1a) simultaneously and Hypotheses 1 and 3 (Model 2a) simultaneously. In both models, the level 2 predictor variables were grand mean centered, while the level 1 predictors were centered within cluster (CWC) also known as group-mean centered (Enders and Tofighi, 2007). This type of centering at level 1 and level 2 offers the opportunity to tease out within and between level effects (Enders and Tofighi, 2007). Generation, the level 1 moderator variable, was group-mean centered (CWC) to accommodate interpretation of interaction terms at level 1 (Enders and Tofighi, 2007).

To examine whether generation moderated the relationship between level 1 predictor variables and job satisfaction (Hypotheses 4a–4d), the interaction terms were included to form Model 1b (Hypotheses 4a, 4b) and Model 2b (Hypotheses 4a, 4c, 4d). The empirical models used to test the hypotheses are presented in Figure 1. The model in Panel A captures Hypotheses 1, 2, 4a and 4b, while the model in Panel B displays Hypotheses 1, 3, 4a, 4c, 4d.

As working with one's manager for less than 1 year, particularly when this was (partly) during a lockdown, may not offer sufficient time to develop an understanding of one's manager's leadership style or an awareness of communication norms, we also conducted the analyses on a sample excluding employees who had less than 1-year tenure with their manager.[1] Furthermore, while we were interested in comparing the experiences of the younger generation (Gen Y) to older generations (Gen X and baby boomers), since there might still be important differences between Gen X and baby boomers, we also conducted the analyses among a sample limited to Gen Y and Gen X respondents only.[2] Due to the relatively small percentage of baby

1 Eighteen employees had tenure less than 1 year; after removing these respondents, there were 7 cases where only one employee filled in information about one's manager, these cases were also removed. The sensitivity analyses were therefore performed among 248 employees nested in 82 managers.

2 Thirty-one employees belonged to the Baby Boom generation; after removing these respondents, there were 12 cases where only one employee filled in information about one's manager, these cases were also removed. The sensitivity analyses were therefore performed among 230 employees nested in 77 managers.

TABLE 2 Results aggregation analyses - frequency communication channels.

	$r_{wg.uniform}$		$r_{wg.moderate\ skew}$					
Measure	Mean	SD	Variance	Mean	SD	F ratio	ICC(1)	ICC(2)
Face-to-face communication	0.84	0.24	0.90	0.72	0.32	3.12***	0.41	0.68
Telephone communication	0.68	0.33	0.90	0.50	0.37	2.23***	0.29	0.55
E-mail communication	0.71	0.31	0.90	0.53	0.38	2.28***	0.30	0.56
Video communication	0.72	0.30	0.90	0.53	0.38	1.99***	0.24	0.50
WhatsApp communication	0.64	0.31	0.90	0.41	0.35	2.27***	0.29	0.56

SD, standard deviation of r_{wg} values. Variance estimations for moderate skew were based on calculation values from LeBreton and Senter (2008, p. 832) as used in the computational tool of Biemann et al. (2012). ***$p < 0.001$.

boomers in the total dataset (11.63%), we did not conduct analyses comparing only Gen Y and baby boomers. The outcome of the hypothesis tests remained the same; therefore, we present the results including the full sample of 273 employees.

Results

In Table 3, the descriptive statistics (means, SDs, and reliability coefficients) and bivariate correlations among the variables are presented. Servant leadership was significantly positively correlated with job satisfaction ($r = 0.30$, $p < 0.01$). Of the communication variables, only e-mail communication was significantly correlated with job satisfaction ($r = 0.13$, $p < 0.05$). While frequency of use of the different types of communication channels (face-to-face, telephone, e-mail, videoconferencing, WhatsApp) were generally significantly positively correlated with each other (r ranges from 0.18 to 0.54, $p < 0.01$), face-to-face and WhatsApp communication were not significantly correlated ($r = 0.09$, $p > 0.05$).

According to Hypothesis 1, there is a positive relationship between servant leadership and job satisfaction. The results of Model 1a and Model 2a show that there is a positive relationship between individual-level servant leadership and job satisfaction (estimate = 0.55, $p < 0.05$, and estimate = 0.53, $p < 0.05$ for Model 1a and 2a respectively). Moreover, group-level servant leadership and job satisfaction are significantly positively related (estimate = 0.36, $p < 0.05$, and estimate = 0.37, $p < 0.05$ for Model 1a and 2a respectively; see Tables 4, 5). Hypothesis 2 proposed a positive relationship between communication frequency with one's supervisor and job satisfaction. According to the results (Table 4), there is no significant relationship between group-level communication frequency and job satisfaction (estimate = 0.02, $p > 0.05$), nor for individual-level communication frequency and job satisfaction (estimate = −0.01, $p > 0.05$). Hence, Hypothesis 2 is not supported. Fonner and Roloff (2010) found that fewer exchanges of information was related to higher job satisfaction among high-intensity teleworkers compared to office workers. Hence, it might be that among our sample (which consisted of intense homeworkers due to government regulations during the pandemic), the frequency of communication with one's manager might not have a linear effect, but the positive effect may plateau at a certain level. Consequently, we conducted post-hoc analyses examining quadratic and cubic relationships between total communication frequency and job satisfaction. There was no support for curvilinear effects.

According to Hypothesis 3, there would be a positive relationship between all communication channels and job satisfaction, while the relationship between synchronous communication channels (face-to face, video, telephone) and job satisfaction was expected to be stronger than the relationship between asynchronous (e-mail, WhatsApp) communication and job satisfaction. The results do not support Hypothesis 3. While there are no significant relationships between the different communication channels and job satisfaction at level 1 (see Table 5), there is a significant positive relationship between e-mail communication at level 2 and job satisfaction (estimate = 0.26, $p < 0.05$). This is contrary to the expectation that synchronous communication channels would have the strongest relationship with job satisfaction.

According to Hypothesis 4a, the relationship between servant leadership and job satisfaction would be moderated by generation. There was no support for the moderating effect of generation (estimate = 0.02, $p > 0.05$, Model 1b; estimate = −0.04, $p > 0.05$, Model 2b).

According to Hypothesis 4b, the relationship between communication frequency and job satisfaction would be stronger for Gen Y. Considering the non-significant interaction effect (estimate = −0.03, $p > 0.05$), Hypothesis 4b is not supported.

Hypothesis 4c proposed that the positive relationship between synchronous communication channels and job satisfaction would be weaker for Gen Y, while Hypothesis 4d suggested that the positive relationship between asynchronous communication channels and job satisfaction would be stronger for Gen Y. There were no significant interaction effects (estimate = −0.41, $p > 0.05$, estimate = −0.31, $p > 0.05$, estimate = 0.31, $p = 0.10$, estimate = −0.10, $p > 05$, and estimate = 0.13, $p > 0.05$ for the level 1 interactions between face-to-face, telephone, e-mail, video conferencing and WhatsApp communication and generation respectively), and therefore these hypotheses were not supported (Table 5).

Discussion and conclusions

Particularly in remote work contexts, examining contextual autonomy factors in job satisfaction is important, as remote working can reduce employees' motivation and enhance turnover intention (Charalampous et al., 2019; Zöllner and Sulíková, 2021). In this section, we summarize our study's results and reflect on them in light of existing theory and research. Moreover, we discuss the study's limitations and avenues for future research and implications for management practice.

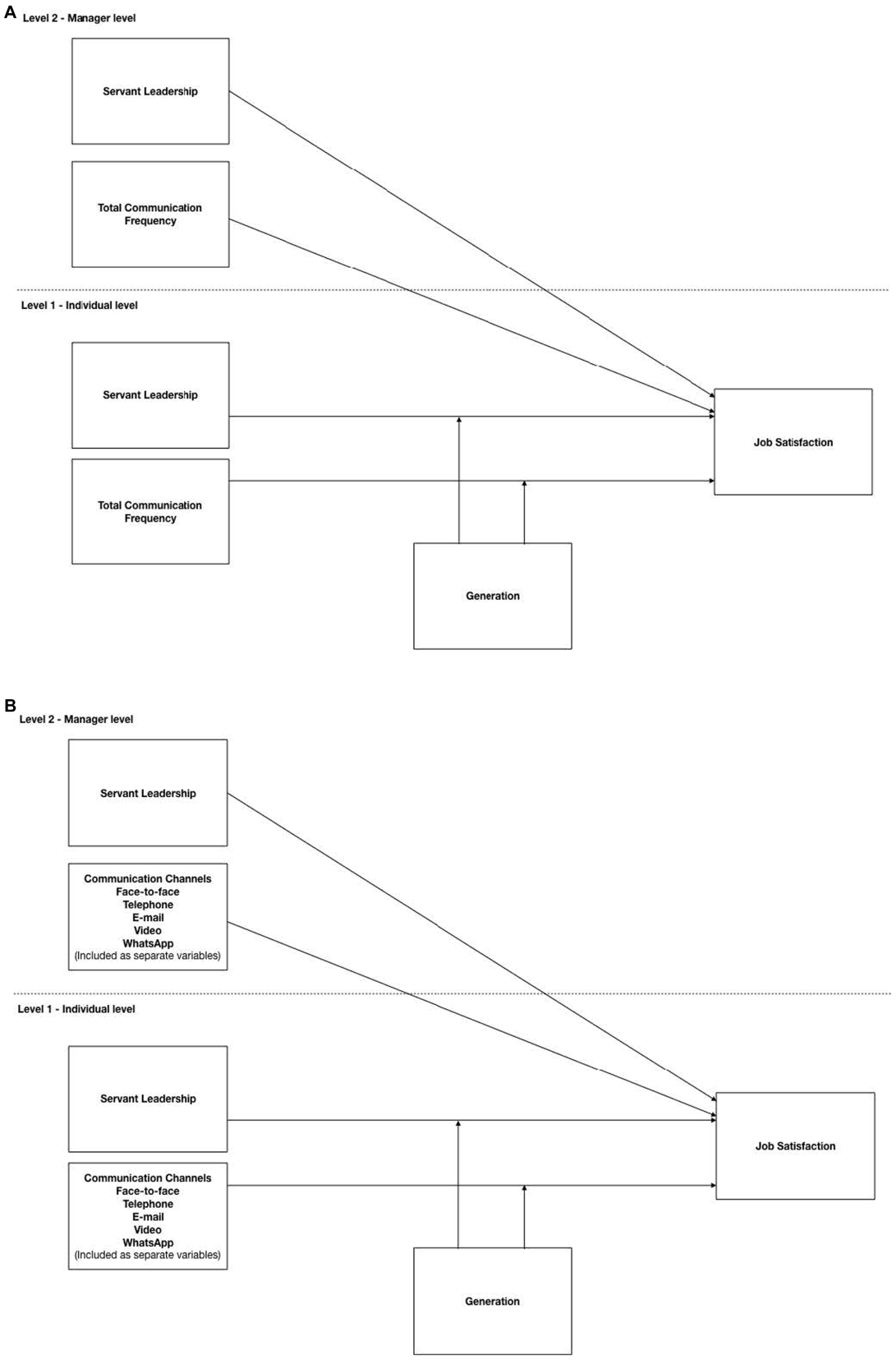


FIGURE 1
Proposed empirical models.

TABLE 3 Descriptive statistics.

Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1. Servant Leadership	4.72	0.71	(0.92)								
2. Communication Frequency	12.59	3.28	0.11	.							
3. Face-to-face Communication	1.61	0.80	0.05	0.48**	.						
4. Telephone Communication	2.70	1.01	0.02	0.77**	0.33**	.					
5. E-mail Communication	3.23	0.99	0.10	0.78**	0.18**	0.54**	.				
6. Videoconferencing	2.68	0.89	0.11	0.68**	0.20**	0.38**	0.43**	.			
7. WhatsApp Communication	2.38	1.09	0.10	0.69**	0.09	0.34**	0.46**	0.34**	.		
8. Generation	0.54	0.50	0.06	0.04	0.04	−0.00	−0.01	0.03	0.07	.	
9. Job Satisfaction	5.57	1.08	0.30**	0.06	0.01	−0.02	0.13*	0.02	0.07	−0.01	(0.90)

$n = 273$, *$p < 0.05$, **$p < 0.01$. Cronbach's alphas are displayed on the diagonal in parentheses. Generation is coded 1 (Gen Y) and 0 (Gen X and Baby Boomers).

TABLE 4 Results hypothesis tests (hypotheses 1, 2, 4a, 4b).

	Model 1a			Model 1b		
	Coef.	SE	*t*	Coef.	SE	*t*
Fixed effects						
Intercept	5.573	0.069	80.669***	5.573	0.069	80.318***
Level 1						
Servant leadership	0.55	0.114	4.830***	0.55	0.117	4.663***
Communication frequency	−0.01	0.027	−0.390	−0.01	0.027	−0.376
Generation	−0.20	0.162	−1.205	−0.20	0.163	−1.214
Servant leadership * generation				0.02	0.341	0.044
Communication frequency * generation				−0.03	0.076	−0.440
Level 2						
Servant leadership	0.36	0.144	2.490*	0.36	0.146	2.459*
Communication frequency	0.02	0.029	0.833	0.03	0.029	0.857

$N = 273$, $k = 89$. Generation (1 = Gen Y; 0 = Gen X and Baby Boomers). *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

The relationship between servant leadership and job satisfaction

In line with expectations, we found a positive relationship between servant leadership and job satisfaction. When leaders were perceived as enacting servant leadership behaviors, their followers reported more job satisfaction, possibly because their leaders' behaviors satisfied their basic psychological needs for autonomy, relatedness, and competence (Deci and Ryan, 2000; Van Dierendonck et al., 2014). Servant leaders can shape work environments for their followers that enable building trustful relationships and that can enhance individuals' autonomous motivation and job satisfaction. More specifically, by enhancing autonomy, building working communities that foster belongingness, and allocating interesting tasks that allow employees to use their capacities and develop these, leaders can sustain employees' proactive work behavior, also in remote work contexts (Coun et al., 2022). This also relates to the outcomes of the meta-analysis by Gajendran and Harrison (2007) that indicated that teleworkers are more satisfied with their jobs when they can embrace the potential benefits and advantages of remote working, such as more time-spatial flexibility, job autonomy, and improved supervisory relationships. Although previous studies did not always consider a multilevel design, our finding is in line with other studies (Chan and Mak, 2014; Donia et al., 2016) that showed a positive relationship between servant leadership and job satisfaction. In addition, many studies looking into servant leadership and job satisfaction during the COVID-19 pandemic were conducted in the educational and healthcare context (Qiu and Zhang, 2022; Turner, 2022). However, our study broadened the focus by including knowledge workers in a wide range of both public and private sectors that had to work remotely.

The relationship between communication frequency and job satisfaction

We expected that particularly within the context of remote working during the COVID-19 pandemic frequent leader-follower communication was important as this can contribute to employees' perceptions of support to work autonomously, to build professional and social relationships, and to develop professionally, which enables them to deal with stress in times of crisis and to prevent them from professional isolation (Marshall et al., 2007; Golden et al., 2008), enhancing autonomous motivation and, subsequently, job satisfaction (Rhoades and Eisenberger, 2002). This expectation, however, was not

TABLE 5 Results hypothesis tests (hypotheses 1, 3, 4a, 4c, 4d).

	Model 2a			Model 2b		
	Coef.	SE	*t*	Coef.	SE	*t*
Fixed effects						
Intercept	5.566	0.067	82.736***	5.571	0.069	80.226***
Level 1						
Servant leadership	0.53	0.117	4.564***	0.51	0.120	4.263***
Face-to-face communication	0.08	0.124	0.652	0.08	0.126	0.666
Telephone communication	−0.12	0.112	−1.099	−0.14	0.113	−1.216
E-mail communication	0.03	0.120	0.280	0.03	0.122	0.220
Videoconferencing	0.03	0.111	0.296	0.04	0.112	0.335
WhatsApp communication	−0.01	0.092	−0.123	−0.01	0.093	−0.066
Generation	−0.19	0.166	−1.164	−0.22	0.169	−1.300
Servant leadership * generation				−0.04	0.353	−0.102
Face-to-face * generation				−0.41	0.410	−0.987
Telephone * generation				−0.31	0.286	−1.065
E-mail * generation				0.31	0.328	0.953
Video * generation				−0.10	0.319	−0.322
WhatsApp * generation				0.13	0.268	0.477
Level 2						
Servant leadership	0.37	0.143	2.557*	0.36	0.147	2.453*
Face-to-face communication	−0.06	0.118	−0.506	−0.05	0.121	−0.431
Telephone communication	−0.07	0.115	−0.569	−0.07	0.118	−0.623
E-mail communication	0.26	0.125	2.093*	0.24	0.131	1.799†
Videoconferencing	−0.11	0.122	−0.896	−0.11	0.125	−0.883
WhatsApp communication	0.03	0.099	0.282	0.05	0.105	0.500

$N = 273$, $k = 89$. Generation (1 = Gen Y; 0 = Gen X and Baby Boomers). †$p < 0.10$, *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

supported by our data. Perhaps at the time of research, the employees in our sample were already used to the new remote work situation during the COVID-19 pandemic and did not feel that they needed frequent communication to interact with their supervisor to be autonomously motivated to do their work remotely. Martin et al. (2022), for example, found that in a context of perceived information overload, more frequent communication was negatively related to job satisfaction. Also before the pandemic, Fonner and Roloff (2010), Leonardi and Barley (2010), and Ter Hoeven et al. (2016) found that employees intentionally reduced the interaction frequency with the shop-floor level to be able to work more uninterruptedly and to focus and concentrate on their own work (Leonardi and Barley, 2010), perhaps to achieve more work-related flow (Peters and Wildenbeest, 2010; Peters et al., 2014) or to have more time for nonwork activities, such as 'home schooling' for their children due to schools being closed to prevent the COVID-19 virus from spreading. Also, in our study, lower communication frequencies in high-intensity remote work contexts may have contributed to lower stress from meetings and interruptions, less office politics, and, consequently, less pondering about work after work hours, resulting in less work-life conflict (Fonner and Roloff, 2010). The lack of significance in our analysis might indicate that there is not a particular pattern that relates higher or lower levels of communication intensity with job satisfaction. This resonates with Boell et al. (2016, p. 128) who pointed out the importance of looking into "the complexity and mutual dependencies of situated work activities" to understand remote work practices. In addition, they suggested that the diversity of work activities in which knowledge workers engage and the different IT-tools they use, can determine the need for and appreciation of interaction during remote working.

The relationship between the communication channel frequency and job satisfaction

Surprisingly, we only found a significant direct positive relationship between e-mail communication frequency and job satisfaction. The other communication channel frequencies of individual video calls (e.g., *via* Teams, Skype, or Zoom), individual telephone calls, and WhatsApp, however, were not significant. We expected that frequent face-to-face communication, or in remote work contexts frequent video calls, which are usually presented as the most channel rich in terms of information availability and immediacy of feedback and the opportunity to send nonverbal cues and personal focus, would be the preferred communication channels for leader-follower interactions (Smith et al., 2018), and, for those reasons, would

have had positive relationships with job satisfaction. However, frequent means of synchronous and media rich communication did not relate to higher levels of job satisfaction. This may imply that the experienced quality of the communication in remote work contexts does not depend on the quantity of rich and synchronous communication (Fonner and Roloff, 2010). Since face-to-face communication during the COVID-19 pandemic was reduced, even in times when national lockdowns were more relaxed, one would expect that frequent video calls or making telephone calls would be alternative synchronous communication channels that have the potential to compensate for the loss of face-to-face communication. However, also higher frequencies of these types of synchronous communication did not contribute to job satisfaction. Based on the literature, the finding regarding video calls could be attributed to 'zoom fatigue' (Nesher Shoshan and Wehrt, 2022). More specifically, zoom fatigue can be explained by more subjective processes rather than objective processes related to media richness and synchronicity. Subjective processes rather relate to the specific cultural-symbolic meanings of communication channels that can affect employee attitudes and reactions and enhance channel-usage related strain (Nesher Shoshan and Wehrt, 2022). In addition to the loss of richness of social cues and the difficulties with signaling these, video conferencing and the technical problems that occurred might remind them of the normal face-to-face communication that was lost during the pandemic, which depleted employees' energy resources (Nesher Shoshan and Wehrt, 2022). Additionally, telephone communication may not compensate for missing out face-to-face communication.

Apparently, however, in remote work contexts, frequent e-mail communication as a characteristic of the leader was perceived by employees as contributing to job satisfaction, and strikingly also even more than the other types of a-synchronic communication, such as WhatsApp. Probably e-mail communication allows followers to have ongoing contact with their supervisor and to exchange more information with their supervisor in an a-synchronic way. On the one hand, information exchange is an important part of empowering leadership, also characterizing servant leadership (Van Dierendonck et al., 2014), and can foster employee empowerment, which enables employees' work proactivity (Coun et al., 2022), and, therefore, may contribute to job satisfaction. On the other hand, remote workers may increasingly search for efficient ways of communication and for gaining more job autonomy and flexibility, to concentrate on work and/or nonwork activities (Gratton, 2023). E-mail communication may be a channel that allows them to be better able to control when and how to respond to the leader's information (*cf.* Fonner and Roloff, 2010), meanwhile offering the advantage of continuity in leader-follower conversations (Smith et al., 2018). Perhaps individual telephone calls can be richer in terms of receiving direct responses from the supervisor, but smaller portions of information can be exchanged. Furthermore, WhatsApp may be a more flexible, but less rich medium. Or this more synchronous channel can give employees pressure to respond faster (Smith et al., 2018) or this might be associated with more informal, supplemental communication (Darics, 2020).

The moderating role of generation

In contrast to our hypotheses, we did not find any significant moderating influence of generation. Although we expected that the younger generation (Gen Y) would benefit more from servant leadership than the older generations (Baby Boomers and Gen X), the results did not support that Gen Y would be in need of more servant leadership to be satisfied with their work. Nor did we find a stronger relationship between communication frequency and job satisfaction among the younger generation compared to the older generations, although Gen Y was expected to value more direct communication and their managers to be mentors at work (Winter and Jackson, 2014). Regardless of generation, the preferred communication frequency might be dependent on the complexity and interdependencies across workers in remote work settings. Strikingly, however the frequency of communication did not a play a different role regarding different communication channels. Possibly, all employees in our study were experienced in using different communication channels which can explain the non-significant moderation effect of generation. In fact, the pandemic may have reduced differences in experience with the use of different communication channels. In view of the 'age-period-cohort confound' (Rhodes, 1983), our study may be a result of a period effect. In future research, to disentangle this confound, a longitudinal design is essential.

General conclusion

Our study contributed to the conversation on leadership style and wellbeing (Inceoglu et al., 2018) by showing that servant leadership in remote work contexts, often characterized by uncertainty and complexity, plays an important role in fostering employees' job satisfaction (Fernandez and Shaw, 2020; Banks et al., 2022; Tigre et al., 2022). This holds true for all generations. Servant leadership is a multi-faceted leadership style that focuses on task clarification and building internal and external relationships and has the potential to fulfil employees' psychological needs in terms of autonomy, competence, and belongingness (Van Dierendonck, 2011) which motivates them for their work resulting in higher levels of job satisfaction. This, however, does not imply that leaders need to interact frequently with their followers. In line with previous studies, our study did not find support for a significant relationship between communication frequency and job satisfaction in general. Likely, the type of work and the personal needs of individuals and teams determine the ideal leader-follower interaction frequency. Yet, by simultaneously looking to leadership and the use of communication media, we found that at the leader level, also high intensities of e-mail communication can be associated with higher levels of job satisfaction. This may imply that besides human-centric leadership styles, asynchronous communication is becoming increasingly important in remote work contexts, as this allows employees to be more autonomous and flexible and at the same time able to share knowledge with their teammates. Attention and interaction with the supervisor remain important, but it may depend on the type of work (Boell et al., 2016). Besides the indicators of media richness (Lengel and Daft, 1988) and media synchronicity (Dennis and Valacich, 1999) also the social symbolic value of communication might affect job satisfaction. In our study, empowering employees by sharing information *via* e-mail reflects leaders to involve and trust employees to do their work autonomously. Paradoxically, leaders need to signal that they are supporting their teams and individual employees but at the same time they should give employees autonomy and flexibility

to do their work independently and collaborate with others remotely. This fits with the trend indicated by Gratton (2023) that people after the COVID-19 pandemic prefer to combine work with other activities outside the work domain. This holds true for employees regardless of generation.

Limitations and future research

The present study was subject to various limitations. First, the present study revealed the paradox of leaders both signalling support and autonomy. It is not clear how leaders toggle between these two poles to keep employees satisfied. Future research could explore how managers in hybrid work contexts deal with ambiguous and complex situations and choose the right media to communicate with their employees (Bergum et al., 2023).

Second, we investigated the role of servant leadership in job satisfaction of employees nested within managers. In hybrid work contexts, however, employees increasingly must collaborate with others outside their team or workgroup and their organization. Future research could examine how servant leaders take up their role to avoid siloing and act as bridge between teams and organizations to stimulate collaboration and open innovation (Edelbroek et al., 2019).

Third, although no differences across generations were found regarding the relationship between servant leadership and job satisfaction, possibly, servant leaders need to display different behaviors depending on the experience of younger and older generations in the organization. In hybrid work contexts, the role of servant leaders may be increasingly important, particularly during the onboarding processes (Bauer and Erdogan, 2011), focusing on compliance with rules and regulations, clarification of tasks, learning about organizational culture and making connections with others inside and outside the organization. The importance of onboarding in remote work contexts stresses the need for servant leaders to differentiate their behaviors, communication frequency and communication channels. Future research could focus on the role of servant leaders in relation to generations and age differences during onboarding processes.

Fourth, the cross-sectional nature of our data did not allow us to examine causality. Fifth, while overall the $r_{wg(j)}$ indices warranted aggregation of servant leadership, some groups of employees included in our sample lacked agreement or had low agreement on the servant leadership rating of their manager. Moreover, while within group agreement [$r_{wg(j)}$] and the significant F-test of the ICC indices justified our consideration of servant leadership at both the individual and leader-level, the ICC(1) and ICC(2) values for servant leadership in our study were lower than those in other studies which included servant leadership at the group level (Hunter et al., 2013; Harju et al., 2018). While the ICC(2) value was likely lower due to the low number of average raters per group, the ICC(1) values do not vary across group size (Klein and Kozlowski, 2000). Although ICC(1) values of 0.10 to 0.25 indicate a medium effect and justify aggregation (LeBreton and Senter, 2008), it is surprising that the ICC(1) values in the present study were lower in comparison to other studies measuring servant leadership.

Sixth, based on post-hoc exploratory analyses of the servant leadership measure, we had to remove all three items belonging to the subdimension authenticity. This subdimension included items such as 'my manager shows his/her true feelings towards his/her staff'. While we used a previously cross-culturally validated measure of servant leadership (Van Dierendonck et al., 2017), it might be that the COVID-19 pandemic and pursuant social distancing and work-from-home regulations stipulated by the government did not offer sufficient opportunity for managers to show authenticity across employees in the sample, which led to inconsistencies and loadings with items from other servant leadership dimensions. That is, not all managers may have felt comfortable sharing/showing feelings in a hybrid work environment. Hence, it is interesting to further explore the universal applicability of servant leadership dimensions in crisis contexts.

Seventh, although we did not consider changes in communication frequency across different communication channels over time, we presume face-to-face communication decreased due to lockdowns and governmental regulations stipulating employees to work at home when the situation allowed. However, it might be that for our particular sample of knowledge workers, face-to-face interaction and other types of interaction with one's supervisor was relatively low before lockdowns and social distancing measures due to the relatively high levels of autonomy of knowledge workers. Hence, in future research it is interesting to examine whether communication frequency differentially affects job satisfaction of knowledge versus blue-collar workers and whether, if such differential effects exist, this can be explained by the autonomy one has in one's job.

Finally, while it is not uncommon to examine communication frequency based on frequency with different types of communication channels, our study could have benefited from an approach which distinguishes between communication initiated by the employee versus that initiated by one's supervisor (Kacmar et al., 2003), as the frequency with which one's manager initiates interaction, particularly in unprecedented situations such as the COVID-19 pandemic, may play a role in an employee's attitudinal responses in the workplace. In addition, future research could also benefit from considering the role of the length of communication across communication channels. Exchanging multiple text messages a day could be experienced differently from engaging in a 3-h videocall, as the latter may lead to 'zoom-fatigue' (Nesher Shoshan and Wehrt, 2022). On the other hand, exchanging text messages several times throughout a day could be experienced as distracting by some employees. Furthermore, in the present study, we did not consider how employees appraised the communication exchanges, which could be relevant for how satisfied they are with the work environment and the support received. In future research, the appraisal of the communication exchanges could also be considered.

Managerial implications

Aside from its theoretical contributions, our study provides guidance to practitioners in the field. Especially in light of organizations considering the adoption of a new hybrid model of working (Gratton, 2021), our study strongly advocates the use of servant leadership behaviors to foster job satisfaction in employees, in remote work contexts.

Rather than focussing on frequent communication, managers should focus on the need for synchronous versus asynchronous communication which may depend on the tasks at hand and personal needs of the employee and teams (Boell et al., 2016).

Servant leaders can help remote workers to adapt to their changing work context but at the same time should leave sufficient autonomy for them to shape their work in line with their preferences. This demands management training and coaching as well. Asynchronous communication can both empower employees and offer them the flexibility they need. As post-pandemic organizations are implementing hybrid remote work policies, communication expectations will become even more important as people navigate multiple working environments.

Data availability statement

The datasets presented in this article are not readily available because respondents consented to the sharing of their data for authentication purposes only. Requests to access the datasets should be directed to the authors.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. The participants were provided a detailed written explanation of the data management procedures. To be able to match employees to managers, personal identifying information (e.g., e-mail addresses) was collected. Codes were used in the matching process. After the matching process was completed, personal identifying information, such as e-mail addresses, used in the matching process, was removed from the dataset and stored separately in an encrypted environment; only the researchers directly involved in this study have access to this information. Respondents were ensured that their personal answers would not be shared with their managers or coworkers. Student recruiters involved in the data collection received a pseudonymized dataset for their own research projects. Furthermore, participants were ensured that personal identifying information would not be presented in reports or publications. Participants were informed about data storage procedures. Moreover, participants were informed that participation was voluntary and they could withdraw at any time. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work, and approved it for publication.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

References

Ahern, S., and Loh, E. (2020). Leadership during the COVID-19 pandemic: building and sustaining trust in times of uncertainty. *BMJ Leader* 5, 1–4. doi: 10.1136/leader-2020-000271

Alegre, I., Mas-Machuca, M., and Berbegal-Mirabent, J. (2016). Antecedents of employee job satisfaction: do they matter? *J. Bus. Res.* 69, 1390–1395. doi: 10.1016/j.jbusres.2015.10.113

Anderson, H. J., Baur, J. E., Griffith, J. A., and Buckley, M. R. (2017). What works for you may not work for (Gen) Me: limitations of present leadership theories for the new generation. *Leadersh. Q.* 28, 245–260. doi: 10.1016/j.leaqua.2016.08.001

Aziri, B. (2011). Job satisfaction: a literature review. *Manage. Res. Pract.* 3, 77–86.

Balda, J. B., and Mora, F. (2011). Adapting leadership theory and practice for the networked, millennial generation. *J. Leadersh. Stud.* 5, 13–24. doi: 10.1002/jls.20229

Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychol. Rev.* 84, 191–215. doi: 10.1037/0033-295X.84.2.191

Banks, G. C., Dionne, S. D., Mast, M. S., and Sayama, H. (2022). Leadership in the digital era: a review of who, what, when, where, and why. *Leadersh. Q.* 33:101634. doi: 10.1016/j.leaqua.2022.101634

Barbuto, J. E., and Gottfredson, R. K. (2016). Human capital, the millennial's reign, and the need for servant leadership. *J. Leadersh. Stud.* 10, 59–63. doi: 10.1002/jls.21474

Bardy, R. (2018). *Rethinking Leadership: A Human Centered Approach to Management Ethics*. Routledge.

Bauer, T. N., and Erdogan, B. (2011). "Organizational socialization: The effective onboarding of new employees" in *APA Handbook of Industrial and Organizational Psychology, Vol 3: Maintaining, Expanding, and Contracting the Organization*. ed. S. Zedeck (Washington, DC: American Psychological Association), 51–64.

Belgium.be (2021). Zomerplan: Vier Stappen Naar Normaler Levens. Available at: https://www.belgium.be/nl/nieuws/2020/coronavirus_versterkte_maatregelen

Belias, D., and Koustelios, A. (2014). Leadership and job satisfaction – a review. *Eur. Sci. J.* 10, 24–46.

Bergum, S., Peters, P., and Vold, T. (Eds.) (2023). *Virtual Management and the New Normal: New Perspectives on HRM and Leadership since the COVID-19 Pandemic* Switzerland: Palgrave Mcillan.

Biemann, T., Cole, M. S., and Voelpel, S. (2012). Within-group agreement: on the use (and misuse) of Rwg and Rwg(j) in leadership research and some best practice guidelines. *Leadersh. Q.* 23, 66–80. doi: 10.1016/j.leaqua.2011.11.006

Boell, S. K., Cecez-Kecmanovic, D., and Campbell, J. (2016). Telework paradoxes and practices: the importance of the nature of work. *N. Technol. Work. Employ.* 31, 114–131. doi: 10.1111/ntwe.12063

Braun, S., Hernandez Bark, A., Kirchner, A., Stegmann, S., and van Dick, R. (2019). Emails from the boss—Curse or blessing? Relations between communication channels, leader evaluation, and employees' attitudes. *Int. J. Bus. Commun.* 56, 50–81. doi: 10.1177/2329488415597516

Camp, K. M., Young, M., and Bushardt, S. C. (2022). A millennial manager skills model for the new remote work-environment. *Manag. Res. Rev.* 45, 635–648. doi: 10.1108/MRR-01-2021-0076

Chan, S. C., and Mak, W. M. (2014). The impact of servant leadership and subordinates' organizational tenure on trust in leader and attitudes. *Pers. Rev.* 43, 272–287. doi: 10.1108/PR-08-2011-0125

Charalampous, M., Grant, C. A., Tramontano, C., and Michailidis, E. (2019). Systematically reviewing remote e-workers' well-being at work: a multidimensional approach. *Eur. J. Work Organ. Psy.* 28, 51–73. doi: 10.1080/1359432X.2018.1541886

Contreras, F., Baykal, E., and Abid, G. (2020). E-leadership and teleworking in times of COVID-19 and beyond: what we know and where do we go. *Front. Psychol.* 11:590271. doi: 10.3389/fpsyg.2020.590271

Cooper, C. D., and Kurland, N. B. (2002). Telecommuting, professional isolation, and employee development in public and private organizations. *J. Organ. Behav.* 23, 511–532. doi: 10.1002/job.145

Coun, M. J., Peters, P., Blomme, R. J., and Schaveling, J. (2022). 'To empower or not to empower, that's the question'. Using an empowerment process approach to explain employees' workplace proactivity. *Int. J. Hum. Resour. Manag.* 33, 2829–2855. doi: 10.1080/09585192.2021.1879204

Daft, R. L., and Lengel, R. H. (1986). Organizational information requirements, media richness and structural design. *Manag. Sci.* 32, 554–571.

Daft, R. L., Lengel, R. H., and Trevino, L. K. (1987). Message equivocality, media selection, and manager performance: Implications for information systems. *MIS Q.* 355–366.

Darics, E. (2020). E-leadership or "how to be boss in instant messaging?" The role of nonverbal communication. *Int. J. Bus. Commun.* 57, 3–29. doi: 10.1177/2329488416685068

de Sousa, M. J. C., and van Dierendonck, D. (2014). Servant leadership and engagement in a merge process under high uncertainty. *J. Organ. Chang. Manag.* 27, 877–899. doi: 10.1108/JOCM-07-2013-0133

Deci, E. L., Olafsen, A. H., and Ryan, R. M. (2017). Self-determination theory in work organizations: the state of a science. *Annu. Rev. Organ. Psych. Organ. Behav.* 4, 19–43. doi: 10.1146/annurev-orgpsych-032516-113108

Deci, E. L., and Ryan, R. M. (2000). The "what" and "why" of goal pursuits: human needs and the self-determination of behavior. *Psychol. Inq.* 11, 227–268. doi: 10.1207/S15327965PLI1104_01

Deci, E. L., Ryan, R. M., Gagne, M., Leone, D., Usunov, J., and Kornazheva, B. P. (2001). Need satisfaction, motivation, and well-being in the work organizations of a former eastern bloc country. *Personal. Soc. Psychol. Bull.* 27, 930–942. doi: 10.1177/0146167201278002

Dennis, A. R., and Valacich, J. S. (1999). Research note. Electronic brainstorming: illusions and patterns of productivity. *Inf. Syst. Res.* 10, 375–377. doi: 10.1287/isre.10.4.375

Donia, M. B., Raja, U., Panaccio, A., and Wang, Z. (2016). Servant leadership and employee outcomes: the moderating role of subordinates' motives. *Eur. J. Work Organ. Psy.* 25, 722–734. doi: 10.1080/1359432X.2016.1149471

Edelbroek, R., Peters, P., and Blomme, R. J. (2019). Engaging in open innovation: the mediating role of work engagement in the relationship between transformational and transactional leadership and the quality of the open innovation process as perceived by employees. *J. Gen. Manag.* 45, 5–17. doi: 10.1177/0306307019844633

Eisenberger, R., Armeli, S., Rexwinkel, B., Lynch, P. D., and Rhoades, L. (2001). Reciprocation of perceived organizational support. *J. Appl. Psychol.* 86, 42–51. doi: 10.1037/0021-9010.86.1.42

Eisner, S. P. (2005). Managing generation Y. *SAM Adv. Manag. J.* 70, 4–15.

Enders, C. K., and Tofighi, D. (2007). Centering predictor variables in cross-sectional multilevel models: a new look at an old issue. *Psychol. Methods* 12, 121–138. doi: 10.1037/1082-989X.12.2.121

Erickson, S. (2021). Communication is a crisis and the importance of authenticity and transparency. *J. Libr. Adm.* 61, 476–483. doi: 10.1080/01930826.2021.1906556

Eva, N., Robin, M., Sendjaya, S., van Dierendonck, D., and Liden, R. C. (2019). Servant leadership: A systematic review and call for future research. *Leadersh. Q.* 30, 111–132. doi: 10.1016/j.leaqua.2018.07.004

Farrell, A. M. (2010). Insufficient discriminant validity: a comment on Bove, Pervan, Beattyand Shiu (2009). *J. Bus. Res.* 63, 324–327. doi: 10.1016/j.jbusres.2009.05.003

Fernandez, A. A., and Shaw, G. P. (2020). Academic leadership in a time of crisis: the coronavirus and COVID-19. *J. Leadersh. Stud.* 14, 39–45. doi: 10.1002/jls.21684

Fonner, K. L., and Roloff, M. E. (2010). Why teleworkers are more satisfied with their jobs than are office-based workers: when less contact is beneficial. *J. Appl. Commun. Res.* 38, 336–361. doi: 10.1080/00909882.2010.513998

Gabrielova, K., and Buchko, A. A. (2021). Here comes generation Z: millennials as managers. *Bus. Horiz.* 64, 489–499. doi: 10.1016/j.bushor.2021.02.013

Gagne, M. (2003). Autonomy support and need satisfaction in the motivation and well-being of gymnasts. *J. Appl. Sport Psychol.* 15, 372–390. doi: 10.1080/714044203

Gajendran, R. S., and Harrison, D. A. (2007). The good, the bad, and the unknown about telecommuting: meta-analysis of psychological mediators and individual consequences. *J. Appl. Psychol.* 92:1524. doi: 10.1037/0021-9010.92.6.1524

Golden, T. D., Veiga, J. F., and Dino, R. N. (2008). The impact of professional isolation on teleworker job performance and turnover intentions: does time spent teleworking, interacting face-to-face, or having access to communication-enhancing technology matter? *J. Appl. Psychol.* 93, 1412–1421. doi: 10.1037/a0012722

Golden, T., and Viega, J. (2005). The impact of extent of telecommuting on job satisfaction: resolving inconsistent findings. *J. Manag.* 31, 301–318. doi: 10.1177/0149206304271768

González-Romá, V., and Hernández, A. (2017). Multilevel modelling: research-based lessons for substantive researchers. *Annu. Rev. Organ. Psych. Organ. Behav.* 4, 183–210. doi: 10.1146/annurev-orgpsych-041015-062407

Graen, G. B., and Uhl-Bien, M. (1995). Relationship-based approach to leadership: development of leader-member exchange (LMX) theory of leadership over 25 years: applying a multi-level multi-domain perspective. *Leadersh. Q.* 6, 219–247. doi: 10.1016/1048-9843(95)90036-5

Gratton, L. (2021). How to do hybrid right. *Harv. Bus. Rev.* 99, 66–74.

Gratton, L. (2023). Flexibility is key to integrating meaning and work. *MIT Sloan Manag. Rev.* Available at: https://sloanreview.mit.edu/article/flexibility-is-key-to-integrating-meaning-and-work/

Greenleaf, R. K. (1977). *Servant Leadership: A Journey Into the Nature of Legitimate Power and Greatness*. Mahwah, NJ: Paulist Press.

Harju, L. K., Schaufeli, W. B., and Hakanen, J. J. (2018). A multilevel study on servant leadership, job boredom and job crafting. *J. Manag. Psychol.* 33, 2–14. doi: 10.1108/JMP-08-2016-0237

Hart, K. A. (2006). Generations in the workplace: finding common ground. *Lab Manage.* 38, 26–27.

Hastings, R. (2008). Millennials expect a lot from leaders. *HR Mag.* 53:30.

Heck, R. H., Thomas, S. L., and Tabata, L. N. (2014). *Multilevel and Longitudinal Modeling with IBM SPSS. 2nd* Edn East Sussex: Routledge.

Heuss, S. C., Zimmerli, L., and Schneeberger, A. R. (2022). How do physicians from two generations communicate with each other? *Cogent Soc. Sci.* 8:2095745. doi: 10.1080/23311886.2022.2095745

Hunter, E. M., Neubert, M. J., Perry, S. J., Witt, L. A., Penney, L. M., and Weinberger, E. (2013). Servant leaders inspire servant followers: antecedents and outcomes for employees and the organization. *Leadersh. Q.* 24, 316–331. doi: 10.1016/j.leaqua.2012.12.001

Inceoglu, I., Thomas, G., Chu, C., Plans, D., and Gerbasi, A. (2018). Leadership behavior and employee well-being: an integrated review and a future research agenda. *Leadersh. Q.* 29, 179–202. doi: 10.1016/j.leaqua.2017.12.006

Ishii, K., Lyons, M. M., and Carr, S. A. (2019). Revisiting media richness theory for today and future. *Hum. Behav. Emerg. Technol.* 1, 124–131. doi: 10.1002/hbe2.138

Jenkins, M., and Stewart, A. C. (2010). The importance of a servant leader orientation. *Health Care Manag. Rev.* 35, 46–54. doi: 10.1097/HMR.0b013e3181c22bb8

Jones, S., Chauhan, P., and Torabian, A. (2019). Working with different generations at the Workplace: Challenges for Leaders. *Effect. Exec.* 22, 64–70.

Joshi, A., Dencker, J. C., and Franz, G. (2011). Generations in organizations. *Res. Organ. Behav.* 31, 177–205. doi: 10.1016/j.riob.2011.10.002

Kacmar, K. M., Witt, L. A., Zivnuska, S., and Gully, S. M. (2003). The interactive effect of leader-member exchange and communication frequency on performance ratings. *J. Appl. Psychol.* 88, 764–772. doi: 10.1037/0021-9010.88.4.764

Klein, K. J., and Kozlowski, S. W. (2000). From micro to meso: Critical steps in conceptualizing and conducting multilevel research. *Organ. Res. Methods* 3, 211–236. doi: 10.1177/109442810033001

Kupperschmidt, B. R. (2000). Multi-generation employees: strategies for effective management. *Health Care Manag.* 19, 65–76. doi: 10.1097/00126450-200019010-00011

Langhof, J. G., and Güldenberg, S. (2020). Servant leadership: a systematic literature review: Toward a model of antecedents and outcomes. *German J. Hum. Resour. Manage.* 34, 32–68. doi: 10.1177/2397002219869903

Laub, J. A. (1999). *Assessing the Servant Organization: Development of the Servant Organizational Leadership Assessment (SOLA) Instrument*. Florida: Florida Atlantic University.

LeBreton, J. M., and Senter, J. L. (2008). Answers to 20 questions about interrater reliability and interrater agreement. *Organ. Res. Methods* 11, 815–852. doi: 10.1177/1094428106296642

Lee, Y., Kozar, K. A., and Larsen, K. R. (2005). Does avatar e-mail improve communication? *Commun. ACM* 48, 91–95. doi: 10.1145/1101779.1101782

Lengel, R. H., and Daft, R. L. (1988). The selection of communication media as an executive skill. *Acad. Manag. Perspect.* 2, 225–232. doi: 10.5465/ame.1988.4277259

Leonardi, P. M., and Barley, S. R. (2010). What's under construction here? Social action, materiality, and power in constructivist studies of technology and organizing. *Acad. Manag. Ann.* 4, 1–51. doi: 10.5465/19416521003654160

Liden, R. C., Wayne, S. J., Liao, C., and Meuser, J. D. (2014). Servant leadership and serving culture: influence on individual and unit performance. *Acad. Manag. J.* 57, 1434–1452. doi: 10.5465/amj.2013.0034

Locke, E. A. (1976). "The nature and causes of job satisfaction" in *Handbook of Industrial and Organizational Psychology*. ed. M. D. Dunnette (Chicago, IL: Rand Mc Narlly), 1297–1349.

Lyons, S., and Kuron, L. (2014). Generational differences in the workplace: a review of the evidence and directions for future research. *J. Organ. Behav.* 35, S139–S157. doi: 10.1002/job.1913

Mannheim, K. (1972). "The problem of generations" in *The New Pilgrims: Youth Protest in Transition*. eds. P. G. Altbach and R. S. Laufer (New York: David McKay), 101–138.

Marshall, G. W., Michaels, C. E., and Mulki, J. P. (2007). Workplace isolation: exploring the construct and its measurement. *Psychol. Mark.* 24, 195–223. doi: 10.1002/mar.20158

Martin, L., Hauret, L., and Fuhrer, C. (2022). Digitally transformed home office impacts on job satisfaction, job stress and job productivity. COVID-19 findings. *Plos one*, 17:e0265131. doi: 10.1371/journal.pone.0265131

Martins, L. L., Gilson, L. L., and Maynard, M. T. (2004). Virtual teams: what do we know and where do we go from here? *J. Manag.* 30, 805–835. doi: 10.1016/j.jm.2004.05.002

Matarazzo, G., and Sellen, A. (2000). The value of video in work at a distance: Addition or distraction? *Behav. Inf. Technol.* 19, 339–348. doi: 10.1080/014492900750000045

Mossholder, K. W., Settoon, R. P., and Henagan, S. C. (2005). A relational perspective on turnover: examining structural, attitudinal, and behavioral predictors. *Acad. Manag. J.* 48, 607–618. doi: 10.5465/amj.2005.17843941

Myers, K. K., and Sadaghiani, K. (2010). Millennials in the workplace: a communication perspective on millennials' organizational relationships and performance. *J. Bus. Psychol.* 25, 225–238. doi: 10.1007/s10869-010-9172-7

Nesher Shoshan, H., and Wehrt, W. (2022). Understanding "zoom fatigue": a mixed-method approach. *Appl. Psychol.* 71, 827–852. doi: 10.1111/apps.12360

Nguyen, M. H., Gruber, J., Fuchs, J., Marler, W., Hunsaker, A., and Hargittai, E. (2020). Covid 19? Changes in digital communication during the COVID-19 global pandemic: implications for digital inequality and future research. *Soc. Media+ Soc.* 6:2056305120948255. doi: 10.1177/2056305120948255

Nicholas, A. J. (2009). Generational perceptions: Workers and consumers. *J. Bus. Econ. Res.* 7, 47–52. doi: 10.19030/jber.v7i10.2344

Omar, N. A. M., Azmi, N. J., and Sani, N. A. (2020). Is Whats App the future of workplace communication? Investigating the use of Whats App in decision-making episodes. *J. Nusantara Stud.* 5, 414–442. doi: 10.24200/jonus.vol5iss1pp414-442

Paksoy, M., Soyer, F., and Çalık, F. (2017). The impact of managerial communication skills on the levels of job satisfaction and job commitment. *J. Hum. Sci.* 14, 642–652. doi: 10.14687/jhs.v14i1.4259

Patterson, K. A. (2003). *Servant Leadership: A Theoretical Model*. Michigan: Regent University.

Pearson, J. C., Carmon, A., Tobola, C., and Fowler, M. (2010). Motives for communication: Why the millennial generation uses electronic devices. *J. Commun. Speech & Theatre Association of North Dakota* 22, 45–55.

Peltokorpi, V. (2015). Corporate language proficiency and reverse knowledge transfer in multinational corporations: interactive effects of communication media richness and commitment to headquarters. *J. Int. Manag.* 21, 49–62. doi: 10.1016/j.intman.2014.11.003

Peters, P., Poutsma, E., Van der Heijden, B. I., Bakker, A. B., and de Bruijn, T. (2014). Enjoying new ways to work: an HRM-process approach to study flow. *Hum. Resour. Manag.* 53, 271–290. doi: 10.1002/hrm.21588

Peters, P., and Wildenbeest, M. (2010). Telewerken als hulpbron? 'Flow' en uitputting onder twee telewerkcategorieën vergeleken. *Gedrag Organ.* 23, 97–117. doi: 10.1002/hrm.21588

PwC's Global Workforce Hopes and Fears Survey (2022). Available at: https://www.pwc.com/gx/en/issues/workforce/hopes-and-fears-2022.html

Qiu, S., and Zhang, R. (2022). The relationship between workplace incivility and psychological distress: the moderating role of servant leadership. *Workplace Health Saf.* 70, 459–467. doi: 10.1177/21650799221084067

Reisenwitz, T. H., and Iyer, R. (2009). Differences in Generation X and Generation Y: implications for the organization and marketers. *Mark. Manag. J.* 19, 91–103.

Rhoades, L., and Eisenberger, R. (2002). Perceived organizational support: a review of the literature. *J. Appl. Psychol.* 87:698. doi: 10.1037/0021-9010.87.4.698

Rhodes, S. (1983). Age-related differences in work-attitudes and behavior: A review and conceptual analysis.. *Psychol. Bull.* 93, 328–367. doi: 10.1037/0033-2909.93.2.328

RIVM (2021). Tijdlijn van Coronamaatregelen. Available at: https://www.rivm.nl/gedragsonderzoek/tijdlijn-van-coronamaatregelen-2021

Smith, S. A., Patmos, A., and Pitts, M. J. (2018). Communication and teleworking: a study of communication channel satisfaction, personality, and job satisfaction for teleworking employees. *Int. J. Bus. Commun.* 55, 44–68. doi: 10.1177/2329488415589101

Spears, L. C. (2010). Character and servant leadership: ten characteristics of effective, caring leaders. *J Virtues Leadersh.* 1, 25–30.

Spector, P. E. (1997). *Job Satisfaction: Application, Assessment, Causes and Consequences* Sage Publications.

Staples, D. S. (2001). A study of remote workers and their differences from non-remote workers. *J. Organ. End User Comput.* 13, 3–14. doi: 10.4018/joeuc.2001040101

Stevens, D. (2020). *Managerial Behaviors and the Impact on Employee Job Satisfaction of Telecommuters*. Delaware: Wilmington University.

Stoker, J. I., Garretsen, H., and Lammers, J. (2022). Leading and working from home in times of COVID-19: On the perceived changes in leadership behaviors. *J. Leadersh. Organ. Stud.* 29, 208–218. doi: 10.1177/15480518211007452

Sweet, S. N., Fortier, M. S., Strachtan, S. M., and Blanchard, C. M. (2012). Testing and integrating self-determination theory and self-efficacy theory in a physical activity context. *Can. Psychol.* 53, 319–327. doi: 10.1037/a0030280

Taylor, M. K. (2018). Xennials: A microgeneration in the workplace. *Ind. Commer. Train.* 50, 136–147. doi: 10.1108/ICT-08-2017-0065

Ter Hoeven, C. L., van Zoonen, W., and Fonner, K. L. (2016). The practical paradox of technology: the influence of communication technology use on employee burnout and engagement. *Commun. Monogr.* 83, 239–263. doi: 10.1080/03637751.2015.1133920

Tigre, F. B., Curado, C., and Henriques, P. L. (2022). Digital leadership: a bibliometric analysis. *J. Leadersh. Organ. Stud.* 30, 40–70. doi: 10.1177/15480518221123132

Turner, K. (2022). Servant leadership to support wellbeing in higher education teaching. *J. Furth. High. Educ.* 46, 947–958. doi: 10.1080/0309877X.2021.2023733

Van Dierendonck, D. (2011). Servant leadership: a review and synthesis. *J. Manag.* 37, 1228–1261. doi: 10.1177/0149206310380462

Van Dierendonck, D., and Nuijten, I. (2011). The servant leadership survey: development and validation of a multidimensional measure. *J. Bus. Psychol.* 26, 249–267. doi: 10.1007/s10869-010-9194-1

Van Dierendonck, D., Sousa, M., Gunnarsdóttir, S., Bobbio, A., Hakanen, J., Pircher Verdorfer, A., et al. (2017). The cross-cultural invariance of the servant leadership survey: a comparative study across eight countries. *Adm. Sci.* 7:8. doi: 10.3390/admsci7020008

Van Dierendonck, D., Stam, D., Boersma, P., De Windt, N., and Alkema, J. (2014). Same difference? Exploring the differential mechanisms linking servant leadership and transformational leadership to follower outcomes. *Leadersh. Q.* 25, 544–562. doi: 10.1016/j.leaqua.2013.11.014

Webster, J., and Wong, W. K. P. (2008). Comparing traditional and virtual group forms: identity, communication and trust in naturally occurring project teams. *Int. J. Hum. Resour. Manag.* 19, 41–62. doi: 10.1080/09585190701763883

Wheeler, A. R., Shanine, K. K., Leon, M. R., and Whitman, M. V. (2014). Student-recruited samples in organizational research: a review, analysis, and guidelines for future research. *J. Occup. Organ. Psychol.* 87, 1–26. doi: 10.1111/joop.12042

Winter, R. P., and Jackson, B. A. (2014). Expanding the younger worker employment relationship: Insights from values-based organizations. *Hum. Resour. Manag.* 53, 311–328. doi: 10.1002/hrm.21600

Zhang, J., Huang, R., Chen, Q., and Zhao, G. (2023). The relationships between supervisor-subordinate guanxi, perceived supervisor autonomy support, autonomous motivation, and employee job satisfaction: Evidence from international hotel chains in China. *Int. J. Hosp. Manage.* 108:103354. doi: 10.1016/j.ijhm.2022.103354

Zöllner, K., and Sulíková, R. (2021). Teleworking and its influence on job satisfaction. *J. Hum. Resourc. Manage. Res.* 2021, 1–18. doi: 10.5171/2021.558863

frontiers | Frontiers in Psychology

TYPE Original Research
PUBLISHED 04 September 2023
DOI 10.3389/fpsyg.2023.1147002

OPEN ACCESS

EDITED BY
Joseph Mpeera Ntayi,
Makerere University Business School, Uganda

REVIEWED BY
Tímea Juhasz,
Budapest Business School, Hungary
Jacinto Jardim,
Universidade Aberta, Portugal

*CORRESPONDENCE
Maartje Henderikx
✉ maartje.henderikx@ou.nl

RECEIVED 18 January 2023
ACCEPTED 14 August 2023
PUBLISHED 04 September 2023

CITATION
Henderikx M and Stoffers J (2023) Digital transformation and middle managers' leadership skills and behavior: a group concept mapping approach.
Front. Psychol. 14:1147002.
doi: 10.3389/fpsyg.2023.1147002

Digital transformation and middle managers' leadership skills and behavior: a group concept mapping approach

Maartje Henderikx[1,2]* and Jol Stoffers[1,3,4]

[1]Research Centre for Employability, Zuyd University of Applied Sciences, Sittard, Netherlands, [2]Faculty of Educational Sciences, Open University of the Netherlands, Heerlen, Netherlands, [3]Faculty of Management, Open University of the Netherlands, Heerlen, Netherlands, [4]Research Centre for Education and the Labour Market (ROA), Maastricht University, Maastricht, Netherlands

This study, with the aim to test theory in practice, used group concept mapping to develop a comprehensive conceptualization of middle managers' leadership behaviors concerning digital transformation as a form of radical change. Participants were professionals in the largest public organization in the Netherlands (a police organization) who were dealing with digital transformation in their own practice and who enrolled in an education program on leadership and intelligence. Based on 94 unique statements, the participant-driven results revealed six thematically coherent clusters representing leadership skills and behaviors regarding improvement and results, digital technologies, cooperation, the self, change and ambivalence, and others. The stress value of 0.2234 indicated a good fit. Further analysis showed that clusters containing soft skills and people-oriented behaviors were considered the most important. These results can serve as input to support leadership development programs for middle managers to develop themselves into people-oriented, empowering leaders who can adapt their leadership approaches to fit and support change in general and technology-driven change in particular. Ultimately this will benefit their and their employees' overall well-being at work. This study is the first to investigate middle managers' leadership skills and behaviors in a large public organization that is entirely participant-driven.

KEYWORDS

digital transformation, middle managers, leadership skills, leadership behavior, group concept mapping

1. Introduction

Affected by the increasing emergence and influence of technological innovation, digital transformation is a top priority for contemporary organizations as technology continues to shape personal and professional lives (Roblek et al., 2021; Volberda et al., 2021), driving technology-driven disruptive change (Verhoef et al., 2021; Henderikx and Stoffers, 2022). People generally classify digital transformation as a radical change, like globalization and deregulation, since it is still a relatively new and rapidly evolving phenomenon whose full impact is not yet understood (Westerman et al., 2014; Christensen et al., 2015). Due to its imminent rise, many studies focus on digital transformation and leadership, exploring emergence-related challenges of strategic leadership (Vial, 2019; Kurzhals et al., 2020; Tetik, 2020). Since digital transformation is common in many organizations, it is increasingly evident that such leadership challenges are relevant across all

management levels (Petry, 2018; Nadkarni and Prügl, 2021). This includes the middle management level, as middle managers are essential to leading and supporting organizational change (Vial, 2019; Henderikx and Stoffers, 2022). Middle managers are charged with converting organizational strategies into daily practices, requiring in-depth knowledge of the organization and the connections that span its levels (Stoker, 2006). Once digitization deploys, they must facilitate its process while continuing to lead and manage a new digital organization (Klein, 2020). However, middle management has thus far received little attention (Nadkarni and Prügl, 2021) when it comes to conceptualizing leadership to oversee such transformations (Kaivo-Oja et al., 2017; Gfrerer et al., 2021; Wu et al., 2021).

Despite the importance discussed above, the influence of digital transformation on middle management leadership level remains underexplored (Nadkarni and Prügl, 2021; Henderikx and Stoffers, 2022). To fill the gap in existing literature, Henderikx and Stoffers (2022) conducted a literature study into digital transformation and middle management leadership. They found that particularly soft skills and understanding the power of digital technology were becoming increasingly important. The present study builds on this literature study by testing theory in practice with the actual target group, the middle manager. The focus is determining which leadership skills or behaviors middle managers deem essential in light of the ongoing digitalization.

Generally, this is a difficult task due to the shortcomings of using either traditional quantitative or qualitative methods. However, group concept mapping (GCM) as a participant-driven mixed-methods approach, represents a potentially valuable concept. The participatory approach maximizes numerous knowledge sources (Trochim, 1989), by including the knowledge and ideas of stakeholders on multifaceted issues in a structured process. In addition, the approach fosters the effective realization of future interventions by engaging these stakeholders at an early stage. It is particularly effective when applied to complex, comprehensive topics, such as understanding social innovation leadership in universities (Milley and Szijarto, 2020) or digital transformation in SMEs from an ecosystemic viewpoint (Pelletier and Cloutier, 2019), because it enables a detailed overview of various components. In addition, based on a pooled analysis of 69 studies by Rosas and Kane (2012), GCM provides robust internal representational validity and effective sorting and ranking reliability estimates.

This article reports on a GCM study that offers a comprehensive conceptualization of relevant leadership behaviors and skills according to middle managers who were (and still are) dealing with digital transformation in their own practice at the time of the data collection. This study's results deepen our understanding of this particular topic and supplement extant leadership research on radical change in general. First, we discuss the theoretical background, after which the research approach is outlined, and results from initial analyses are reported. The subsequent discussion section examines these results, highlighting their consequences. Lastly, limitations and potential topics for future research on to build are discussed.

2. Theoretical background

2.1. Middle management

From various studies across different industries, it is widely agreed that middle managers are important for the success of an organization (Engle et al., 2017; DeFilippis et al., 2022). They play a crucial role in instigating change across the organization by influencing the mentalities and reasoning of their employees, as highlighted by Reynders et al. (2020) and Tsuda and Sato (2020). Their function strongly influences the implementation of entire strategic directions, as Kieran et al. (2020) emphasized. The benefits of a clearer understanding of how middle managers affect organizational transformation have been increasingly highlighted in recent years (Reynders et al., 2020; Henderikx and Stoffers, 2022; Van Doorn et al., 2022). Huy (2001, p. 73) characterizes middle managers as one level above line managers and two below the CEO. As opposed to senior managers' goal- and policy-setting functions, middle managers ensure the strategic execution of operations (Reynders et al., 2020), including reacting to the rapid changes and complexities, digital ecosystems bring. To achieve proactive digital transformations, it is crucial to entrust important tasks to middle managers who understand international markets and directly engage with stakeholders like customers in the digital environment. This ensures effective collaboration throughout the process (Alieva and Powell, 2022). During such transformations, middle managers must cope with innovative cultures, internal knowledge absorption, dynamic external environments, and rapidly changing internal organizational identities (Volberda et al., 2021; Alieva and Powell, 2022). The purpose of middle managers requires rethinking that aligns with the evolving digital ecosystems (Volberda et al., 2021), whereby they support ongoing digitalization and ultimately manage and lead emerging digital organizations (Klein, 2020).

2.2. Leadership skills and behaviors and digital transformation

Due to the increased complexity that digital ecosystems bring, traditional leadership approaches do not suffice; leading, guiding, and managing during digital transformations require a reassessment of leadership skills, behaviors, and new understandings of leadership (Mirhosseini et al., 2020). Digitalization has indeed triggered new leadership paradigms like e-leadership and digital leadership, but these approaches generally focus on the digital workforce and the use of digital assets (Torre and Sarti, 2020; Araujo et al., 2021). Recent studies identify the importance of a shift from top-down leadership to people-oriented leadership approaches (Ready et al., 2020; Henderikx and Stoffers, 2022). Studies that assess both leadership and digital transformations suggest a growing need for soft skills and behaviors (e.g., Klus and Müller, 2020; Ready et al., 2020; Henderikx and Stoffers, 2022), in combination with digital intelligence (Cortellazzo et al., 2019; Boughzala et al., 2020).

2.2.1. Soft skills

Soft skills are "personal attributes that enable someone to interact effectively and harmoniously with other people" (Oxford University Press, 2022), representing behaviors and attitudes that enable interactions with others relationally (Lista et al., 2022). They include emotions, values, and perspectives, which are challenging to share with and transfer to others (Badurdeen et al., 2010; Bauer et al., 2018). Emotions related to soft (leadership) skills were found to increase employee well-being (Inceoglu et al., 2018; Dong and Yan, 2022; Caniëls, 2023). Soft leadership behaviors that appear increasingly

important are empathy, flexibility, adaptability, integrity, vulnerability, tolerance, and patience (Jakubik and Berazhny, 2017; Klus and Müller, 2020; Ready et al., 2020; Henderikx and Stoffers, 2022).

2.2.2. Digital intelligence

The acquisition of digital intelligence involves the ability to read, modify, and interpret digital data, as well as to derive meaning and make informed decisions based on that data (Cortellazzo et al., 2019; Boughzala et al., 2020; El Sawy et al., 2020). To succeed in their role both now and in the future, middle managers should possess digital intelligence. Employees with digital intelligence are not just skilled in using technology, but also possess a deep understanding of how it can improve operational efficiency and outcomes (Boughzala et al., 2020). By continuously updating their knowledge and skills related to digital technology, they are able to drive innovation in their organizations (Cortellazzo et al., 2019).

2.2.3. Additional skills and behaviors

Moving further into the digital age, it's becoming increasingly clear that organizations need to be able to keep up with the rapid pace of technological change. To do so, employees must be prepared to adapt to new situations, be comfortable with ambiguity, and be willing to experiment and take risks which are typically skills and behaviors that belong to dealing with change (El Sawy et al., 2020). A recent literature study into digital transformation and leadership by Henderikx and Stoffers (2022) highlights that middle managers in particular must develop themselves as people-oriented, technically-minded, empowering leaders who are able to adjust their leadership approaches to fit the needs of the situation at hand.

3. Methods

3.1. Group concept mapping

GCM is a mixed-methods approach that allows gaining insights into a group's understanding of multifaceted phenomena and discovering new meanings (Kane and Trochim, 2007). Rosas and Kane (2012), van Bon-Martens et al. (2014), Rosas and Ridings (2017), and Trochim and McLinden (2017) extensively described the method. Therefore, we will only provide a summary here. According to Trochim (1989), using participant-driven data, GCM creates visualizations representing a target group's ideas and opinions. The process consists of five steps—preparation, generating statements, structuring statements, data analysis, and data interpretation (Figure 1).

Step 1 involves selecting participants and choosing a focus for the study. The researcher then formulates a focus prompt to guide the brainstorming phase and criteria for rating the statements. The rating criteria depend on the purpose of the study. During Step 2, the brainstorming phase, participants generate statements by completing the formulated focus prompt multiple times. The exercise ideally results in a varied, saturated set of statements that covers the focus of the study. A researcher typically edits the statements, checking for duplicates, split statements containing more than one thought and remove statements irrelevant to the study's focus. An optimal set contains 80 to 100 statements (Trochim and McLinden, 2017).

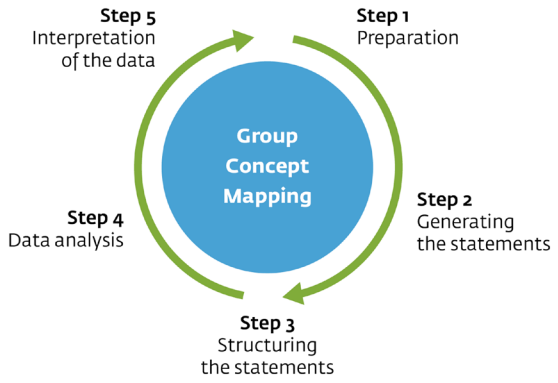


FIGURE 1
Schematic overview of Group Concept Mapping process. Based on Hagell et al. (2016).

During Step 3, the statements are sorted and rated. The participants sort the statements into piles with similar meaning or relevance and then label these piles. Restrictions on sorting include (1) a statement cannot be sorted into multiple piles, (2) more than one pile must be made, and (3) each pile must contain more than one statement. Jackson and Trochim (2002) recommend that a minimum of 10 sorters is needed, and Rosas and Kane (2012) suggest that 20 to 30 sorters is optimal. However, regardless of the number of sorters, a stress value—a fit indicator calculated using GCM software—between 0.205 and 0.365 indicates a good fit of the group concept mapping representation (Rosas and Kane, 2012). The rating of the statements occurs after sorting the statements generally using a Likert-type scale. Based on the rating criteria determined during Step 1, participants rate the statements in relation to each other.

During Step 4, data generated by the participants during Step 3 are analyzed with GCM software using multidimensional scaling (MDS) and hierarchical cluster analysis, resulting in 2-dimensional point and cluster maps. Points (i.e., statements) that are proximate on the map are sorted together more frequently, and vice versa (Trochim, 1989). Points grouped together represent clusters, and an iterative process, conducted by a researcher, determines the optimal amount of clusters with meaningful content. Lastly, during this step, average ratings of the statements from participants are combined with the generated point map and the cluster map, which results in layered versions of these maps. The layers represent participants' average ratings of the statements in other words, how important they feel the cluster is. Overall, analysis in step 4 results in four interpretable visualizations—the point map, the cluster map, the point rating map, and the cluster rating map. Step 5 involves the interpretation of the data analyzed during Step 4.

3.2. Participants

Participants were professionals at the largest public organization in the Netherlands (a police organization) who were and still are dealing with digital transformation. They enrolled in an education program on leadership and intelligence to better understand leadership in the light of (digital) change. The program ran from March to December 2021. All 40 participants (11 female, 29 male,

middle and higher management) were invited to contribute to the brainstorming task of the study, of whom 25 (6 female, 19 male) completed the task. Only middle managers (15 participants, 3 female, 12 male) were included during the sorting and rating task since they are the focus of this study.

3.3. Procedure

Participants were invited to participate in this study through the leadership course. Brainstorming, sorting, and rating tasks were completed online and were integrated into the study's structure separately. The participants received an invitation which explained the data collection procedure. The invitation also emphasized that participation was voluntary and not conditional to completing the course. Before brainstorming using the online tool, participants were again informed that participation was voluntary and asked to give their informed consent if they decided to participate.

Within 2 weeks, the participants could generate statements based on a focus prompt—"Important leadership skills and behaviors in view of the ongoing digitalization of your work are or will be…." They also responded to questions about their gender and management level. After 2 weeks, the participants generated 87 statements. The researchers then edited the statements and removed redundant ones (Trochim, 1989), after which 61 remained. To ensure a varied and saturated set of statements, the researchers added 23 statements from literature on leadership behaviors and skills and digital transformation (see Appendix A), resulting in 94 statements available for sorting and rating.

After the brainstorming, the participants had 4 weeks to complete the sorting and rating tasks. The participants first sorted the statements into piles of similar meaning or relevance. Then they rated the statements according to their perceived importance compared to the other statements using a 5-point, Likert-type scale ranging from very unimportant to very important (5). Participants who completed less than 75% of the sorting and rating were excluded from the analysis (Schophuizen et al., 2018). After the participants completed these tasks, the researchers examined and selected the optimal number of cluster solutions supported by the online GCM tool. The aim was to achieve a cluster combination that best represented the data in combination with internal thematic cluster coherence. This process resulted in six interpretable clusters that were subsequently labeled with names representing their thematic content.

4. Results

4.1. Point map

Combining the final set of generated statements with additional statements from theory resulted in 94 unique statements. Figure 2 shows the point map of this set. Each statement can be identified by number (see Appendix A). The point map illustrates the relational structure of the statements based on participants' input (Trochim and McLinden, 2017).

The GCM tool calculated the distance between points based on the bridging values of each point. A bridging value indicates the proximity of statements to each other and can range from zero to 1. Statements with lower bridging values have been sorted together in

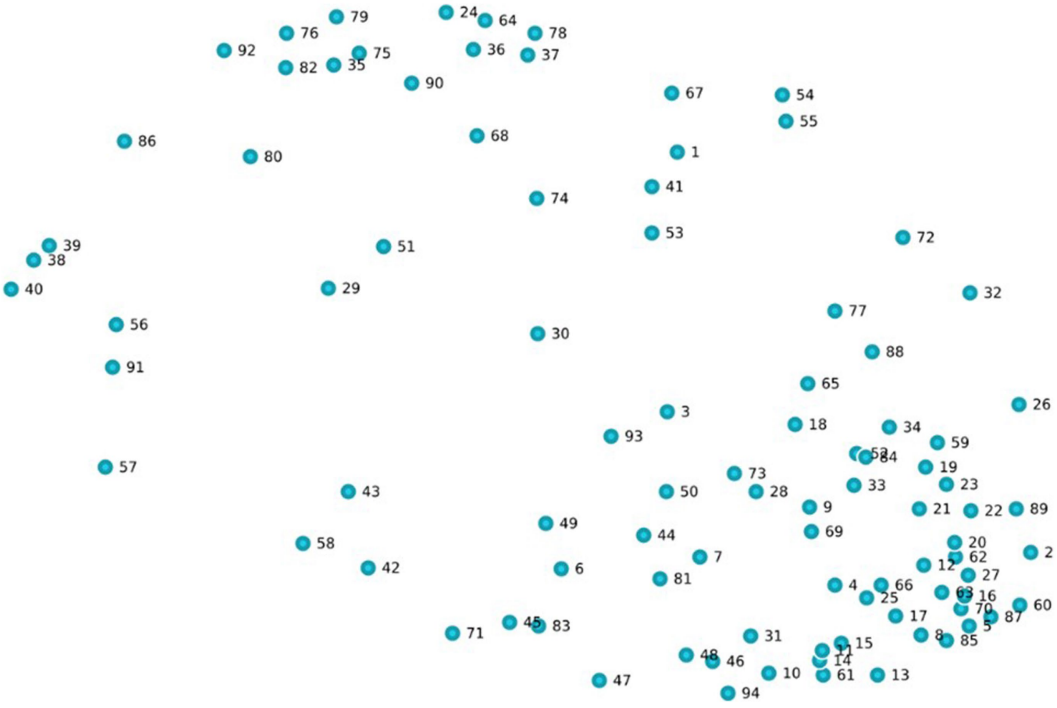


FIGURE 2
Point map of the 94 statements.

piles more often by participants and are therefore grouped together on the map, indicating a similar meaning or theme (Trochim and McLinden, 2017). The calculated stress value determined how well the visualization of the point map fits the data. Generally, stress values within the range of 0.205 to 0.365 are acceptable (Rosas and Kane, 2012). The average stress value was 0.2234 after 14 iterations, which suggests that the map is a good representation of the sorting data.

4.2. Cluster map

The point map in Figure 2 is the basis for the hierarchical cluster analysis. After considering multiple options, a six-cluster solution was selected as optimal. After the researchers investigated the cluster content, five statements were reassigned to neighboring clusters based on better conceptual fit (see Appendix A). This solution sorted the data best into interpretable and distinct clusters labeled according to leadership skills and behaviors, including improvement and results, digital technologies, cooperation, change and ambivalence, self, and others (Figure 3).

Each statement was assigned a bridging value, and the values were aggregated and averaged per cluster. When participants often sorted statements together, the mean bridging value of a cluster was low. Table 1 presents an overview of the number of statements per cluster and the average bridging value and range per cluster.

The cluster with the greatest thematic coherence was Cluster 4, which contains leadership skills and behaviors regarding the self. The cluster with the lowest thematic coherence is Cluster 3, which contains skills and behaviors regarding cooperation.

Cluster 1 contains 10 statements related to leadership skills and behaviors regarding improvement and results which are important concepts with regard to organizational success. Improvement refers to the process of making something better, results refers to the outcomes of that process. Bridging values range from 0.39 to 0.65 (M = 0.54), suggesting the cluster is thematically coherent. The cluster contained one statement that was added from theory (see Appendix A), and one statement, "lead by results," was moved from the neighboring Cluster 5 to this cluster for better conceptual fit. In addition to general behaviors and skills, such as "lead by results" and "focus on performance," this cluster contains behaviors and skills that are typical in the context of digitalization, such as "being able to support online teams," "stimulate remote working," "taking opportunities to improve work," and "evaluate digital work activities."

Cluster 2 contains 17 statements on leadership skills and behaviors regarding digital technologies. This refers to knowledge about and the ability to effectively use digital technologies to lead and manage. The bridging values ranging from 0.29 to 0.72 (M = 0.49). Like Cluster 1, the bridging values indicate reasonable thematic coherence and sorter consensus. The cluster contains statements related to working with digital technologies (e.g., "being able to structure information using digital technologies"), awareness of digital technologies' positive and negative issues (e.g., "monitoring online privacy and security"), and recognizing digital technologies' potential and value (e.g., "being aware of the possibilities of informatics and robotics").

Cluster 3 was the smallest, containing eight statements on leadership skills and behaviors regarding cooperation which refers to working together with others to achieve a common goal. Bridging values range from 0.62 to 1.00 (M = 0.86), suggesting a diverse cluster; participants sorted these statements inconsistently. Example statements include "encourage international cooperation" and "invest in external cooperation regarding surveillance in digital environments." Two statements—"stimulate internal cooperation" and "foster interpersonal communication"—were moved from neighboring Cluster 6 to this cluster for improved conceptual fit.

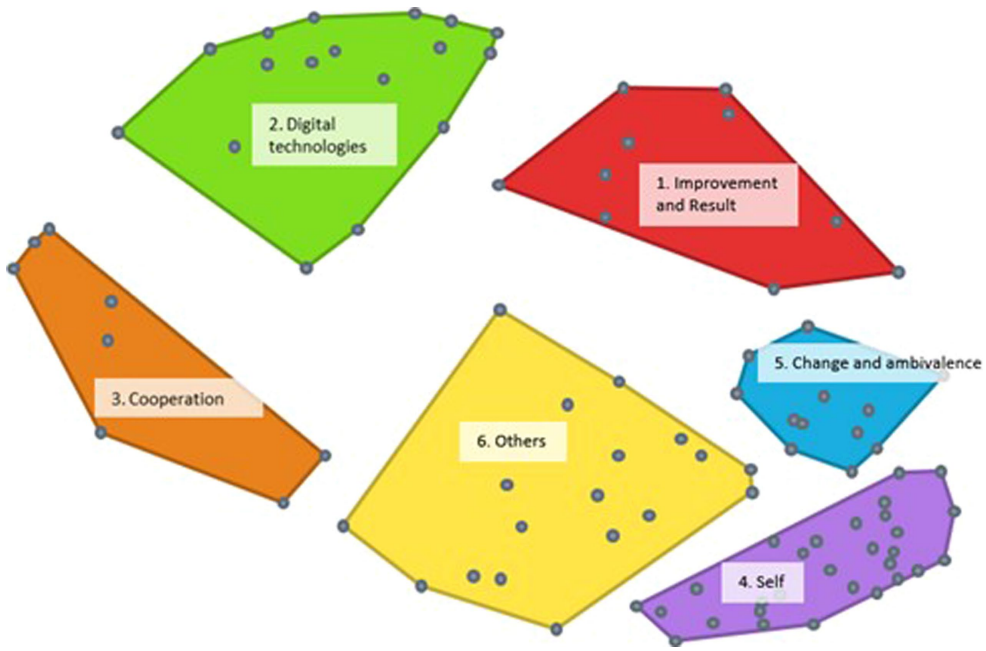


FIGURE 3
Cluster map of the 94 statements. Dots may represent multiple statements.

TABLE 1 Overview of cluster information.

No.	Cluster	Number of statements	Mean bridging value	Bridging value range
1	Improvement and results	10	0.54	0.39–0.65
2	Digital technologies	17	0.49	0.29–0.72
3	Cooperation	8	0.86	0.62–1.00
4	Self	29	0.07	0.02–0.22
5	Change and ambivalence	12	0.20	0.07–0.36
6	Others	18	0.28	0.06–0.62

Cluster 4, the largest, contains 29 statements on leadership skills and behaviors regarding the self. These statements are related to an individual leader's personal development and growth which positively affect leadership. Thirteen statements were added from theory (see Appendix A). Bridging values range from 0.02 to 0.22 (M = 0.07), suggesting a very thematically coherent cluster; participants agreed greatly regarding which leadership skills and behaviors a middle manager should possess during ongoing digitalization. Examples include "authentic," "inspiring," "dedicated," "good sense of ethics," and "open to feedback."

Cluster 5 contains 12 statements on leadership skills and behaviors regarding change and ambivalence. These are typically skills and behaviors that support effectively managing change and the uncertainty that often accompanies it and can help overcome resistance to change, build support for change, and create a positive environment for change. Four statements from theory were included (see Appendix A). Bridging values range from 0.07 to 0.36 (M = 0.20), which suggests a very coherent cluster. The skills and behaviors mentioned in the statements related to changing circumstances and innovation include "not afraid to fail," "recognize opportunities," "able to cope with resistance," and "able to make quick decisions."

Cluster 6, the second largest, includes 18 statements on leadership skills and behavior regarding others These statements center around a leader's ability to effectively interact with and influence others and build strong relationships, motivate others, and create a positive work environment. Four were added from theory (see Appendix A). Bridging values range from 0.06 to 0.62 (M = 0.28), suggesting a moderately coherent cluster. Participants grouped these skills and behaviors because they involved dealing with others; they are about supporting employees at work regarding professional and personal development, including "empowering people" and "enthusing employees," or about coping with others, including "communicating effectively" and "being sensitive to feelings."

4.3. Point rating map

The point rating map is based on the point map described in 4.1 but includes the average ratings per statement. During rating, participants rated each statement based on perceived importance in relation to the other statements using a Likert-type scale. Colored stacks in Figure 4 represent the ratings; the higher the stack, the more important the participants perceived the statement.

Table 2 reports the three skills and behaviors participants considered least and most important. The least and most important skills appear in Cluster 4, which relates to the self.

4.4. Cluster rating map

The cluster rating map is also based on participants' ratings of the statements but includes the average perceived importance ratings across all statements per cluster (Figure 5). The number of layers in a cluster indicates its perceived importance; the more layers, the more important participants perceived it.

Based on the layers, Clusters 4 and 6 were considered the most important, and Clusters 1 and 2 the least. This finding is supported by the average perceived importance ratings per cluster, reported in Table 3.

Cluster 2, which contains skills and behaviors regarding digital technologies, has the lowest mean score, and Cluster 6, which relates to others, has the highest mean score.

5. Discussion

5.1. Reflection on the outcomes

Using group concept mapping, this study identified which leadership skills and behaviors are important to middle managers in the context of ongoing digitalization. Multiple studies suggest that middle managers in larger public organizations must focus on employees by supporting them through (digital) change (e.g., Petry, 2018; Henderikx and Stoffers, 2022). Since most leadership research does not assess middle managers, this study adds to the literature by assessing conceptions of middle managers' leadership skills and behaviors in relation to digital transformation to deepen understanding of this topic and supplement extant leadership studies. In response to this gap in the literature, the objective was to identify which leadership skills and behaviors are considered necessary during ongoing digitalization, according to middle managers, the management layer that is essential to leading and supporting organizational change (Vial, 2019; Reynders et al., 2020).

The participant-driven results revealed six very to reasonably thematically coherent clusters. These clusters represent a broad array of leadership skills and behaviors primarily based on the statements generated and sorted by the participants of the study. The clusters cover leadership skills and behaviors regarding improvement and results, digital technologies, cooperation, self, change and ambivalence, and others. Subsequent ratings demonstrated that participants considered integrity, trust, and empowering people as the most important skills and behaviors. Humbleness, having knowledge of digital tools/assets/software/hardware, and investing in external

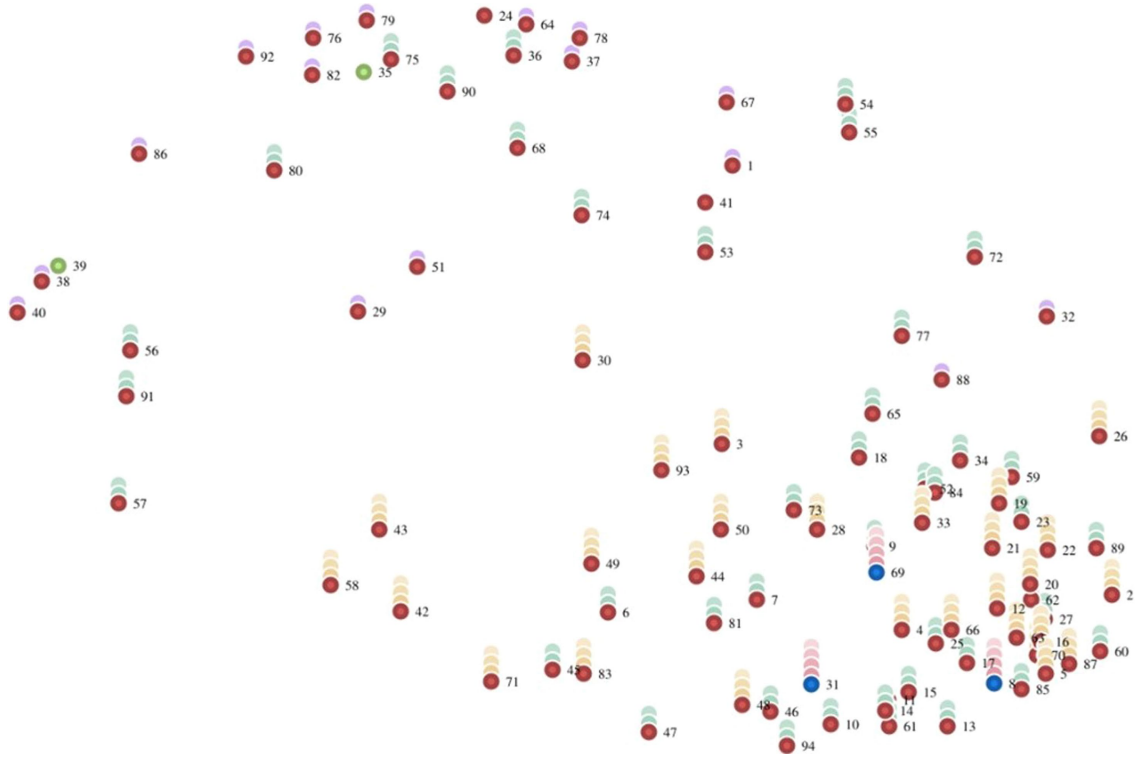


FIGURE 4
Point rating map showing the average importance of the statements. Green dots represent the lowest-rated statements (less than 3.40; #11 [not visible, behind #14], 35, 39). Blue dots represent the highest-rated statements (greater than 4.53; #8, 31, 69).

TABLE 2 Lowest- and highest-rated statements regarding perceived importance.

No.	Lowest-rated statement	Highest-rated statement	M	SD	Cluster
11	Humbleness		3.07	0.85	Self
35	Knowledge of digital tools, assets, software, and hardware		3.27	0.85	Digital technologies
39	Investing in external cooperation regarding enforcement in digital environments		3.34	0.79	Cooperation
8		Integrity	4.87	0.34	Self
31		Trust	4.60	0.49	Self
69		Empower people	4.53	0.50	Others

cooperation regarding enforcement in digital environments were considered the least important. No skill or behavior was rated unimportant (less than 3 on a 1 to 5 point Likert scale). Connecting this finding to cluster levels, the middle managers rated the clusters of self and others as most important and digital technologies and improvement and results as least important.

It is surprising that the digital technologies cluster was rated least important, considering that middle managers are commonly tasked with facilitating digitalization and leading and managing a digitally transformed organization, as noted by Klein (2020) and Reynders et al. (2020). One explanation is that participants were middle managers who worked in a large (public) organization, in which, due to its size, middle managers are typically concerned with overseeing day-to-day operations. Consequently, they often delegate duties of specific expertise to specialized departments equipped with the necessary skills to implement new digital technologies in business processes (e.g., technical; Vaccaro et al., 2012). It is, therefore, less vital for middle managers working in large organizations to acquire particularly hard skills regarding digital technologies as it enables them to concentrate on their primary responsibilities while ensuring the organization keeps pace with digital advancements. This may be why they consider such skills less important compared to other skills and behaviors. Nonetheless, middle managers still play a vital role in digital transformation, bridging technical experts and the operational staff (Giauque, 2015). They are responsible for translating the implications of digital changes into actionable steps and guiding their teams through these transitions.

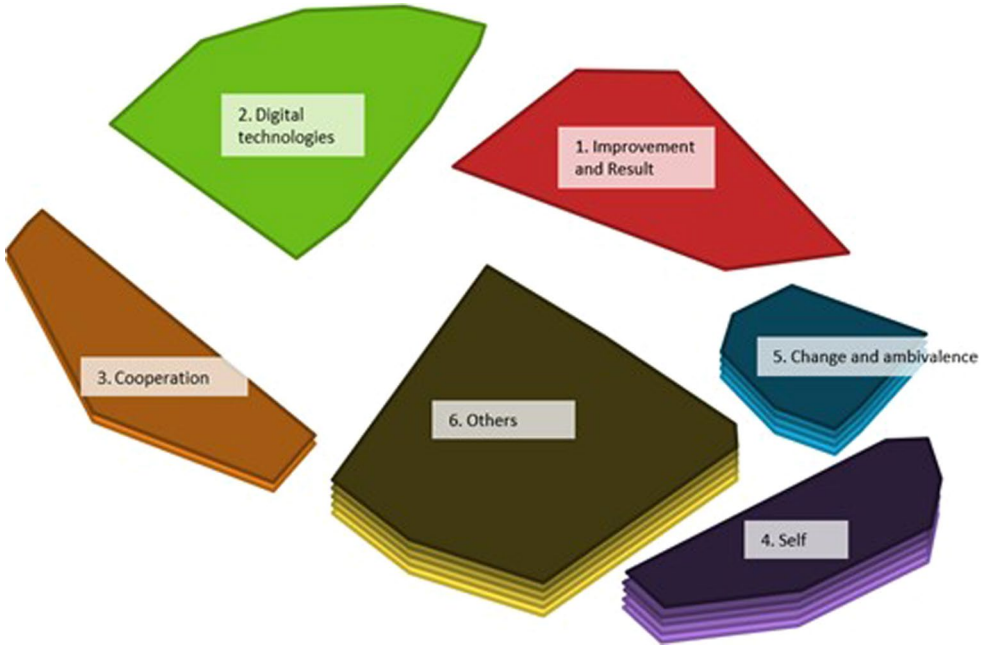


FIGURE 5
Cluster rating map showing the average importance of the clusters.

TABLE 3 Average ratings per cluster regarding importance.

No.	Cluster	Mean	SD
1	Improvement and results	3.77	0.26
2	Digital technologies	3.69	0.21
3	Cooperation	3.88	0.34
4	Self	4.14	0.32
5	Change and ambivalence	4.08	0.20
6	Others	4.24	0.18

Clusters that contained soft skills, such as interactions that enable people-oriented skills and behaviors, were considered the most important. These results align with those from Henderikx and Stoffers (2022), who argue the need for soft skills as they are inherently human and complex to replicate through technological advancements and automation. Technology does not (yet) encompass human-like emotions, values or perspectives, which are at the heart of soft skills (Badurdeen et al., 2010; Bauer et al., 2018). For example, increasingly working with digital tools and working remotely has made soft skills such as empathy and clear communication vital in fostering effective collaboration (e.g., Cortellazzo et al., 2019; Klus and Müller, 2020). Also, digital transformation often involves frequent changes, the implementation of new technologies, and shifting priorities. Soft skills like adaptability and flexibility make it possible to embrace these changes, quickly learn new tools and processes, and navigate through uncertainty (e.g., Jakubik and Berazhny, 2017). Furthermore, as organizations undergo digital transformation, strong, soft skills to inspire and motivate employees and teams are essential (e.g., Ready et al., 2020). Overall, soft people-oriented skills are essential for building effective relationships, adapting to change, fostering innovation, and leading successful digital initiatives and teams (e.g., Lista et al., 2022). Therefore, the importance of nurturing and developing these soft skills alongside technological advancements should be recognized. Overall, we can conclude that what the middle managers in this study regard as relevant leadership behavior and skills is consistent with the findings of the literature study it is built on as well as consistent with other studies in this direction, for instance, from Jakubik and Berazhny (2017), Klus and Müller (2020), and Ready et al. (2020).

Enabling middle managers to develop themselves as people-oriented, technically minded, empowering leaders who can adapt their leadership to fit with changing (digital) circumstances is therefore essential. Especially as leadership behavior, precisely behavior related to soft skills positively impacts employee well-being (e.g., Inceoglu et al., 2018; Dong and Yan, 2022), even more so with the current increase of remote working (Caniëls, 2023). The development of soft skills in middle managers can be seamlessly incorporated into daily operations through the novel use of simulations related to social issues alongside habitual practice and reinforcement in real-life scenarios. These simulations can concurrently cultivate both soft skills—emphasizing societal and human aspects—and hard skills—focusing on technical and

conceptual facets (Poisson-de Haro and Turgut, 2012). Managers should apply active listening, empathy, and effective communication during daily interactions, with simulations offering a safe environment for practice. A culture encouraging feedback and reflection can boost continuous learning (Tripathy, 2020). The necessity for such comprehensive skills development is paramount given middle managers' crucial role, as it enhances team cohesion, improves decision-making, and ultimately propels organizational success.

5.2. Practical implications

Middle managers serve as a vital bridge between strategic and operational levels, managing the translation of strategies into actions and addressing immediate operational concerns (Ekaterini, 2011). This makes them indispensable to the smooth functioning of public organizations. Moreover, competition among experienced managers, uncertain economies, failures in public organizations, and rapidly changing demographics and digitalization requires developing talented, in-house employees to become effective leaders (Gusain, 2017; Holt et al., 2018). Creating effective leadership development strategies, especially in large public organizations, requires an in-depth understanding of the internal and external challenges that organizations experience (Moldoveanu and Narayandas, 2019). We advocate an approach in which top managers' roles and attitudes align with enhancing structures and strategies essential to improving middle managers' leadership development. This is especially true since management in large public organizations is hierarchical and formal. Also, identifying leadership requirements and allocating necessary (financial) resources for development is paramount. HR departments thus must facilitate and monitor the entire process, preferably data-driven.

Generally, an effective leadership development program includes a curriculum that focuses on teamwork, collaboration, and communication skills and emphasizes each potential talent's unique personality Ideally, it should run for approximately 2 years, during which classroom and online learning should be alternated, in addition to daily practical experiences (Holt et al., 2018). A (scientifically substantiated) individual quick-scan leadership assessment tool, preferably designed as a "self-other" assessment (as a form of multi-source evaluation; Alexandru and Diana, 2015), could support such programs. This assessment tool can reinforce data-driven leadership development cycles in the organization by determining the starting point as well as monitoring individual (leadership) development progression (Vukotich, 2010). More specifically, in the context of this study, a leadership development program requires an understanding of the dynamic digital landscape and prioritization of soft skills. The program should focus on training middle managers in digital tools and technologies while enhancing their interpersonal skills for better team management. Interactive modules and experiential learning can support nurturing behaviors favorable to leading in a digital age. Using the increasing availability of online courses, social platforms, and learning tools. Both traditional education providers and new startups offer these resources. They are helping to better meet the needs of organizations, and individual learners. Moldoveanu and Narayandas (2019) provide a significant analysis of the diverse institutions operating within the realm of executive education. They posit that a new wave of competitors is surfacing as the demand escalates for executive education that is adaptable, monitorable, and demonstrably effective. Various institutions, including business schools, consultancies, corporate universities, and digital platforms, are all contending to offer skills development programs. Each of these institutions has unique strengths and limitations within this competitive landscape. Continuous evaluation and feedback are key to fine-tuning the program and ensuring its alignment with the evolving digital transformation landscape (e.g., Suksai et al., 2021). A tool like the aforementioned quick-scan leadership assessment tool could support this.

5.3. Limitations and future research

The present study primarily concentrated on digital transformation as a distinct form of radical change, explicitly emphasizing the experiences of professionals within the largest public organization in the Netherlands. These professionals were undergoing digital transformation and participating in an education program centered on leadership and intelligence. Although the sample size was limited, the stress values remained within acceptable bounds (Rosas and Kane, 2012), suggesting the results possess both validity and reliability. Nonetheless, further data collection and refinement of the conceptual framework are warranted.

A noteworthy aspect of digital transformation, which sets it apart from other organizational transformations, is the speed and scale of the change and the fact that technology is the driver of the change (Berman, 2012; Westerman et al., 2014; Raz and Barnes, 2018). These unique characteristics present middle managers with a distinct set of challenges as they must navigate the complexities of digital innovations and their implications for organizational processes, culture, and strategy (e.g., Schallmo et al., 2017; Klein, 2020). Consequently, it is essential for future research to explore the specific ways in which digital transformation differs from other types of organizational change and how these differences influence middle managers' leadership skills and behaviors.

To bolster the external validity and applicability of the findings, future investigations should incorporate cross-sectional data from organizations of diverse sizes and sectors. Such an approach would yield valuable insights into how sector-specific challenges and dynamics impact middle managers' leadership skills and behaviors during digital transformations. Moreover, researchers should examine additional demographic factors and sources of heterogeneity, including management layers, personal values, and individual personality traits, to comprehensively understand the interplay between these variables and leadership behaviors amid digital transformations. Given the aging demographic of the workforce in the Netherlands, it becomes increasingly important to concentrate on how these mature employees can enhance their digital and soft skills (Oude Mulders et al., 2020).

Future research should also consider the temporal dimension of digital transformations by employing longitudinal study designs. This approach would facilitate examining the evolution and interaction of middle managers' leadership conceptualizations over time, shedding light on the trajectories of leadership development and adaptation in response to ongoing digital transformations (Schwarzmüller et al., 2018).

Additionally, it is crucial for future studies to explore the influence of organizational culture, communication channels, and decision-making processes on the success of digital transformation initiatives, as these factors may significantly contribute to the overall efficacy of middle managers' leadership endeavors.

Lastly, future studies should investigate the role of context in shaping leadership skills and behaviors during digital transformations. By examining how various environmental factors—such as technological infrastructure, regulatory frameworks, and socio-cultural norms—affect the nature and outcomes of digital transformation efforts, researchers can elucidate the intricate interplay between leadership and digital transformation. This, in turn, would provide valuable insights for organizations navigating the disruptive changes brought about by digital transformations.

5.4. Conclusion

By using the group concept mapping method we were able to gain insight into which leadership skills and behaviors middle managers in practice consider important during ongoing digitalization. The results revealed six clusters covering an array of leadership skills and behaviors, with soft people-oriented skills being considered the most important. In combination with a growing number of—predominantly theoretical—studies on this topic, this participant-driven study, deepens our understanding of middle managers' leadership skills and behaviors in relation to digital transformation and supplements extant leadership research on radical change in general. It also highlights the need for middle managers to develop these skills for instance, via a leadership development program. An effective leadership development program should prioritize soft skills development, focusing on teamwork, collaboration, communication skills, and individual personalities but also include understanding the dynamic digital landscape.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Author contributions

MH and JS contributed to conceptualization, investigation, methodology, formal analysis, validation, and writing, including the original draft's writing, reviewing, and editing. All authors contributed to the article and approved the submitted version.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2023.1147002/full#supplementary-material

References

Alexandru, M., and Diana, M. (2015). Management skills assessment using 360 feedback-MSF360. *Procedia. Soc. Behav. Sci.* 187, 318–323. doi: 10.1016/j.sbspro.2015.03.059

Alieva, J., and Powell, D. J. (2022). The significance of employee behaviours and soft management practices to avoid digital waste during a digital transformation. *Int. J. Lean. Six Sigma*. 14. doi: 10.1108/IJLSS-07-2021-0127

Araujo, L. M., De Priadana, S., Paramarta, V., and Sunarsi, D. (2021). Digital leadership in business organizations: an overview. *Int J Educ Admin Manage Leadersh* 2, 5–16. doi: 10.51629/ijeamal.v2i1.18

Badurdeen, F., Marksberry, P., Hall, P., and Gregory, B. (2010). Teaching lean manufacturing with simulations and games: a survey and future directions. *Simul. Gaming* 41, 465–486. doi: 10.1177/1046878109334331

Bauer, H., Brandl, F., Lock, C., and Reinhart, G. (2018). Integration of industry 4.0 in lean manufacturing learning factories. *Procedia Manuf.* 23, 147–152. doi: 10.1016/j.promfg.2018.04.008

Berman, S. J. (2012). Digital transformation: opportunities to create new business models. *Strateg. Leadersh.* 40, 16–24. doi: 10.1108/10878571211209314

Boughzala, I., Garmaki, S., and Chourabi, O. (2020). Understanding how digital intelligence contributes to digital creativity and digital transformation: a systematic literature review." In: *Proceedings of the 53rd Hawaii international conference on system sciences* (pp. 320–329). Capgemini.

Caniëls, M. C. (2023). How remote working increases the importance of positive leadership for employee vigor. *Front. Psychol.* 14:557. doi: 10.3389/fpsyg.2023.1089557

Christensen, C. M., Raynor, M. E., and McDonald, R. (2015). What is disruptive innovation? *Harv. Bus. Rev.* 93, 44–53.

Cortellazzo, L., Bruni, E., and Zampieri, R. (2019). The role of leadership in a digitalized world: a review. *Front. Psychol.* 10:1938. doi: 10.3389/fpsyg.2019.01938

DeFilippis, E., Leonardi, P., Polzer, J. T., and Rahman, H. A. (2022). Emerging technologies, work relationships, and the new role of middle managers. In: *Academy of Management Proceedings* (Vol. 2022, Briarcliff Manor, NY: Academy of Management.

Dong, J., and Yan, S. (2022). A multicriteria approach for measuring employee well-being. *Front. Psychol.* 13:79596. doi: 10.3389/fpsyg.2022.79596

Ekaterini, G. (2011). A qualitative approach to middle managers' competences. *Manag. Res. Rev.* 34, 553–575. doi: 10.1108/01409171111128724

El Sawy, O. A., Kræmmergaard, P., Amsinck, H., and Vinther, A. L. (2020). "How LEGO built the foundations and enterprise capabilities for digital leadership" in *Strategic information management* (Routledge), 174–201.

Engle, R. L., Lopez, E. R., Gormley, K. E., Chan, J. A., Charns, M. P., and van Deusen Lukas, C. (2017). What roles do middle managers play in implementation of innovative practices? *Health Care Manage. Rev.* 42, 14–27. doi: 10.1097/HMR.0000000000000090

Gfrerer, A., Hutter, K., Füller, J., and Ströhle, T. (2021). Ready or not: managers' and employees' different perceptions of digital readiness. *Calif. Manage. Rev.* 63, 23–48. doi: 10.1177/0008125620977487

Giauque, D. (2015). Attitudes toward organizational change among public middle managers. *Public Pers. Manag.* 44, 70–98. doi: 10.1177/0091026014556512

Gusain, N. (2017). Talent acquisition vs development: with a focus on leadership development programs. Available at: http://digitalcommons.ilr.cornell.edu/chrr/99 (Accessed 12 June 2022).

Hagell, P., Edfors, E., Hedin, G., Westergren, A., and Hammarlund, C. S. (2016). Group concept mapping for evaluation and development in nursing education. *Nurse Ed. Pract.* 20, 147–153. doi: 10.1016/j.nepr.2016.08.006

Henderikx, M., and Stoffers, J. (2022). An exploratory literature study into digital transformation and leadership: toward future-proof middle managers. *Sustainability* 14:687. doi: 10.3390/su14020687

Holt, S., Hall, A., and Gilley, A. (2018). Essential components of leadership development programs. *J. Manag. Issues* 30, 214–229.

Huy, Q. N. (2001). In praise of middle managers. *Harv. Bus. Rev.* 79, 72–79.

Inceoglu, I., Thomas, G., Chu, C., Plans, D., and Gerbasi, A. (2018). Leadership behavior and employee well-being: an integrated review and a future research agenda. *Leadersh. Q.* 29, 179–202. doi: 10.1016/j.leaqua.2017.12.006

Jackson, K. M., and Trochim, W. M. (2002). Concept mapping as an alternative approach for the analysis of open-ended survey responses. *Organ. Res. Methods* 5, 307–336. doi: 10.1177/109442802237114

Jakubik, M., and Berazhny, I. (2017). Rethinking leadership and It' s practices in the digital era. In managing the global economy. In: *Proceedings of the Management International Conference*, Monastier di Treviso, Italy, 24–27. University of Primorska Press.

Kaivo-Oja, J., Roth, S., and Westerlund, L. (2017). Futures of robotics. Human work in digital transformation. *Int. J. Technol. Manag.* 73, 176–205. doi: 10.1504/IJTM.2017.083074

Kane, M., and Trochim, W. M. K. (2007). *Applied social research methods series. Concept mapping for planning and evaluation*. Thousand Oaks: Sage Publications.

Kieran, S., MacMahon, J., and MacCurtain, S. (2020). Strategic change and sensemaking practice: enabling the role of the middle manager. *Balt. J. Manag.* 15, 493–514. doi: 10.1108/BJM-11-2018-0395

Klein, M. (2020). Leadership characteristics in the era of digital transformation. *Bus. Manag. Stud.* 8, 883–902. doi: 10.15295/bmij.v8i1.1441

Klus, M., and Müller, J. (2020). Identifying leadership skills required in the digital age. In: *CESifo Working Paper No. 8180*. Available at: https://ssrn.com/abstract=3564861

Kurzhals, C., Graf-Vlachy, L., and König, A. (2020). Strategic leadership and technological innovation: a comprehensive review and research agenda. *Corp. Gov.* 28, 437–464. doi: 10.1111/corg.12351

Lista, A. P., Tortorella, G. L., Bouzon, M., Thürer, M., and Jurburg, D. (2022). Soft and hard skills development in lean management trainings. *Int. J. Lean Six Sigma.* 13, 1137–1158. doi: 10.1108/IJLSS-06-2021-0116

Milley, P., and Szijarto, B. (2020). Understanding social innovation leadership in universities: empirical insights from a group concept mapping study. *Eur. J. Innov. Manag.* 25, 365–389. doi: 10.1108/EJIM-07-2020-0256

Mirhosseini, S. A., Kiani Mavi, R., Kiani Mavi, N., Abbasnejad, B., and Rayani, F. (2020). Interrelations among leadership competencies of BIM leaders: a fuzzy DEMATEL-ANP approach. *Sustainability* 12:7830. doi: 10.3390/su12187830

Moldoveanu, M., and Narayandas, D. (2019). The future of leadership development. *Harv. Bus. Rev.* 97, 40–48.

Nadkarni, S., and Prügl, R. (2021). Digital transformation: a review, synthesis and opportunities for future research. *Manag. Rev. Q.* 71, 233–341. doi: 10.1007/s11301-020-00185-7

Oude Mulders, J., Henkens, K., and van Dalen, H. P. (2020). How do employers respond to an aging workforce? Evidence from surveys among employers, 2009–2017. *Curr Emerg Trends Aging Work*, 281–296. doi: 10.1007/978-3-030-24135-3_14

Oxford University Press. (2022). Soft skills. In Oxford English Dictionary. Available at: https://www.lexico.com/definition/soft_skills

Pelletier, C., and Cloutier, L. M. (2019). Conceptualising digital transformation in SMEs: an ecosystemic perspective. *J. Small Bus. Enterp. Dev.* 26, 855–876. doi: 10.1108/JSBED-05-2019-0144

Petry, T. (2018). "Digital leadership" in *Knowledge Management in Digital Change*. eds. K. North, R. Maier and O. Haas (Cham, Switzerland: Springer), 209–218.

Poisson-de Haro, S., and Turgut, G. (2012). Expanded strategy simulations: developing better managers. *J. Manag. Dev.* 31, 209–220. doi: 10.1108/02621711211208844

Raz, T., and Barnes, C. (2018). Digital disruption and organizational change: a conceptual framework. *J. Organ. Chang. Manag.* 31, 314–328. doi: 10.1007/s12599-018-0550-4

Ready, D. A., Cohen, C., Kiron, D., and Pring, B. (2020). The new leadership playbook for the digital age. Available at: https://sloanreview.mit.edu/projects/the-new-leadership-playbook-for-the-digital-age/

Reynders, P., Kumar, M., and Found, P. (2020). 'Lean on me': an integrative literature review on the middle management role in lean. *Total Qual. Manag. Bus. Excell.* 33, 318–354. doi: 10.1080/14783363.2020.1842729

Roblek, V., Meško, M., Pušavec, F., and Likar, B. (2021). The role and meaning of the digital transformation as a disruptive innovation on small and medium manufacturing enterprises. *Front. Psychol.* 12:2129. doi: 10.3389/fpsyg.2021.592528

Rosas, S. R., and Kane, M. (2012). Quality and rigor of the concept mapping methodology: a pooled study analysis. *Eval. Program Plann.* 35, 236–245. doi: 10.1016/j.evalprogplan.2011.10.003

Rosas, S. R., and Ridings, J. W. (2017). The use of concept mapping in measurement development and evaluation: application and future directions. *Eval. Program Plann.* 60, 265–276. doi: 10.1016/j.evalprogplan.2016.08.016

Schallmo, D., Williams, C. A., and Auger, P. (2017). Digital transformation of business models—best practice, enablers, and roadmap. *Int. J. Innov. Manag.* 21:1740014. doi: 10.1142/S136391961740014X

Schophuizen, M., Kreijns, K., Stoyanov, S., and Kalz, M. (2018). Eliciting the challenges and opportunities organizations face when delivering open online education: a group-concept mapping study. *Internet High. Educ.* 36, 1–12. doi: 10.1016/j.iheduc.2017.08.002

Schwarzmüller, T., Brosi, P., Duman, D., and Welpe, I. M. (2018). How does the digital transformation affect organizations? Key themes of change in work design and leadership. *Manage. Rev.* 29, 114–138. doi: 10.5771/0935-9915-2018-2-114

Stoker, J. I. (2006). Leading middle management: consequences of organisational changes for tasks and behaviours of middle managers. *J. Gen. Manag.* 32, 31–42. doi: 10.1177/030630700603200103

Suksai, T., Suanpang, P., and Thangchitcharoenkhul, R. (2021). A digital leadership development model for school administrators in basic education to fulfill the Thailand 4.0 policy. *PSAKU Int J Interdisciplin Res* 10, 11–20.

Tetik, S. (2020). "Strategic leadership in perspective of industry 4.0" in *Agile business leadership methods for industry 4.0*. ed. B. Akkaya (Bingley, UK: Emerald Publishing Limited).

Torre, T., and Sarti, D. (2020). The "way" toward e-leadership: some evidence from the field. *Front. Psychol.* 11:554253. doi: 10.3389/fpsyg.2020.554253

Tripathy, M. (2020). "Significance of soft skills in career development" in *Career Development and Job Satisfaction* ed. J. Fahed-Sreih (London, UK: IntechOpen).

Trochim, W. M. K. (1989). An introduction to concept mapping for planning and evaluation. *Eval.Program Plann.* 12, 1–16. doi: 10.1016/0149-7189(89)90016-5

Trochim, W. M., and McLinden, D. (2017). Introduction to a special issue on concept mapping. *Eval.Program Plann.* 60, 166–175. doi: 10.1016/j.evalprogplan.2016.10.006

Tsuda, K., and Sato, H. (2020). Getting things done by middle manager. *Annals Bus Admin Sci* 19, 241–251. doi: 10.7880/abas.0200901a

Vaccaro, I. G., Jansen, J. J., Van Den Bosch, F. A., and Volberda, H. W. (2012). Management innovation and leadership: the moderating role of organizational size. *J. Manag. Stud.* 49, 28–51. doi: 10.1111/j.1467-6486.2010.00976.x

Van Bon-Martens, M. J. H., Van de Goor, L. A. M., Holsappel, J. C., Kuunders, T. J. M., Jacobs-van der Bruggen, M. A. M., Te Brake, J. H. M., et al. (2014). Concept mapping as a promising method to bring practice into science. *Public Health* 128, 504–514. doi: 10.1016/j.puhe.2014.04.002

Van Doorn, S., Georgakakis, D., Oehmichen, J., and Reimer, M. (2022). Opportunity or threat? Exploring middle manager roles in the face of digital transformation. *J. Manag. Stud.* doi: 10.1111/joms.12880

Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., et al. (2021). Digital transformation: a multidisciplinary reflection and research agenda. *J. Bus. Res.* 122, 889–901. doi: 10.1016/j.jbusres.2019.09.022

Vial, G. (2019). Understanding digital transformation: a review and a research agenda. *J. Strateg. Inf. Syst.* 28, 118–144. doi: 10.1016/j.jsis.2019.01.003

Volberda, H. W., Khanagha, S., Baden-Fuller, C., Mihalache, O. R., and Birkinshaw, J. (2021). Strategizing in a digital world: overcoming cognitive barriers, reconfiguring routines and introducing new organizational forms. *Long Range Plann.* 54:102110. doi: 10.1016/j.lrp.2021.102110

Vukotich, G. (2010). The 360 process. *OD Practitioner* 42, 24–29.

Westerman, G., Bonnet, D., and McAfee, A. (2014). *Leading digital: Turning technology into business transformation*. Boston, MA: Harvard Business Press.

Wu, T., Chen, B., Shao, Y., and Lu, H. (2021). Enable digital transformation: entrepreneurial leadership, ambidextrous learning and organisational performance. *Technol. Anal. Strateg. Manag.* 33, 1389–1403. doi: 10.1080/09537325.2021.1876220

frontiers | Frontiers in Psychology

TYPE Original Research
PUBLISHED 27 September 2023
DOI 10.3389/fpsyg.2023.1149371

OPEN ACCESS

EDITED BY
Jol Stoffers,
Open University of the Netherlands, Netherlands

REVIEWED BY
Laura Trinchera,
NEOMA Business School, France
Syafrida Hafni Sahir,
Universitas Medan Area, Indonesia
Sheila Keener,
Old Dominion University, United States

*CORRESPONDENCE
Sophie Nöthel
✉ s.nothel@student.maastrichtuniversity.nl

RECEIVED 21 January 2023
ACCEPTED 12 September 2023
PUBLISHED 27 September 2023

CITATION
Nöthel S, Nübold A, Uitdewilligen S, Schepers J and Hülsheger U (2023) Development and validation of the adaptive leadership behavior scale (ALBS). *Front. Psychol.* 14:1149371. doi: 10.3389/fpsyg.2023.1149371

Development and validation of the adaptive leadership behavior scale (ALBS)

Sophie Nöthel[1]*, Annika Nübold[1], Sjir Uitdewilligen[1], Jan Schepers [2] and Ute Hülsheger [1]

[1]Faculty of Psychology and Neuroscience, Department of Work and Social Psychology, Maastricht University, Maastricht, Netherlands, [2]Faculty of Psychology and Neuroscience, Department of Methodology and Statistics, Maastricht University, Maastricht, Netherlands

Due to the rapid changes in today's business world, leaders need to, more than ever, adequately and flexibly react to new and changing demands in the workplace. An instrument that captures adaptive leadership behavior is still missing, however. This study describes the development and validation of a concise and timely new leadership instrument, the Adaptive Leadership Behavior Scale (*ALBS*). Based on a thorough literature review, we developed 27 items as an initial item pool. We tested this set of items with leaders and followers in a pilot study to assess its relevancy and comprehensibility. In Study 1, a field study with 201 employees, we explored the internal structure of the initial item pool with a Principal Component Analysis (PCA). Based on the factor loadings resulting from a second PCA, we reduced the item pool, resulting in a 15-item scale for which we then assessed convergent and divergent validity. In Study 2, a field study with 311 employees, we replicated the findings of Study 1 and assessed additional convergent and divergent validity as well as the model fit with a Confirmatory Factor Analysis (CFA). In Study 3, a multi-source field study with 155 leader-follower dyads we replicated the CFA and additionally assessed criterion-related validity. Results show that the ALBS is a concise and valid instrument for assessing adaptive leadership behavior, thereby building the grounds to extend our understanding of antecedents, mechanisms and consequences of leadership in dynamic environments.

KEYWORDS

adaptive leadership, adaptive leadership behavior scale, flexible leadership, dynamic environment, VUCA world, scale validation

Introduction

Today's business world has changed rapidly. Exponential developments with regards to technology, digitalization and globalization provide an extremely challenging mix for organizations to stay competitive (Knights and McCabe, 2015; Uhl-Bien and Arena, 2017). Volatile, uncertain, complex and often ambiguous (in short: VUCA) circumstances require organizations to make decisions with a tremendous speed and to drive innovative business models (Uhl-Bien and Arena, 2017). Particularly in times of crisis, these trends are accelerated as shown by the current COVID-19 pandemic. But also, previous crises (e.g., the financial and oil crisis, the burst of the dot-com bubble, or trade wars due to increasing

globalization) increased pressure on organizations worldwide to find ways to adapt to new situations and to stay competitive in the market.

Especially during VUCA times, leaders play a key role in organizations (Kok and Van den Heuvel, 2019). Their ability to adequately and flexibly react to new and changing demands in the workplace, known as adaptive leadership behavior, is strongly needed to ensure organizational functioning. Adaptive leadership incorporates a leader "changing behavior(s) in appropriate ways as the situation changes" (Yukl and Mahsud, 2010, p. 1). Although many scholars have acknowledged the importance of adaptive leadership behavior in the workplace (e.g., Adams et al., 2013; Corazzini et al., 2015; Hlalele et al., 2015; Preece, 2016; Mugisha and Berg, 2017), the concept still needs further refinement, tangibility and, most importantly, empirical scrutiny (Yukl and Mahsud, 2010). According to Yukl and Mahsud (2010, p. 81), "there is considerable ambiguity in the management and leadership literature about the nature of flexible leadership and how to assess it." This critique is in line with the general call for more research on concrete leadership behaviors or 'basic building blocks' in order to come to a more nuanced theorizing and more actionable points for interventions in practice (Antonakis et al., 2011; van Quaquebeke and Epitropaki, 2018). Furthermore, existing instruments on adaptive behavior are not specific to *leadership* but rather focus on adaptive behavior in a broader sense, such as adaptive performance (e.g., Kröger and Staufenbiel, 2012) or individual adaptability (e.g., the I-Adapt Ployhart and Bliese, 2006). To address this gap, the current study presents a new, concise, tangible and behavior-oriented measure of adaptive leadership, the Adaptive Leadership Behavior Scale (ALBS).

Based on a thorough literature review, we provide a concrete and specific definition of adaptive leadership and present an instrument to measure adaptive leadership behavior. The instrument acknowledges four main aspects of adaptive leadership behavior: *accurately perceiving situational demands, maintaining a toolbox of behavioral strategies, balancing opposing demands and appropriately and flexibly applying these behaviors*. With three independent data sets, we validate this newly developed questionnaire to determine its psychometric properties as well as to provide evidence for construct and criterion-related validity. The availability of a new measure for adaptive leadership is important as it builds the ground for empirical research on the role and impact of adaptive leadership in organizations as well as for developing concrete action points for leadership programs and interventions.

The current paper contributes to leadership theory and practice in three important ways. First, by presenting a tangible, behavior-oriented measure of adaptive leadership, we answer the call for more research on concrete leadership *behaviors* rather than on abstract leadership *styles* (see e.g., van Quaquebeke and Epitropaki, 2018). By developing an instrument that targets concrete adaptive leadership behaviors that are key in VUCA environments, we contribute to the theoretical advancement of adaptive leadership theory in a meaningful way. So far, most previous work on adaptive leadership behavior is only theoretical and remains rather abstract, that is, specific leader behaviors have not been fully detailed yet (e.g., Yukl and Mahsud, 2010; Uhl-Bien and Arena, 2018). By presenting a concrete and straightforward measure to study adaptive leadership behavior in the field, we build the ground for future research and theory building on adaptive leadership. Second, by defining concrete aspects of adaptive leadership behavior, we also advance adaptive leadership theory and contribute to a better understanding of its potential nature and constituting aspects. By identifying and acknowledging four main aspects of adaptive leadership and testing its nomological network, we provide a clearer picture on the conceptual make-up of adaptive leadership and its constituting elements that contribute to the overarching construct. A better understanding of how adaptive leadership manifests in concrete behaviors and is related to convergent and divergent factors helps to advance conceptual clarity on a construct that has, to date, only been vaguely defined. Finally, by presenting a new behavior-oriented instrument of adaptive leadership and providing evidence on its criterion-related validity, we provide empirical evidence on its relevance for today's workplaces. Being able to identify concrete adaptive leadership behaviors that are linked to beneficial organizational outcomes enables the creation of specific training interventions to help leaders widen their behavioral repertoire, help them to better identify the specific demands of different situations, strengthen their ability to flexibly react, and balance opposing demands in an appropriate way. In summary, this study helps organizations to make their leaders VUCA-capable (Sinar et al., 2014), thereby contributing to current and future organizational functioning in a meaningful way.

Adaptive leadership behavior then and now

Adaptive leadership has been a topic of scholarly interest for the last decade (e.g., Yukl and Mahsud, 2010; DeRue, 2011; Doyle, 2017; Uhl-Bien and Arena, 2018). When taking a look back, research has come a long way from proposing a static, deterministic and top-down view of leadership to a more dynamic, interactive and developmental view. While in the 1940s, the trait approach to leadership dominated the field, proposing a list of traits that predict effective leadership behavior, in the 1970s, interest in situational theories of leadership, such as contingency theories, were of growing interest. Examples include the LPC Contingency Model (Fiedler, 1964), Path-Goal Theory (House and Mitchell, 1974) or Situational Leadership Theory (Hersey and Blanchard, 1977). Although these theories markedly advanced the field by acknowledging the importance of the situation, they have also been criticized for proposing a single optimal solution for a leader to act within a concrete situation. Critics argued for equifinality, stating that there can be more than one leadership behavior that is effective in a specific situation (McCall, 1977). Despite their promising propositions, interest in contingency and situational theories of leadership quickly declined as empirical support was lacking (Yukl, 2010). Amongst other reasons, this was because concrete and accurate measures that were needed to prove the theories' assumptions were lacking and because many of the conducted studies relied on weak research designs (Korman and Tanofsky, 1975; Schriesheim and Kerr, 1977).

Another important aspect of adaptive leadership behavior is the acknowledgment of and reaction to different followers and their particular needs (Yukl and Mahsud, 2010). Although past leadership theories like transformational, servant or authentic leadership also acknowledge the role of followers (Yukl and Mahsud, 2010; Pant and Sinha, 2016), they have been criticized for failing "to capture the complexity of leadership processes

in modern organizations" (Yukl and Mahsud, 2010, p. 83). For example, in today's VUCA world, leadership behavior that aims to give concrete directions and convey an attractive vision of the future, as in transformational leadership, has only limited utility as it requires leaders to predict the future with a certain level of accuracy (Wanasika and Krahnke, 2018; Wong and Chan, 2018). Today's constantly changing environment does not allow for this level of accuracy and rather calls for leadership behavior that continually adapts to the given circumstances and enables employees to cope with frequently changing situations (Heifetz et al., 2009). Thus, although previous leadership styles already consider interactions between leader and follower, they do not sufficiently consider the dynamics between situations, employees, and leaders' behaviors and are therefore unsuitable for describing, understanding, and advancing leadership in a VUCA environment (Wheatley and Frieze, 2010; Uhl-Bien and Arena, 2018; Wanasika and Krahnke, 2018).

In recent years, calls for new ways of leading that capture these dynamics have increased accordingly. Although the key objectives of effective leadership remain the same, e.g., to motivate followers to reach organizational goals, several scholars argued for the need to define leadership processes differently (Yukl and Mahsud, 2010; DeRue, 2011; Uhl-Bien and Arena, 2017; Wanasika and Krahnke, 2018). The most popular theory within this approach is Complexity Leadership Theory (Uhl-Bien and Arena, 2017, 2018). The theory conceptualizes leadership as a complex, interactive, dynamic system that enables employees to work, interact and connect with each other in ways that enable innovation, learning and novelty. Despite the value of these approaches and although we draw upon their idea that leadership should be viewed as a dynamic and adaptive process that accounts for the complexity in organizations (e.g., DeRue, 2011), we question their tangibility and utility for empirical research in their current form. For example, Complexity Leadership Theory proposes that leadership emerges from synergies between individual and collective interactions in a self-organizing system (Uhl-Bien and Arena, 2018; Wanasika and Krahnke, 2018), but it stays unclear what synergies between individual and collective interactions actually look like and how we can measure them, how leadership itself emerges and how all this translates into concrete behaviors. Unsurprisingly, empirical support for these complex and rather vague theoretical assumptions is still lacking (Tourish, 2019). Without a clearly defined construct and a common approach, leadership seems to become everything and nothing (DeRue, 2011, p. 131). As also in complex systems, formal leaders are part of today's organizational structures, we explicitly only focus on concrete adaptive leadership behaviors as tangible, measurable, but yet central part of the aforementioned complex approaches. Adaptive leaders need to be able to adjust their behaviors flexibly to the situation, such as monitoring internal and external dynamics, deciding when to make strategic changes, relinquishing authority to others when required as well as being sensitive to the needs of subordinates (Yukl and Mahsud, 2010).

Building on previous models of adaptive leadership (e.g., Yukl and Mahsud, 2010), we propose that adaptive leadership behavior incorporates four main aspects: *accurately perceiving situational demands, maintaining a toolbox of behavioral strategies, balancing opposing demands and appropriately and flexibly applying these behaviors*. These four aspects are proposed to be equally relevant and necessary for adaptive leadership behavior, with some being more implicit (e.g., perceiving situational demands) but still equally relevant for adaptive leadership behavior. In the following, we describe how these four aspects collectively contribute to the holistic concept of adaptive leadership behavior.

Adaptive leaders need to be able to recognize adaptive pressures, that is, to understand situational demands (e.g., follower's needs or environmental demands) in order to adjust their behavior accordingly (Kaplan and Kaiser, 2003; Baron et al., 2018). Accurately perceiving situational demands is important in order to correctly identify the relevant situational cues, such as different needs of customers and followers, and use them as informative basis for further action. This enables leaders to anticipate what is needed in a specific situation and how to appropriately react to it (Ployhart and Bliese, 2006). Situations may entail different types of challenges, for example, technical and adaptive challenges. Technical challenges or problems can be solved by existing expertise and by using rather traditional methods and organizational processes (e.g., if a production machine stops working, you can call a technical expert to fix the problem). When faced with adaptive challenges, such as unknown or not clearly defined problems, leaders cannot simply draw on prior knowledge, but need to come up with a new approach to solve the problem (Wong and Chan, 2018). Neither of the two types of challenges is easier to solve but they need to be tackled differently. In case of adaptive challenges, the most appropriate behavior varies from situation to situation. It could range from stepping back and letting the team take the lead (e.g., in the sense of shared leadership) to directing the team when no one knows how to proceed, or to balance opposing demands simultaneously (Wong and Chan, 2018). For both types of challenges, an accurate situational assessment also helps leaders to understand what their followers or stakeholders need so that the applied behavioral strategies become successful (Yukl and Mahsud, 2010; **Figure 1**).

When leaders have assessed the demands of a specific situation, they have to decide how to react to them. For an adequate reaction, maintaining a variety of behavioral strategies from which the leader can chose is vital (Ployhart and Bliese, 2006). The broader the behavioral repertoire of leaders, the better they are able to select the best-fitting behavior to the situation at hand. Again, these behaviors can range from taking over control if needed (i.e., authoritarian leadership) to relinquishing authority to others when required (i.e., participative leadership). Other examples of behaviors could be to initiate change, to apply an active coping style when change occurs or to provide a vision on how to deal with changing requirements in the future. Thus, an adaptive leader has the option to choose from a variety of leadership behaviors and can potentially combine them in a way that it benefits the situation (Ployhart and Bliese, 2006).

Particularly in situations where the leader is confronted with opposing demands, the ability to balance those conflicting requirements is important for an appropriate behavioral reaction. In dynamic and complex environments, situations are often ambiguous and not easily solved by one clear cut solution. Instead, situational demands may seem incompatible, requiring an adaptive leader to somehow balance those opposing demands. Balancing opposing demands thus means to accept and acknowledge incompatible demands in order to react to them appropriately. An organization's long-term success increasingly depends on the capability of addressing and integrating opposing demands at the same time (Smith and Tracey, 2016). For example, leaders

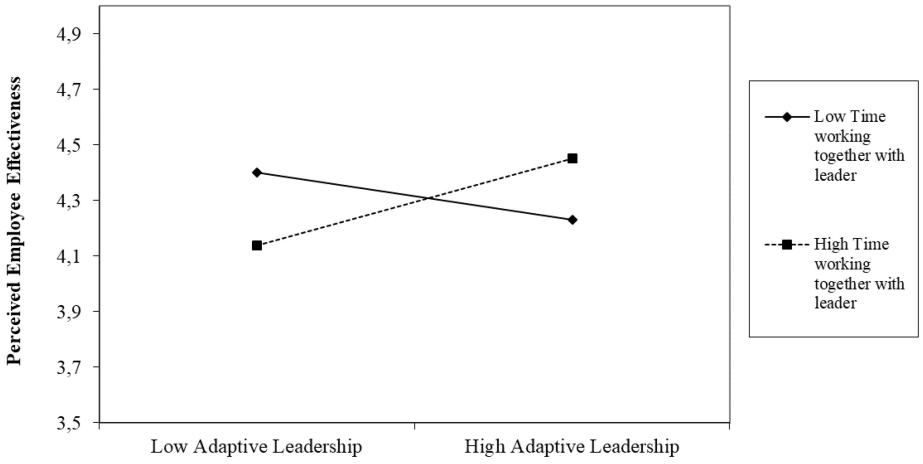


FIGURE 1
Analysis of Hypothesis 5c. Figure illustrates interaction effect of time working together and adaptive leadership on leaders' perceived employee effectiveness.

need to balance short term and long term strategies that seem conflicting but are both equally relevant for reaching long-term success (e.g., Slawinski and Bansal, 2017), such as investing in innovations while making sure that the core business stays profitable (Svahn et al., 2017). Thus, both demands are important for an organization's survival and consequently, leaders need to balance them effectively. This notion resembles the idea of paradoxical leadership behavior which is defined as "leader behaviors that are seemingly competing, yet interrelated, to meet competing workplace demands simultaneously and over time" (Zhang et al., 2015, p. 539). Previous research has evidenced that paradoxical leadership behavior is positively related to adaptive behavior (Zhang et al., 2015).

Ultimately, for adaptive leadership behavior to become successful, leaders have to apply the behaviors from their behavioral repertoire flexibly and appropriately. For this, adaptive leaders draw on all the aforementioned behaviors: accurately assessing the adaptive pressures of a situation helps leaders to understand the specific requirements of a certain situation. By maintaining a wide variety of behavioral strategies as well as by balancing opposing demands, they can select and apply the most appropriate behavior for the assessed situation which finally results in successful adaptive leadership behavior (Ployhart and Bliese, 2006; Yukl and Mahsud, 2010).

In summary, by truly understanding the situation at hand and by being able to selectively apply a broad variety of (opposing) behaviors, adaptive leaders have the necessary skills to respond in a flexible and appropriate manner (Yukl and Mahsud, 2010). By flexibly adjusting their behavior according to the situation and necessities at hand, adaptive leaders are able to orchestrate their team through volatile, uncertain, complex and ambiguous times.

Overview of studies

In this paper, we present a concise, tangible, behavior-oriented instrument of adaptive leadership. Specifically, after generating an initial pool of items, we conducted a pilot study to verify whether our items are clear, comprehensible and relevant to our target group (i.e., leaders and followers). Then, in Study 1, we conducted a cross-sectional field study with 201 followers to explore the internal structure of our item pool with an Principal Component Analysis (PCA) and assessed the construct validity (i.e., convergent and divergent validity) of our instrument. In Study 2, a cross-sectional field study with 311 followers, we first tested whether we can replicate the internal structure of the instrument with an PCA. Additionally, we extended the test of the nomological network of adaptive leadership by including additional convergent and divergent constructs and assessed model fit with a Confirmatory Factor Analysis (CFA). In Study 3, a cross-sectional multi-source field study with 155 leader-follower dyads, we again aimed to replicate the internal factor structure of our instrument with a CFA and additionally assessed its criterion-related validity.

Measure development and item generation

To generate items for the Adaptive Leadership Behavior Scale, we followed the procedure recommended by Hinkin (1998). First, we thoroughly reviewed the literature to establish a theoretically sound and comprehensive definition of adaptive leadership behaviors (Hinkin, 1998). We reviewed articles dealing with adaptive leadership or related constructs such as flexible or agile leadership (e.g., Uhl-Bien and Marion, 2009; Hannah and Avolio, 2010; Yukl and Mahsud, 2010; DeRue, 2011; Head and Alford, 2015). Items were generated deductively by deriving short and simple statements that adequately represent the construct of adaptive leadership, including the four behaviors of accurately assessing situational needs, maintaining a toolbox of behavioral strategies, balancing of opposing demands and applying these behaviors appropriately and flexibly. Based on the literature review, an initial pool of 27 items was generated to assess adaptive leadership behavior as means to effectively lead in today's VUCA world. For each of the four behaviors, we generated four to nine items. For perceiving situational demands, we developed six

items (e.g., "My supervisor quickly grasps what kind of leadership behavior is optimal for a specific situation"). We propose that leaders are aware of situational requirements, are able to "read" situations and can draw meaningful conclusions from them. For maintaining a wide variety of behavioral strategies, eight items were developed that measured the extent of a leader's behavioral repertoire and the behavioral options he/she has to react to different situations, employees or tasks. A sample item is "My supervisor possesses a wide variety of leadership behaviors he/she can selectively apply." For the third behavior that emerged from the literature review, balancing of opposing demands, we developed four items. It entails the ability to balance and integrate divers or even opposing requirements as well as the ability to take different perspectives into account. A sample item is "My supervisor is able to balance opposite types of behavior (e.g., controlling vs. empowering) in a way that is appropriate for the situation." For the appropriate and flexible application of behavior, we developed nine items. This behavior relates to the leaders' ability to flexibly change behaviors and strategies according to the situation at hand rather than applying the same leadership style to any given situation, regardless of how appropriate it is. A sample item is "My supervisor adjusts his or her leadership behaviors to the demands of the specific situation." For all four aspects of adaptive leadership, reversed-scored items were included to prevent response biases. Reversed-scored items improve scale validity by urging respondents to read the respective items more slowly and carefully before selecting a response (Józsa and Morgan, 2017). The usefulness of reversed-keyed items has been discussed controversially in the past as they can lead to method effects (Motl and Distefano, 2002). Weijters et al. (2013, p. 333) argue, however, that although method effects might occur, "it is better to be aware of them and to be able to take corrective action rather than to ignore them completely."

Pilot test

After generating the initial pool of items, we tested (a) the comprehensibility and (b) the relevance of the developed items with a relevant target group (i.e., both leaders and followers) to check whether they understood the items well and found them representative of the construct. After introducing the study's objective and definition of adaptive leadership behavior personally to the participants, they were given access to an online questionnaire featuring the initial item set. Three leaders and five followers rated the items on the two criteria on a 5-point Likert-type scale and were also asked to freely comment on the items. Two of the three leaders were male, one was female. They were between 30 and 50 years old with different levels of leadership experience. One of them had already 25 years of leadership experience, while the other two had 2–4 years of leadership experience. On average, the items were rated as very comprehensible (M = 4.0, SD = 1.4) and relevant (M = 4.5, SD = 0.9). In addition, five followers rated the questionnaire on both comprehensibility and relevance. Four of them were female, one was male and their age was between 27 and 35 years. They were in an active employment relationship for 2–5 years. On average, the items were rated as comprehensible (M = 3.8, SD = 1.4) and relevant (M = 3.8, SD = 1.3) for the described purpose. A few participants stated that some items were not easy to understand. We noticed that whenever items received slightly lower relevance ratings, these scores consistently appeared in combination with a reduced comprehensibility rating. Therefore, we decided to still include these items (partly with adjusted wording) in the validation study for empirical testing. Hence, we reworded four of the 27 items, including two reversed items, to make them more comprehensible.

Study 1

All studies were approved by the ethical committee of the authors' home university (code to be depicted after publication). In the first study, we explored the internal structure of our initial item pool with a Principal Component Analysis (PCA) and assessed convergent and divergent validity to test the nomological network of the developed instrument. To assess convergent and divergent validity, we identified other constructs that were expected to be substantially related to adaptive leadership behavior (convergent validity), and constructs that were expected not to relate to adaptive leadership (divergent validity). We only chose measures with good psychometric properties that are well established in the literature (Bühner, 2011). For testing convergent validity, we included cognitive flexibility and emotional intelligence in our survey. Cognitive flexibility includes "a person's (a) awareness that in any given situation there are options and alternatives available, (b) willingness to be flexible and adapt to the situation, and (c) self-efficacy in being flexible" (Martin and Rubin, 1995, p. 623). Previous research has already shown a positive relationship between individuals' adaptability and their cognitive flexibility (Hamtiaux and Houssemand, 2012). In line with this, we propose that cognitive flexibility and adaptive leadership behavior are positively and strongly related as acting and leading in an adaptive way is not possible without flexibility in thinking. Furthermore, emotional intelligence should show strong positive correlations with adaptive leadership behavior. Emotional intelligence is defined as "the subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (Salovey and Mayer, 1990, p. 189). It incorporates four dimensions: self-emotions appraisal (SEA), others-emotions appraisal (OEA), regulation of emotion (ROE) and use of emotion (UOE) (Law et al., 2004). We expect a conceptual overlap between the two sub-dimensions of emotional intelligence that target the appraisal and management of others' emotions (i.e., OEA and ROE) and adaptive leadership behavior because adaptive leaders need to have a high awareness of their followers' emotions to adequately react to their needs (Doyle, 2017). Without being sensitive to the emotions and needs of others, adaptive leaders will not be able to switch perspectives and use this information to adapt their behavior in an adequate way. In sum, we propose:

> *H1: Adaptive leadership behavior shows positive correlations to the convergent constructs (a) cognitive flexibility and (b) emotional intelligence.*

For divergent validity, we included rigidity in the survey. Rigidity can be regarded as a construct opposite to adaptive

leadership behavior as it is defined as "the tendency to develop and perseverate in particular cognitive or behavioral patterns, and such patterns being continuously employed in situations where the pattern is no longer effective" (Morris and Mansell, 2018, p. 3). Rigid persons are unable to deal with unstructured, unpredictable and complex situations where no clear or previously known solution can be applied. Hence, adaptation of behavior to frequently changing situations is not a behavior that rigid leaders would be able to exhibit (Steinmetz et al., 2011). Previous research has already shown that individual adaptability has a negative relationship with rigidity (Hamtiaux and Houssemand, 2012). Therefore, we expect higher levels of adaptive leadership behavior to be associated with lower levels of rigidity. In sum, this leads to the following hypothesis:

> *H2: Adaptive leadership behavior is negatively related to rigidity.*

Method

Sample and procedure

Data was collected using Prolific,[1] an online data collection platform. Recruitment via data collection services has been shown to be as representative and at least as reliable as data collection via more traditional methods such as standard internet samples (Paolacci and Chandler, 2014; Buhrmester et al., 2016). Participation requirements included being in an active employment relationship (full- or part-time), having a direct supervisor, and being fluent in English. On average, respondents needed 8 min to complete the questionnaire. As an incentive, participants received 0.99 pounds for their participation. Participation was voluntary and respondents were allowed to stop participation at any time. In total, 201 participants completed the study, 135 females and 66 males. The sample size is in line with the recommendation of Hinkin (1998) for scale development of having at least 150 respondents. Most respondents were either between 26 and 34 years (44.8%) or between 36 and 45 years old (23.4%). Half of the participants (49.3%) worked for their current supervisor for 1–3 years, 19.9% for less than a year, 13.9% for 4–6 years and 16.9% for more than 6 years.

Measures

All items in this study were formulated in English and all response scales ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). The initial pool of 27 items was administered to measure adaptive leadership behavior. To assess construct validity, we used well established scales. If needed, we slightly adapted the selected scales to the business context so that all of them focused on the supervisor's behavior. To measure cognitive flexibility, we used the 12-item Cognitive Flexibility Scale by Martin and Rubin (1995). A sample item is "I have the feeling that my supervisor is willing to work at creative solutions to problems." Cronbach's alpha was 0.89, 95% CI [0.87, 0.91] The two sub-scales of emotional intelligence others-emotions appraisal (OEA) and regulation of emotion (ROE) were assessed with the Wong and Law Emotional Intelligence Scale (WLEIS) (Wong and Law, 2002). A sample item for OEA is "My supervisor is sensitive to the feelings and emotions of others." A sample item for ROE is "My supervisor is able to control his/her temper so that he/she can handle difficulties rationally." Cronbach's Alpha for the two combined sub-scales was 0.94, 95% CI [0.92, 0.95].

To assess divergent validity, we used the 10 rigidity items of the CAT-PD-SF scale (v1.1) by Simms et al. (2011). A sample item of rigidity is "My supervisor finds it difficult to consider valid opinions that differ from his/her own." Cronbach's Alpha was 0.96, 95% CI [0.95, 0.97].

Results

To analyze the internal structure of the developed questionnaire, a Principal Component Analysis (PCA) with Oblimin Rotation was performed using SPSS version 25. The goal of a PCA is to explain the variance-covariance matrix of the observed variables by a smaller number of factors/components in order to describe and understand the relationships and underlying processes among observed variables (Tabachnick and Fidell, 2013). For our research purposes, we chose PCA in which no structure is imposed as this seemed most suitable when developing a new instrument.

First, and prior to conducting the PCA, we checked if the data was suitable for factor analysis. The correlation matrix produced many coefficients of 0.30 and above. This is a good indication that the sample is suitable for factor analysis because if correlations are too low (e.g., less than 0.30), variables are not sufficiently associated for the extraction of common factors (Tabachnick and Fidell, 2013). The Kaiser-Meyer-Olkin (KMO) value is an additional source to determine if a data set is factorable; it should be higher than the recommended value of 0.60 (Kaiser, 1970, 1974). The KMO value for this data set was 0.96 and hence factor analysis should be appropriate to extract distinct and reliable factors (Tabachnick and Fidell, 2013). Also, Bartlett's Test of Sphericity (Bartlett, 1954) supported the suitability of the data set for factor analysis by reaching statistical significance ($p < 0.001$).

In a second step, we started to extract the factors using the raw item scores as we conducted the PCA based on the correlation matrix. The aim of PCA is to use as few factors as possible to describe the variance-covariance matrix of the observed variables. To define how many factors should be extracted, a combination of Kaiser's K1 rule, scree plot and parallel analysis was used. The Kaiser's K1 rule states that only factors with an eigenvalue of 1.0 or higher are retained to represent the data set with the least number of factors necessary (Tabachnick and Fidell, 2013). The PCA revealed a dominant first eigenvalue of 15.78 and two minor secondary factors with eigenvalues slightly higher than one (1.52 and 1.04), indicating a three-factor solution. As this technique may result in the extraction of too many factors (Pallant, 2013; Wood et al., 2015), we proceeded with the two additional tests. The scree plot confirmed the dominant first eigenvalue by a clear change of slope after the first component followed by a flat curve, indicating a one-factor solution. In addition, we ran the parallel analysis by Horn (1965), testing the probability that a factor is due

1 https://www.prolific.co/

to chance (Wood et al., 2015), which led to acceptance of the first factor. As parallel analysis is one of the most accurate approaches in identifying the adequate number of factors (Zwick and Velicer, 1986; Hubbard and Allen, 1987; Bühner, 2011; Wood et al., 2015) and the scree plot also confirmed this result while the dominant eigenvalue also pointed in this direction, we decided to retain one factor. Therefore, following the recommendations by Pallant (2013), we repeated the PCA with one fixed factor only instead of random factors. This one-factor solution explained 58.44% of the variance. Due to the one-factor solution, Oblimin rotation could not be applied.

Based on the results of this second PCA with one fixed factor, we checked whether the length of the scale could be shortened to minimize response biases caused by boredom and fatigue (Schriesheim and Eisenbach, 1990), to maximize parsimony (Thurstone, 1947), and to create an economic scale. To reduce the initial 27 items, we selected items based on a combination of criteria, such as their factor loadings being equal to or over 0.80 (Yong and Pearce, 2013), their clarity and comprehensibility, and (across items) their ability to cover the content breadth of adaptive leadership behavior [each dimension is covered with one (maintaining a toolbox of behavioral strategies) to six (appropriate and flexible application) items], resulting in a selection of 15 items (see **Table 1**).

Construct validity

In line with Hypothesis 1, both convergent constructs, cognitive flexibility ($r = 0.88$, $p < 0.001$) and emotional intelligence ($r = 0.81$, $p < 0.001$), were strongly positively related to adaptive leadership behavior. Hypothesis 2 was also confirmed as rigidity was strongly negatively related to adaptive leadership behavior ($r = -0.68$, $p < 0.001$).

Taken together, the results of Study 1 revealed a clear one-factor solution of the ALBS with good psychometric properties. Strong positive relationships with convergent constructs as well as a strong negative relationship with a divergent construct indicate a high degree of construct validity. To confirm the factor structure and further test its psychometric properties and construct validity, we tested the 15-item ALBS in a second sample in Study 2.

Common method bias

As with all data coming from the same method, there is the potential for the occurrence of common method biases. This means the estimated strength of relationships among the constructs of interest might be inflated in a systematic way due to sharing the same method (i.e., a self-report survey) (Podsakoff et al., 2003). Therefore, we followed the recommendation of Podsakoff et al. (2003) to control for common method bias in a statistical way (see **Supplementary Table 2**). We used Mplus to model and control for a method factor in addition to our variables of interest. For doing this, we fitted a model with three factors. The first factor represented adaptive leadership behavior. The second factor represented a construct which does not play a role in the research question of Study 1, but was collected with the same methodology (i.e., authentic leadership). This was done to isolate the potential bias caused by the method itself rather than the content of the variables involved. Most importantly, however, the items of both constructs can be suspected to be susceptible to the same method bias. In addition, we created a third factor, the method factor, letting all items load on this factor. We allowed the two construct factors to correlate but neither of them was allowed to correlate with the method factor. Finally, we regressed the first factor, representing adaptive leadership behavior, on the convergent or divergent construct which was proposed to correlate with adaptive leadership behavior. With this approach, it is possible to remove common method bias from the relationship of interest (Podsakoff et al., 2003). The standardized model results showed that both cognitive flexibility (estimate = 0.66, $p < 0.001$) and emotional intelligence (estimate = 0.49, $p < 0.001$) as well as rigidity (estimate = −0.21, $p = 0.001$) remained significantly related to adaptive leadership behavior after controlling for common method bias.

Study 2

While the aim of Study 1 was to explore the internal structure of the initial item pool, to reduce items, as well as to assess convergent and divergent validity, the aim of Study 2 was to confirm the factor structure with a PCA and to analyze additional convergent and divergent constructs to extend the test of the nomological network. In a second step, we tested the model fit of the one-factor model structure resulting from the PCA by means of a CFA. Here, we included the final one-factor model to analyze the model fit.

In addition to cognitive flexibility and emotional intelligence, we now tested three leadership constructs that we expect to be conceptually related to adaptive leadership behavior (e.g., authentic leadership, transformational leadership and servant leadership). Authentic leadership is defined by Walumbwa et al. (2008, p. 94) as leadership behavior that uses and promotes positive psychological skills as well as a positive ethical climate. Based on that, authentic leaders promote greater *self-awareness*, an *internalized moral perspective*, a *balanced processing* of information and *relational transparency* when working with followers in order to foster positive self-development. Transformational leadership is a leadership approach where the leader aims to transform and motivate followers by providing an inspiring vision of the company and encourages employees to look beyond their individual interest in order to contribute to the greater good and mission of the organization. A transformational leader challenges individual assumptions but also acts as mentor or coach to followers (Bass, 1990). According to Bass and Avolio (1994), transformational leadership consists of the following four dimensions: *idealized influence*, *inspirational motivation*, *intellectual stimulation*, *individual consideration.* Servant leaders are characterized by putting their own interests and needs behind those of their followers in order to support them to pursue a successful career (Greenleaf, 2007). We expect the three leadership styles to be positively related to adaptive leadership behavior as they share the idea that acting in line with follower's needs is important for their development, job performance and motivation. Even though these leadership styles do not focus explicitly on adaptive leadership behavior, all of them acknowledge the importance for leaders to adapt their behavior to some extent and to consider followers' perspectives in order to lead successfully (e.g., Ilies et al., 2005; Wang et al., 2017; Williams et al., 2017). However,

10.3389/fpsyg.2023.1149371

TABLE 1 Results of Principal Component Analysis Study 1: Adaptive Leadership Behavior Scale (ALBS).

ALBS item	Component 1
Maintaining a toolbox of behavioral strategies	
1. My supervisor's leadership behavior varies in an appropriate way depending on the task.	0.51
2. My supervisor's leadership behavior varies in an appropriate way depending on the subordinate.	0.43
3. My supervisor possesses a wide variety of leadership behaviors he/she can selectively apply.	0.75
4. My supervisor is not able to use a variety of complimentary behaviors (e.g., taking control but also sharing responsibilities).	0.54
5. My supervisor is able to focus on and manage the task at hand while keeping an eye on employee's needs.	**0.81**
6. My supervisor knows how to support shared leadership, where leadership responsibility is evenly distributed among team members, whenever the situation calls for it.	0.79
Accurately perceiving situational demands	
7. My supervisor quickly grasps what kind of leadership behavior is optimal for a specific situation.	**0.81**
8. My supervisor realizes when his/her leadership style should change due to changes in the situation.	**0.82**
9. My supervisor often fails to recognize that his/her leadership behavior is not optimal for the situation at hand.	0.70
10. My supervisor does not adjust his/her leadership style if the external environment requires him/her to do so.	0.77
11. My supervisor tries to understand the needs of his/her subordinates and adjusts his/her responses in a fitting way.	**0.81**
12. My supervisor is able to continuously adjust his/her behavior to the right degree to the circumstances at hand.	**0.88**
13. My supervisor recognizes changes in task priorities and the need to modify his or her leadership behavior.	**0.83**
14. My supervisor does not recognize when shared (i.e., team leadership) instead of heroic leadership (i.e., by him/herself alone) is required.	0.63
Appropriate and flexible application	
15. My supervisor reacts to unforeseen circumstances or problems with an appropriate response.	**0.81**
16. My supervisor is not able to behave in an adaptive way when confronted with changing conditions that require a change in strategies/behaviors.	0.80
17. My supervisor adjusts his or her leadership behaviors to the demands of the specific situation	**0.84**
18. My supervisor rigidly uses one specific leadership style independent of changes in the Situation.	0.57
19. My supervisor is not able to provide direction to his/her subordinates in complex situations where no clear solutions exist.	0.75
20. My supervisor adapts his or her leadership behavior when unexpected events occur.	**0.85**
21. My supervisor is capable of adjusting his/her leadership style based on the needs of his/her subordinates.	**0.90**
22. My supervisor stays focused on the goal while remaining flexible in what leadership approaches, he/she uses to achieve the goal.	**0.86**
23. My supervisor easily switches between directive and shared leadership according to the actual situation.	**0.80**
Balancing opposing demands	
24. My supervisor is able to balance opposite types of behavior (e.g., controlling vs. empowering) in a way that is appropriate for the situation.	**0.87**
25. My supervisor is able to lead through difficulties, ambiguity and complexity.	**0.85**
26. My supervisor is able to balance various conflicting needs of different stakeholders.	**0.83**
27. My supervisor is not able to shift perspectives and view things from different angles.	0.56

N = 201. Results of Principle Component Analysis of initial 27 items. 15 retained items are marked in bold lettering.

adaptive leadership behavior also differs in that it not only includes reacting to follower's needs but also to situational demands. Only in combination, these two main aspects make adaptive leadership behavior successful. In sum, we hypothesize the following:

> H3: *Adaptive leadership behavior shows high construct validity by showing positive relations to the convergent constructs (a) authentic leadership, (b) transformational leadership and (c) servant leadership.*

To assess divergent validity, we included two leadership styles, laissez-fair leadership and directive leadership, in addition to rigidity. In laissez-fair leadership, leaders do not interact with followers, avoid making decisions, and refrain from providing followers with feedback or rewards (Antonakis et al., 2003). Followers' needs are neither recognized nor satisfied (Skogstad et al., 2007). This is not in line with adaptive leadership behavior where variability in leadership behavior and interactions between followers and leaders stand central (DeRue, 2011). Since not leading at all may, in some situations, still be adaptive, we, however do not expect a negative relationship between the two constructs, but rather a weak one. Directive leadership mainly includes that leaders use their position power to instruct their followers, give them commands and assign goals without involving

them (Pearce and Sims, 2002). Again, this behavior may in some instances be adaptive, but is, overall, not in line with adaptive leadership behavior. While directive leadership assumes that the leader always knows the right way to act and should give commands accordingly, adaptive leaders rather try to provide orientation in a complex world and are willing to step back and let the team take the lead, whenever the situation calls for it. In summary, we propose that these divergent constructs are weakly related to adaptive leadership behavior:

> H4: *Adaptive leadership behavior shows high construct validity by showing weak relations to the divergent constructs (a) laissez-fair leadership and (b) directive leadership.*

Method

Sample and procedure

For the second study, data was again collected via the online data collection platform Prolific to reach a diverse sample. The requirements to take part in the study were the same as in Study 1 (i.e., being in an active employment relationship, having a direct supervisor and being fluent in English). The average response time was 20 min. As an incentive, participants received 2.32 pounds for their participation. Participation was voluntary and respondents were allowed to stop participation at any time.

In total, 345 participants completed the questionnaire. Due to too many missing values, 34 participants were excluded from the analysis, resulting in a final sample of 311 respondents. The sample comprised 200 females and 110 males, one person did not report their gender. The majority of respondents was between 24 and 35 years old (52.7%). Many participants (42.4%) worked for their current supervisor for 1–3 years, 25.1% for less than a year, 19.6% for 4–6 years and 12.9% for more than 6 years. Participants worked in a variety of branches, such as financial and business services, healthcare, civil services, engineering and consulting or IT.

Measures

Similar to the first study, all items were in English and rated on 5-point Likert type scales. For construct validity, we again used well-established scales and adapted some items to the business context and/or to the followers' perspective. To measure authentic leadership behavior, we used the Authentic Leadership Inventory (ALI) by Neider and Schriesheim (2011). A sample item is "My supervisor shows consistency between his/her beliefs and actions." Cronbach's Alpha of this scale was 0.95 (95% CI [0.94, 0.95]). Transformational leadership was assessed the shortened form of the Multifactor Leadership Questionnaire (MLQ; Bass and Avolio, 1992) (Form 6S) to measure the four sub-dimensions of transformational leadership. A sample item is "My supervisor expresses with a few simple words what we could and should do." Cronbach's Alpha for transformational leadership was 0.95 (95% CI [0.95, 0.96]). We assessed servant leadership with the 28-item Servant Leadership Scale by Liden et al. (2015). A sample items is "My supervisor is interested in making sure that I achieve my career goals." Cronbach's Alpha was 0.97 (95% CI [0.96, 0.97]).

In Study 2, Cronbach's Alpha for rigidity was 0.96 (95% CI [0.95, 0.97]). To further assess divergent validity, we used the respective items of the MLQ Form 6S (Bass and Avolio, 1992) to assess laissez-faire leadership. A sample item of laissez-faire leadership is "Whatever others want to do is O.K. with my supervisor." Cronbach's Alpha was 0.67 (95% CI [0.60, 0.73]). To measure directive leadership, we used six items of the Leader Behavior Items created by Pearce and Sims (2002). A sample item is "My supervisor gives me instructions about how to do my work." Cronbach's Alpha for this scale was 0.87 (95% CI [0.84, 0.89]).

Results

In a first step, we conducted a PCA to analyze and confirm the factor structure of the selected 15 items based on Study 1. Results of parallel analysis, the scree plot and the initial eigenvalues (Component 1 = 10.17, Component 2 = 0.61) revealed a clear one-factor solution. The one-factor solution explained 67.80% of the variance and the scale showed high internal consistency (Cronbach's Alpha = 0.97; 95% CI [0.96, 0.97]). All 15 items loaded strongly on this factor, with factor loadings ranging from 0.78 to 0.87 (see **Table 2**). Therefore, we decided to keep all 15 items in the scale.

In a next step, we assessed the model fit of the one-factor structure resulting from the PCA with a Confirmatory Factor Analysis (CFA) using Mplus 8, Version 1.8.6 (1). As our data did not follow a normal distribution, we used the conventional robust SE estimator (MLM) as estimation technique (Lai, 2018). We used different fit indices to assess model fit, such as the chi-square test of model fit (χ^2), comparative fit index (CFI), root-mean-square error of approximation (RMSEA) and standardized root-mean-square residual (SRMR). The result of the chi-square test was χ^2 (df = 105, N = 311) = 2770.571 ($p < 0.001$), suggesting that the fit of the data to the hypothesized model is not perfect. However, the chi-square test is known as a very sensitive fit index, especially to the sample size, and therefore other fit indices are analyzed as well (Byrne, 2013). The one-factor model yielded an acceptable fit according to CFI (0.98) and SRMR (0.03) values. With a RMSEA estimate of 0.04 (95% CI [0.03, 0.06]; RMSEA p-value < 0.817), the RMSEA suggested a moderate fit. The standardized factor loadings ranged from 0.76 to 0.87 (see **Supplementary Table 1**). In summary, our results confirm an acceptable fit to the one-factor solution to the data.

Lastly, we computed and compared omega-hierarchical values for the general factor adaptive leadership (ωH = 0.97) as well as for a general factor of adaptive leadership behavior with four sub-factors relating to the four aspects of adaptive leadership behavior (ωH = 0.96). Both results further support the unidimensionality of the scale.

Construct validity

In line with Hypothesis 3, adaptive leadership behavior correlated positively with additional convergent constructs, namely authentic leadership (r = 0.84, $p < 0.001$), transformational leadership (r = 0.81, $p < 0.001$), and servant leadership (r = 0.79 $p < 0.001$). Supporting Hypothesis 4, rigidity was again strongly negatively correlated ($r = -0.66$, $p < 0.001$) to adaptive leadership. Directive leadership (r = 0.28, $p < 0.001$) and laissez-faire leadership (r = 0.29, $p < 0.001$) showed moderate correlations to adaptive leadership behavior, thus lending tentative support for Hypothesis 4.

TABLE 2 Results of Principal Component Analysis Study 2: Adaptive Leadership Behavior Scale (ALBS).

ALBS item	Component 1
1. My supervisor quickly grasps what kind of leadership behavior is optimal for a specific situation. (7)	0.81
2. My supervisor realizes when his/her leadership style should change due to changes in the situation. (8)	0.82
3. My supervisor tries to understand the needs of his/her subordinates and adjusts his/her responses in a fitting way. (11)	0.83
4. My supervisor recognizes changes in task priorities and the need to modify his or her leadership behavior. (13)	0.83
5. My supervisor is able to focus on and manage the task at hand while keeping an eye on employee's needs. (5)	0.78
6. My supervisor is able to continuously adjust his/her behavior to the right degree to the circumstances at hand. (12)	0.87
7. My supervisor is capable of adjusting his/her leadership style based on the needs of his/her subordinates. (21)	0.87
8. My supervisor is able to balance opposite types of behavior (e.g., controlling vs. empowering) in a way that is appropriate for the situation. (24)	0.82
9. My supervisor is able to lead through difficulties, ambiguity and complexity. (25)	0.85
10. My supervisor is able to balance various conflicting needs of different stakeholders. (26)	0.82
11. My supervisor reacts to unforeseen circumstances or problems with an appropriate response. (15)	0.79
12. My supervisor adjusts his or her leadership behaviors to the demands of the specific situation (17)	0.84
13. My supervisor adapts his or her leadership behavior when unexpected events occur. (20)	0.81
14. My supervisor stays focused on the goal while remaining flexible in what leadership approaches, he/she uses to achieve the goal. (22)	0.83
15. My supervisor easily switches between directive and shared leadership according to the actual situation. (23)	0.78

$N = 311$. Results of Principle Component Analysis in Study 2 confirm the one-factor solution with 15 items. Corresponding item numbers of initial 27 item scale are displayed between brackets behind respective item.

Common method bias

Similarly to Study 1, we again tested the relationship between adaptive leadership and both convergent and divergent constructs for common method effects (Podsakoff et al., 2003). The relationship of adaptive leadership with authentic leadership (estimate = 0.73, $p < 0.001$), transformational leadership (estimate = 0.68, $p < 0.001$), as well as servant leadership (estimate = 0.62, $p < 0.001$) remained significant after controlling for a method factor (i.e., by using conscientiousness as unrelated variable to the research question of Study 2 but collected with the same methodology). Also, the relationship between adaptive leadership and rigidity still showed a significant, negative relationship (estimate = −0.38, $p < 0.001$). Similarly, the relationship between adaptive leadership and directive leadership (estimate = 0.12, $p = 0.024$) or laissez-faire leadership (estimate = 0.24, $p < 0.001$) remained significant after correcting for common method bias.

Study 3

In Study 3, our goal was to confirm the model fit of the one-factor structure of the ALBS with an independent sample using CFA and additionally assess its criterion-related validity. To assess criterion-related validity, we included different outcome variables that have been used for previous scale validations in leadership research (e.g., Kalshoven et al., 2011) and/or that seemed to be relevant for adaptive leadership behavior. Thus, we included perceived leader effectiveness (follower rated), job satisfaction (follower rated), perceived employee effectiveness (leader rated) and an indicator of leader's wellbeing, irritability (leader rated), as criteria in our study.

Adaptive leaders do not only react to upcoming situational demands but also adapt to the daily needs, experiences or skill levels of their employees (Yukl and Mahsud, 2010). When employees feel that their leader understands and truly cares for their individual needs and adapts their behavior according to the situation, followers' job satisfaction and their perception of leadership effectiveness should be higher as well. Similarly, by truly understanding a follower's needs and the situation at hand, leadership behavior can be adapted more specifically to those needs and hence support the employee in the best possible way, thus, increasing employee effectiveness.

In addition to positive outcomes for followers, adaptive leadership may also benefit leaders themselves. We propose that by adjusting their leadership behavior to the demands of a specific situation, a leader's wellbeing is enhanced (e.g., is related to lower cognitive and emotional irritation). This assumption is based on fit theory that proposes that people thrive to fit the environment because they aim for a maximum consistency among the environment as well as both own and other people's behaviors (Vianen, 2018).

Summed up, we propose that adaptive leadership behavior contributes positively to followers' job satisfaction, leader and follower effectiveness and higher leader wellbeing (i.e., less irritation) by flexibly adjusting to what employees or situational demands require.

> *H5: Adaptive leadership behavior is positively related to (a) follower's job satisfaction, (b) followers' perceived leader effectiveness, (c) leaders' perceived employee effectiveness and (d) leaders' wellbeing.*

Method

Sample and procedure

Study 3 was a cross-sectional multi-source study with 155 leader-follower dyads in Germany. We recruited dyads via social

media platforms such as LinkedIn, Xing or Facebook, by directly approaching employees of multiple organizations or via personal networks. Participants did not receive any incentive besides a summary report of the overall research results. The only inclusion criteria that we applied were being in an active employment relationship, having a direct supervisor or follower as well as being fluent in German.

Overall, 245 leader-follower dyads were initially registered to take part in the study, of which 197 leaders and 218 followers filled in the survey. Participants whose partners did not complete the questionnaire or who discontinued to fill in the survey themselves were excluded from the analysis, resulting in a final sample of 155 complete dyads. The average age of leaders was 44 years (M = 44.2, SD = 11.2). On average, they were responsible for 21 employees (M = 20.7, SD = 57.6) and worked 45 h per week (M = 45.0, SD = 11.8).

On average, employees were 35 years old (M = 34.6, SD = 11.7) and worked for 15 years (M = 14.7, SD = 12.7). Many of the participants (41.3%) worked for five or more years together with their current leader (M = 5.7, SD = 6.2). The majority of participants (73.5%) stated that they worked together with their leader on a daily basis, 18.1% on a weekly basis and 8.3% saw their supervisor once a month or less.

Measures

As data collection took place in Germany, we translated the English items into German following the guidelines by Brislin (1970) if no German version of a scale was available. In that case, one bilingual person was briefly introduced to the concepts and translated the original questionnaire from English to German. Next, the German version was back-translated to English by another, independent bilingual translator. This final translation was then jointly discussed between the native speakers to reach consensus and make adjustments to the German version if necessary. The translation process was reviewed afterward to make sure that the content and meaning of the translated version remained unchanged.

All items except the one for job satisfaction were assessed on a Likert type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). To measure perceived employee effectiveness, we used two items from Kalshoven et al. (2011). The first item is "How effective is the employee in his/her daily work?" and the second item is "To what extent is the overall functioning of the employee satisfactory?" Perceived leader effectiveness was measured with four items developed by Bass and Avolio (1995) and translated by Felfe (2006). A sample item is "My supervisor ensures satisfaction through his/her leadership behavior." Job satisfaction was measured with the item "How satisfied are you with your work in general?" using a 5-point Kunin-scale (Wanous et al., 1997; Franke and Felfe, 2008). Leader's irritability was measured with the irritation scale by Mohr et al. (2007). Three items measure cognitive irritation, an indicator of job-specific stress (e.g., "Even at home I often think of my problems at work") while four items measure emotional irritation, an indicator of social stress (e.g., "I get grumpy when others approach me").

Results

Results of the CFA for the one-factor solution of the ALBS showed that the data fits the one-factor model well. Descriptive statistics and correlations are depicted in **Table 3**. For this sample, fit indices were: χ^2 (df = 105, N = 155) = 1401.303 (p < 0.001), CFI = 0.94, RMSEA = 0.07 (95% CI [0.06, 0.09], RMSEA p-value = 0.02), SRMR = 0.04. The standardized factor loadings ranged from 0.64 to 0.85 (see **Supplementary Table 2**). Most, but not all, factor loadings are comparable to those of Study 2.[2]

2 Deviations might be due to differences in sample characteristics. Compared to a more diverse, English-speaking sample in Study 2, the sample in Study 3 was more homogenous with only German-speaking participants. Thus, cultural differences might have caused the differences between factor loadings. In addition, although we followed the recommended procedure by Brislin (1970) or used already well-established scale translations from previous studies, differences in factor loadings between Study 2 and 3 could also be due to the translation issues.

TABLE 3 Descriptive statistics and correlations for variables in Study 3.

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10
1. Follower Age	34.55	11.67	(–)									
2. Follower Gender[a]	1.54	0.49	0.02	(–)								
3. Leader Age	44.23	11.16	0.42**	−0.05	(–)							
4. Leader Gender[a]	1.32	0.47	−0.10	0.30**	−0.27**	(–)						
5. Lengths of relationship (Dyad)	5.68	6.21	0.52**	0.10	0.43**	0.00	(–)					
6. Adaptive Leadership Behavior (FR)	3.80	0.68	0.03	−0.00	−0.03	0.03	−0.11	(0.95)				
7. Job Satisfaction (FR)	4.12	0.65	−0.01	−0.14†	−0.03	−0.08	−0.14	0.16*	(–)			
8. Perc. Leader Effectiveness (FR)	4.05	0.68	0.01	−0.08	−0.11	0.01	−0.18†	0.78**	0.33**	(0.84)		
9. Perc. Employee Effectiveness (LR)	4.30	0.55	−0.03	0.09	0.05	−0.02	0.02	0.08	0.10	0.14†	(0.80)	
10. Leader's Irritability (LR)	2.36	0.68	−0.02	0.02	−0.16†	0.01	0.00	−0.14†	0.06	−0.10	−0.11	(0.82)

N = 155, *p < 0.05.
**p < 0.01. † <0.10. [a]Gender: 1 = male, 2 = female, 3 = diverse; FR, Follower Rating; LR, Leader Rating.
Cronbach's coefficient alpha is displayed on the diagonal.

Criterion-related validity

Results showed that adaptive leadership behavior and follower's job satisfaction were significantly related (r = 0.16, p = 0.050), supporting Hypothesis 5a.

In addition, adaptive leadership behavior showed a high positive correlation with perceived leader effectiveness (r = 0.78, $p < 0.001$), supporting Hypothesis 5b. However, the results did not show a significant relation between adaptive leadership behavior and perceived employee effectiveness (r = 0.08, p = 0.304), thus Hypothesis 5c was not supported. Finally, adaptive leadership behavior was only marginally related to irritability (r = −0.14, p = 0.107), thus, tentatively supporting Hypothesis 5d.

Supplementary analysis

Our findings did not support Hypothesis 5c, that adaptive leadership behavior is positively related to a higher perception of employee effectiveness. However, we wanted to explore further if the length of the leader-follower working relationship impacts this relationship. We suspected that the time leaders and their followers have been working together might moderate the relationship between adaptive leadership behavior and leaders' perceived employee effectiveness. Results showed that the interaction effect between adaptive leadership behavior and length of the working relationship on perceived employee effectiveness was significant. While the relationship between adaptive leadership and leaders' perceived employee effectiveness was significant when leaders worked with their follower for a longer amount of time (B = 0.16, $p <= 0.016$), it was not significant when leaders had worked with their follower for a shorter amount of time (B = −0.09, $p <= 0.173$) (see **Figure 1**).

General discussion

Adaptive leadership is a construct that has received considerable attention in the past years. Its important role for organizational functioning in today's VUCA world is undisputed. However, the concept still needs further refinement, tangibility and empirical scrutiny (Yukl and Mahsud, 2010). Therefore, the purpose of our study was to develop a concise, behavior-oriented instrument for adaptive leadership and establish empirical support for its relevance in today's workplaces. We validated this newly developed instrument with three independent data sets in order to determine its psychometric properties as well as evidence for both construct (i.e., convergent and divergent validity) and criterion-related validity. Establishing a new measure for adaptive leadership is important as it builds the ground for further empirical research on the role and impact of adaptive leadership in organizations as well as for developing concrete action points for leadership programs and interventions.

Construct validity

Based on a thorough literature review, we defined four defining behaviors that constitute the construct of adaptive leadership. Results of all PCAs show a clear one-factor solution, hence the four behaviors do not seem to represent distinct factors but rather highly interrelated facets of the same one-dimensional construct. The fit indices of the CFA attest an acceptable fit to the data, supporting the one-factor solution.

In addition, we found positive correlations among the ALBS and proposed convergent constructs such as cognitive flexibility, emotional intelligence, authentic leadership, transformational leadership and servant leadership. Thus, the ALBS relates to constructs that share a certain conceptual overlap although being sufficiently distinct. Also, we were able to show discriminant validity as adaptive leadership behavior had negative or no significant relationships to divergent constructs such as rigidity and laissez-faire leadership and directive leadership, respectively.

After correcting for common method bias, results showed a decrease in the estimated strength of relationships between adaptive leadership and convergent as well as divergent constructs. However, for both convergent and divergent constructs, the relationships still remained significant. This suggests that the estimated strength of relationships might have been inflated to some extent, due to the common method used to assess the construct variables (i.e., by means of a self-report survey). It must be noted, however, that this likely also applies to the reported relationships for convergent/divergent constructs in other scale validation studies (in the field of leadership).

Criterion-related validity

Our results show support for criterion-related validity of the ALBS. In line with previous research, we decided to select three outcome variables that have already been used in other leadership scale development and validation papers (e.g., Brown et al., 2005; Kalshoven et al., 2011). As proposed, we found significant positive relationships between adaptive leadership behavior and perceived leadership effectiveness as well as follower's job satisfaction. Thus, the more adaptive leadership behavior is shown, the more effective do followers perceive their supervisor's leadership behavior. Also, the more adaptability the supervisor shows in their leadership behavior, the higher the followers' job satisfaction. Both outcomes as well as adaptive leadership behavior have been assessed by followers. Hence, common source bias might have affected these results (Podsakoff et al., 2003; Spector, 2019). Therefore, we also included outcome variables that were rated by the leader such as perceived employee effectiveness and leader's irritability. As results show, the effect of adaptive leadership behavior on perceived employee effectiveness was not significant. As a supplementary analysis revealed, however, when leader and follower had been working together for a longer time, adaptive leadership was significantly related to leaders' perception of their employee's effectiveness. One explanation may be that the longer leaders know their employee, the better they understand and anticipate their needs, thus, being better able to adapt accordingly. When leaders adapt their behavior to the followers' needs, employees are supported in the best possible way and, consequently, are able to perform more effectively (Meglino, 1998; De Vries and Florent-Treacy, 2002; Oh et al., 2020). Although this *post hoc* explanation could be supported in our study, future research should confirm this finding with additional samples. Finally, we extended previous research with a less common outcome variable in scale

development papers as it seemed to be a relevant outcome variable of adaptive leadership behavior in dynamic environments. Our findings tentatively supported our assumption that more adaptive leadership behavior is related to lower levels of leaders' irritability. Hence, it seems that adaptive leadership behavior has a positive effect on the wellbeing of leaders themselves. This is not surprising as work strain usually results from the interplay of personal and environmental characteristic (Huang and Simha, 2018). Once a leader acts in congruence with the needs of the environment and those of the employees, positive outcomes as well as psychological wellbeing may result (Edwards et al., 1998; Lee and Antonakis, 2014). In summary, the ALBS shows good criterion-related validity. Future research may build on these findings and test further outcome variables of adaptive leadership behavior to support its important role for organizational functioning.

Strengths, limitations and suggestions for future research

The current study has several strengths. The newly developed instrument has been developed based on an extensive literature review and was validated with three independent, diverse data sets that each had a relatively large sample size. For the whole scale development and validation process, we followed the recommended steps by Hinkin (1998) and assessed both construct as well as criterion-related validity. The factor structure and model fit was re-tested and confirmed in independent samples (Hinkin, 1998). To assess criterion-related validity, we did not only include follower ratings but also ratings from leaders themselves (e.g., relating adaptive leadership behavior rated by followers and leader's irritability rated by leaders) to reduce common source effects (Podsakoff et al., 2003).

Nevertheless, there are also limitations and recommendations for future research. Scale development is a continuous process and this paper only represents an initial step in the validation process of the ALBS. Additional research is needed to further assess the validity of the newly developed instrument within different contexts and cultures. Also, this research relies on subjective ratings of leader's or follower's rather than on objective performance measures which is a well-known limitation of survey research (Kaiser et al., 2008; Yukl, 2010). Especially in Study 1 and 2, common source effects might have inflated the results as we relied exclusively on single source ratings here. However, when making this decision, we carefully considered what would be the most suitable perspective for an accurate assessment of the observed variables in our initial studies. Since followers are the recipients of leadership behavior, it is logical that their perspective allows them to assess it best. In Study 3, we included both self- and other-ratings, to circumvent potential common source effects and investigate the criterion-related validity with different sources. Future research should use a multi-source design to extend the present study. From our perspective, it might be very interesting to see, for example, how self- and other-ratings differ in regard to adaptive leadership behavior. It might be that leaders provide more accurate or comprehensive ratings of their adaptive behavior because they are also able to rate their internal thoughts on their behavioral strategy selection. A comparison of both self- and other ratings might shed further light on this aspect.

Furthermore, the data of this study is assessed in a cross-sectional way. Cross-sectional designs do not allow any inference on causality. To account for this limitation, future research could conduct longitudinal studies to observe adaptive leadership behavior over a longer period of time. This would also allow to examine adaptive leadership behavior across changing situations which is most suitable when we consider that adaptive leadership is required in a dynamic environment (Yukl and Mahsud, 2010). As one example, future research could assess adaptive leadership in a diary study, testing whether adaptive leadership behavior fluctuates across situations. Previous leadership research emphasizes that a within-person approach is the most suitable way to research the dynamic aspects of leadership behavior (Breevaart et al., 2016). With a diary design, it is possible to analyze, for example, which circumstances allow leaders to execute adaptive leadership behavior or how fluctuations in adaptive leadership behavior influence the daily work of employees. These insights would advance our understanding for situational predictors of and contextual boundary conditions for adaptive leadership behavior and its effectiveness (Yukl and Mahsud, 2010). In addition to situational antecedents, also personal antecedents of adaptive leadership as well as potential mechanisms could be investigated in the future. As shown in our study and indicated by past research, a leader's emotional intelligence could play an important role as a personal antecedent in how well a leader is able to assess the situation and employee's needs, to react flexibly to those situational needs and to, ultimately, lead adaptively (Yukl and Mahsud, 2010).

Practical implications

The development of the ALBS has not only important implications for future research but also for practice. Gaining a deeper understand of concrete leadership behaviors that are key in VUCA environments is extremely valuable for today's organizations. The four proposed aspects of adaptive leadership behavior may guide practitioners in designing training interventions to support a leader's ability to assess the needs of the situation (i.e., environmental and employees' needs) and to flexibly select adequate leadership behaviors accordingly. With the newly developed ALBS, we offer organizations a reliable and valid instrument to examine their leaders' adaptive leadership behavior. Furthermore, the relationships of the ALBS to a variety of work outcomes emphasizes the impact that adaptive leadership can have on both leaders' and follower's performance and wellbeing. Due to the complex and fast-paced environment that the business world is facing today, the topic of adaptive leadership behavior is particularly timely and relevant for organizations.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by the Ethics Review Committee Psychology and Neuroscience (ERCPN)–Maastricht University. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

SN, AN, and SU contributed to the conception and design of the study. SN was mainly responsible for the whole manuscript including data collection, statistical analysis, and wrote the first draft of the manuscript. SN was supported by AN during the whole process. JS supported critical points in the statistical analysis. AN, SU, and UH gave regular feedback and discussed critical points. All authors contributed to manuscript revision and read and approved the submitted version.

Acknowledgments

We sincerely thank Katharina Frühhaber, Annika Kramer, Jan Niklas Beuth, and Jennifer Japs, for their help in data collection.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

Supplementary material

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2023.1149371/full#supplementary-material

References

Adams, J., Bailey, D. E. Jr., Anderson, R. A., and Galanos, A. N. (2013). Adaptive leadership: A novel approach for family decision making. *J. Palliat. Med.* 16, 326–329.

Antonakis, J., Avolio, B. J., and Sivasubramaniam, N. (2003). Context and leadership: An examination of the nine-factor full-range leadership theory using the Multifactor Leadership Questionnaire. *Leadersh. Q.* 14, 261–295. doi: 10.1016/S1048-9843(03)00030-4

Antonakis, J., Fenley, M., and Liechti, S. (2011). Can charisma be taught? Tests of two interventions. *Acad. Manag. Learn. Educ.* 10, 374–396. doi: 10.5465/amle.2010.0012

Baron, L., Rouleau, V., Grégoire, S., and Baron, C. (2018). Mindfulness and leadership flexibility. *J. Manag. Dev.* 37, 165–177. doi: 10.1108/JMD-06-2017-0213

Bartlett, M. S. (1954). A note on the multiplying factors for various χ2 approximations. *J. R. Stat. Soc. Ser. B Methodol.* 16, 296–298. doi: 10.1111/j.2517-6161.1954.tb00174.x

Bass, B. M. (1990). From transactional to transformational leadership: Learning to share the vision. *Organ. Dyn.* 18, 19–31. doi: 10.1016/0090-2616(90)90061-S

Bass, B. M., and Avolio, B. J. (1992). *Multifactor leadership questionnaire-short form 6S*. Binghamton, NY: Center for Leadership Studies.

Bass, B. M., and Avolio, B. J. (1994). Transformational leadership and organizational culture. *Int. J. Public Adm.* 17, 541–554. doi: 10.1080/01900699408524907

Bass, B., and Avolio, B. (1995). *MLQ multifactor leadership questionnaire (Form 5x–short)*. Redwood City, CA: Mind Garden. doi: 10.1037/t03624-000

Breevaart, K., Bakker, A. B., Demerouti, E., and Derks, D. (2016). Who takes the lead? A multi-source diary study on leadership, work engagement, and job performance. *J. Organ. Behav.* 37, 309–325. doi: 10.1002/job.2041

Brislin, R. W. (1970). Back-translation for cross-cultural research. *J. Cross Cult. Psychol.* 1, 185–216. doi: 10.1177/135910457000100301

Brown, M. E., Treviño, L. K., and Harrison, D. A. (2005). Ethical leadership: A social learning perspective for construct development and testing. *Organ. Behav. Hum. Decis. Process.* 97, 117–134. doi: 10.1016/j.obhdp.2005.03.002

Bühner, M. (2011). *Einführung in die test-und fragebogenkonstruktion*. Hallbergmoos: Pearson Deutschland GmbH.

Buhrmester, M., Kwang, T., and Gosling, S. D. (2016). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality data? *Perspect. Psychol. Sci.* 6, 3–5. doi: 10.1037/14805-009

Byrne, B. M. (2013). *Structural equation modeling with Mplus: Basic concepts, applications, and programming*, ed. L. Harlow, 2nd Edn. (London: Routledge/Taylor & Francis Group).

Corazzini, K., Twersky, J., White, H. K., Buhr, G. T., McConnell, E. S., Weiner, M., et al. (2015). Implementing culture change in nursing homes: An adaptive leadership framework. *Gerontol.* 55, 616–627.

De Vries, M. F. R. K., and Florent-Treacy, E. (2002). Global leadership from A to Z: Creating high commitment organizations. *Organ. Dyn.* 30, 295–309. doi: 10.1016/S0090-2616(02)00067-0

DeRue, D. S. (2011). Adaptive leadership theory: Leading and following as a complex adaptive process. *Res. Organ. Behav.* 31, 125–150. doi: 10.1016/j.riob.2011.09.007

Doyle, A. (2017). Adaptive challenges require adaptive leaders. *Perform. Improv.* 56, 18–26. doi: 10.1002/pfi.21735

Edwards, J. R., Caplan, R. D., and Van Harrison, R. (1998). Person-environment fit theory. *Theor. Organ. Stress* 28:67.

Felfe, J. (2006). Validierung einer deutschen Version des "Multifactor Leadership Questionnaire "(MLQ Form 5 x Short) von. *Z. Arbeits Organisationspsychol. A&O* 50, 61–78. doi: 10.1026/0932-4089.50.2.61

Fiedler, F. E. (1964). "A contingency model of leadership effectiveness," in *Advances in experimental social psychology*, ed. L. Berkowitz (New York, NY: Academic Press), 149–190. doi: 10.1016/S0065-2601(08)60051-9

Franke, F., and Felfe, J. (2008). Commitment und identifikation in organisationen: Ein empirischer vergleich beider konzepte. *Z. Arbeits Organisationspsychol. A&O* 52, 135–146. doi: 10.1026/0932-4089.52.3.135

Greenleaf, R. (2007). "The servant as leader," in *Corporate ethics and corporate governance*, eds W. C. Zimmerli, M. Holzinger, and K. Richter (Berlin: Springer Berlin Heidelberg), 79–85. doi: 10.1007/978-3-540-70818-6_6

Hamtiaux, A., and Houssemand, C. (2012). Adaptability, cognitive flexibility, personal need for structure, and rigidity. *Psychol. Res.* 2:563. doi: 10.17265/2159-5542/2012.10.001

Hannah, S. T., and Avolio, B. J. (2010). Ready or not: How do we accelerate the developmental readiness of leaders? *J. Organ. Behav.* 31, 1181–1187. doi: 10.1002/job.675

Head, B. W., and Alford, J. (2015). Wicked problems: Implications for public policy and management. *Adm. Soc.* 47, 711–739. doi: 10.1177/0095399713481601

Heifetz, R. A., Heifetz, R., Grashow, A., and Linsky, M. (2009). *The practice of adaptive leadership: Tools and tactics for changing your organization and the world*. Boston, MA: Harvard Business Press.

Hersey, P., and Blanchard, K. H. (1977). *The management of organizational behavior 3e*. Upper Saddle River, NJ: Prentice Hall.

Hinkin, T. R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organ. Res. Methods* 1, 104–121. doi: 10.1177/109442819800100106

Hlalele, D., Manicom, D., Preece, J., and Tsotetsi, C. T. (2015). Strategies and outcomes of involving university students in community engagement: An adaptive leadership perspective. *J. Higher Educ. Afr.* 13, 169–192.

Horn, J. L. (1965). A rationale and test for the number of factors in factor analysis. *Psychometrika* 30, 179–185. doi: 10.1007/BF02289447

House, R., and Mitchell, J. (1974). Path-goal theory of leadership. *Contemp. Bus.* 3, 81–98.

Huang, C.-S., and Simha, A. (2018). The mediating role of burnout in the relationships between perceived fit, leader–member exchange, psychological illness, and job performance. *Int. J. Stress Manag.* 25:26. doi: 10.1037/str0000077

Hubbard, R., and Allen, S. J. (1987). An empirical comparison of alternative methods for principal component extraction. *J. Bus. Res.* 15, 173–190. doi: 10.1016/0148-2963(84)90047-X

Ilies, R., Morgeson, F. P., and Nahrgang, J. D. (2005). Authentic leadership and eudaemonic well-being: Understanding leader–follower outcomes. *Leadersh. Q.* 16, 373–394. doi: 10.1016/j.leaqua.2005.03.002

Józsa, K., and Morgan, G. A. (2017). Reversed items in Likert scales: Filtering out invalid responders. *J. Psychol. Educ. Res.* 25, 7–25.

Kaiser, H. F. (1970). A second generation little jiffy. *Psychometrika* 35, 401–415. doi: 10.1007/BF02291817

Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika* 39, 31–36. doi: 10.1007/BF02291575

Kaiser, R. B., Hogan, R., and Craig, S. B. (2008). Leadership and the fate of organizations. *Am. Psychol.* 63:96. doi: 10.1037/0003-066X.63.2.96

Kalshoven, K., Den Hartog, D. N., and De Hoogh, A. H. B. (2011). Ethical leadership at work questionnaire (ELW): Development and validation of a multidimensional measure. *Leadersh. Q.* 22, 51–69. doi: 10.1016/j.leaqua.2010.12.007

Kaplan, R. E., and Kaiser, R. B. (2003). Developing versatile leadership. *MIT Sloan Manag. Rev.* 44, 19–26.

Knights, D., and McCabe, D. (2015). 'Masters of the Universe': Demystifying leadership in the context of the 2008 global financial crisis. *Br. J. Manag.* 26, 197–210. doi: 10.1111/1467-8551.12088

Kok, J., and Van den Heuvel, S. C. (2019). *Leading in a VUCA world: Integrating leadership, discernment and spirituality*. Berlin: Springer Nature. doi: 10.1007/978-3-319-98884-9

Korman, A. K., and Tanofsky, R. (1975). Statistical problems of contingency models in organizational behavior. *Acad. Manag. J.* 18, 393–397. doi: 10.2307/255543

Kröger, U., and Staufenbiel, T. (2012). Entwicklung und validierung eines fragebogens zur erfassung von "Adaptive Performance". *Z. Arbeits Organisationspsychol. A&O.* 56, 55–69. doi: 10.1026/0932-4089/a000069

Lai, K. (2018). Estimating standardized SEM parameters given nonnormal data and incorrect model: Methods and comparison. *Struct. Equ. Modeling* 25, 600–620. doi: 10.1080/10705511.2017.1392248

Law, K. S., Wong, C.-S., and Song, L. J. (2004). The construct and criterion validity of emotional intelligence and its potential utility for management studies. *J. Appl. Psychol.* 89:483. doi: 10.1037/0021-9010.89.3.483

Lee, Y.-T., and Antonakis, J. (2014). When preference is not satisfied but the individual is: How power distance moderates person–job fit. *J. Manag.* 40, 641–675. doi: 10.1177/0149206311436080

Liden, R. C., Wayne, S. J., Meuser, J. D., Hu, J., Wu, J., and Liao, C. (2015). Servant leadership: Validation of a short form of the SL-28. *Leadersh. Q.* 26, 254–269. doi: 10.1016/j.leaqua.2014.12.002

Martin, M. M., and Rubin, R. B. (1995). A new measure of cognitive flexibility. *Psychol. Rep.* 76, 623–626. doi: 10.2466/pr0.1995.76.2.623

McCall, M. W. (1977). *Leaders and leadership: Of substance and shadow*. Greensboro, NC: Center for Creative Leadership. doi: 10.35613/ccl.1977.1076

Meglino, B. R. E. (1998). Individual values in organizations: Concepts, controversies, and research. *J. Manag.* 24, 351–389. doi: 10.1016/S0149-2063(99)80065-8

Mohr, G., Rigotti, T., and Müller, A. (2007). *Irritations-Skala zur Erfassung arbeitsbezogener Beanspruchungsfolgen: IS*. Göttingen: Hogrefe.

Morris, L., and Mansell, W. (2018). A systematic review of the relationship between rigidity/flexibility and transdiagnostic cognitive and behavioral processes that maintain psychopathology. *J. Exp. Psychopathol.* 9:204380871877943. doi: 10.1177/2043808718779431

Motl, R. W., and Distefano, C. (2002). Longitudinal invariance of self-esteem and method effects associated with negatively worded items. *Struct. Equ. Modeling* 9, 562–578. doi: 10.1207/S15328007SEM0904_6

Mugisha, S., and Berg, S. V. (2017). Adaptive leadership in water utility operations: The case of Uganda. Sustain. *Water Resour. Manag.* 3, 171–179.

Neider, L. L., and Schriesheim, C. A. (2011). The authentic leadership inventory (ALI): Development and empirical tests. *Leadersh. Q.* 22, 1146–1164. doi: 10.1016/j.leaqua.2011.09.008

Oh, S. H., Shin, Y., and Kim, M. (2020). Are we in-sync? The role of employee–supervisor pacing fit in employee work outcomes. *Curr. Psychol.* 39, 793–809. doi: 10.1007/s12144-019-00258-1

Pallant, J. (2013). "Statistical techniques to explore relationships among variables," in *SPSS survival manual: A step by step guide to data analysis using IBM SPSS*, ed. Open University Press (New York, NY: McGraw-Hill Education).

Pant, G., and Sinha, S. (2016). "Developing flexible leaders flexibly," in *Managing flexibility. Flexible systems management*, eds Sushil, K. Bhal, and S. Singh (New Delhi: Springer), 85–102. doi: 10.1007/978-81-322-2380-1_8

Paolacci, G., and Chandler, J. (2014). Inside the Turk: Understanding mechanical turk as a participant pool. *Curr. Dir. Psychol. Sci.* 23, 184–188. doi: 10.1177/0963721414531598

Pearce, C. L., and Sims, H. P. Jr. (2002). Vertical versus shared leadership as predictors of the effectiveness of change management teams: An examination of aversive, directive, transactional, transformational, and empowering leader behaviors. *Group Dyn. Theory Res. Pract.* 6:172. doi: 10.1037/1089-2699.6.2.172

Ployhart, R. E., and Bliese, P. D. (2006). "Individual adaptability (I-ADAPT) theory: Conceptualizing the antecedents, consequences, and measurement of individual differences in adaptability," in *Understanding adaptability: A prerequisite for effective performance within complex environments*, eds S. Burke, L. Pierce, and E. Salas (Bingley: Emerald Group Publishing Limited). doi: 10.1016/S1479-3601(05)06001-7

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., and Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *J. Appl. Psychol.* 88:879. doi: 10.1037/0021-9010.88.5.879

Preece, J. (2016). Negotiating service learning through community engagement: Adaptive leadership, knowledge, dialogue and power. *Educ. Change* 20, 1–22.

Salovey, P., and Mayer, J. D. (1990). Emotional intelligence. *Imagin. Cogn. Pers.* 9, 185–211. doi: 10.2190/DUGG-P24E-52WK-6CDG

Schriesheim, C. A., and Kerr, S. (1977). "Theories and measures of leadership: A critical appraisal of current and future directions," in *Leadership: The cutting edge*, eds J. Hunt and L. Larsen (Carbondale, IL: Southern Illinois University Press), 9–45.

Schriesheim, C., and Eisenbach, R. (1990). "Item wording effects on exploratory factor-analytic results: An experimental investigation," in *Proceedings of the 1990 Southern Management Association annual meetings*, Washington, DC. 396–398.

Simms, L. J., Goldberg, L. R., Roberts, J. E., Watson, D., Welte, J., and Rotterman, J. H. (2011). Computerized adaptive assessment of personality disorder: Introducing the CAT–PD project. *J. Pers. Assess.* 93, 380–389. doi: 10.1080/00223891.2011.577475

Sinar, E., Wellins, R., Ray, R., Abel, A., and Neal, S. (2014). Ready-now leaders: Meeting tomorrows business challenges. *Glob. Leadersh. Forecast* 2014, 1–56.

Skogstad, A., Einarsen, S., Torsheim, T., Aasland, M. S., and Hetland, H. (2007). The destructiveness of laissez-faire leadership behavior. *J. Occup. Health Psychol.* 12:80. doi: 10.1037/1076-8998.12.1.80

Slawinski, N., and Bansal, P. (2017). "The paradoxes of time in organizations," in *The Oxford handbook of organizational paradox*, eds W. K. Smith, M. W. Lewis, P. Jarzabkowski, and A. A. Langley (Oxford: Oxford University Press), 373–392. doi: 10.1093/oxfordhb/9780198754428.013.19

Smith, W. K., and Tracey, P. (2016). Institutional complexity and paradox theory: Complementarities of competing demands. *Strateg. Organ.* 14, 455–466. doi: 10.1177/1476127016638565

Spector, P. E. (2019). Do not cross me: Optimizing the use of cross-sectional designs. *J. Bus. Psychol.* 34, 125–137. doi: 10.1007/s10869-018-09613-8

Steinmetz, J.-P., Loare, E., and Houssemand, C. (2011). Rigidity of attitudes and behaviors: A study on the validity of the concept. *Individ. Dif. Res.* 9, 84–106.

Svahn, F., Mathiassen, L., Lindgren, R., and Kane, G. C. (2017). Mastering the digital innovation challenge. *MIT Sloan Manag. Rev.* 58:14. doi: 10.7551/mitpress/11633.003.0017

Tabachnick, B. G., and Fidell, L. S. (2013). *Using multivariate statistics: International edition*. Boston, MA: Pearson.

Thurstone, L. L. (1947). *Multiple-factor analysis; a development and expansion of the vectors of mind*. Chicago, IL: University of Chicago Press.

Tourish, D. (2019). Is complexity leadership theory complex enough? A critical appraisal, some modifications and suggestions for further research. *Organ. Stud.* 40, 219–238. doi: 10.1177/0170840618789207

Uhl-Bien, M., and Arena, M. (2017). Complexity leadership. *Organ. Dyn.* 46, 9–20. doi: 10.1016/j.orgdyn.2016.12.001

Uhl-Bien, M., and Arena, M. (2018). Leadership for organizational adaptability: A theoretical synthesis and integrative framework. *Leadersh. Q.* 29, 89–104. doi: 10.1016/j.leaqua.2017.12.009

Uhl-Bien, M., and Marion, R. (2009). Complexity leadership in bureaucratic forms of organizing: A meso model. *Leadersh. Q.* 20, 631–650. doi: 10.1016/j.leaqua.2009.04.007

van Quaquebeke, N., and Epitropaki, O. (2018). "What leaders actually do," in *Paper presented at the 3rd interdisciplinary perspectives on leadership symposium*, Crete.

Vianen, A. E. M. V. (2018). Person–environment fit: A review of its basic tenets. *Annu. Rev. Organ. Psychol. Organ. Behav.* 5, 75–101. doi: 10.1146/annurev-orgpsych-032117-104702

Walumbwa, F. O., Avolio, B. J., Gardner, W. L., Wernsing, T. S., and Peterson, S. J. (2008). Authentic leadership: Development and validation of a theory-based measure. *J. Manag.* 34, 89–126. doi: 10.1177/0149206307308913

Wanasika, I., and Krahnke, K. (2018). "Reexamining transformational leadership in complex systems," in *Engaged leadership. Management for professionals*, eds J. Marques and S. Dhiman (Cham: Springer). doi: 10.1007/978-3-319-72221-4_11

Wang, H.-J., Demerouti, E., and Le Blanc, P. (2017). Transformational leadership, adaptability, and job crafting: The moderating role of organizational identification. *J. Vocat. Behav.* 100, 185–195. doi: 10.1016/j.jvb.2017.03.009

Wanous, J. P., Reichers, A. E., and Hudy, M. J. (1997). Overall job satisfaction: How good are single-item measures? *J. Appl. Psychol.* 82:247. doi: 10.1037/0021-9010.82.2.247

Weijters, B., Baumgartner, H., and Schillewaert, N. (2013). Reversed item bias: An integrative model. *Psychol. Methods* 18:320. doi: 10.1037/a0032121

Wheatley, M., and Frieze, D. (2010). Führung im zeitalter der komplexität: Vom helden zum gastgeber. Resurgence Magazine. Spokane, WA: Berkana Institute.

Williams, W. A., Brandon, R.-S., Hayek, M., Haden, S. P., and Atinc, G. (2017). Servant leadership and followership creativity. *Leadersh. Organ. Dev. J.* 38, 178–193. doi: 10.1108/LODJ-02-2015-0019

Wong, C., and Law, K. S. (2002). The effects of leader and follower emotional intelligence on performance and attitude: An exploratory study. *Leadersh. Q.* 13, 243–274. doi: 10.1016/S1048-9843(02)00099-1

Wong, G. K. W., and Chan, D. L. (2018). Adaptive leadership in academic libraries. *Libr. Manag.* 39, 106–115. doi: 10.1108/LM-06-2017-0060

Wood, N. D., Akloubou Gnonhosou, D. C., and Bowling, J. W. (2015). Combining parallel and exploratory factor analysis in identifying relationship scales in secondary data. *Marriage Fam. Rev.* 51, 385–395. doi: 10.1080/01494929.2015.1059785

Yong, A. G., and Pearce, S. (2013). A beginner's guide to factor analysis: Focusing on exploratory factor analysis. *Tutor. Quant. Methods Psychol.* 9, 79–94. doi: 10.20982/tqmp.09.2.p079

Yukl, G. (2010). *Leadership in organizations*. Upper Saddler River, NJ: Person.

Yukl, G., and Mahsud, R. (2010). Why flexible and adaptive leadership is essential. *Consult. Psychol. J. Pract. Res.* 62:81. doi: 10.1037/a0019835

Zhang, Y., Waldman, D. A., Han, Y.-L., and Li, X.-B. (2015). Paradoxical leader behaviors in people management: Antecedents and consequences. *Acad. Manag. J.* 58, 538–566. doi: 10.5465/amj.2012.0995

Zwick, W. R., and Velicer, W. F. (1986). Comparison of five rules for determining the number of components to retain. *Psychol. Bull.* 99:432. doi: 10.1037/0033-2909.99.3.432

frontiers | Frontiers in Psychology

TYPE Original Research
PUBLISHED 24 November 2023
DOI 10.3389/fpsyg.2023.1148822

OPEN ACCESS

EDITED BY
Steven Van Den Heuvel,
Evangelical Theological Faculty, Belgium

REVIEWED BY
Muhammad Haroon Shoukat,
COMSATS University Islamabad, Pakistan
Francisco Manuel Morales Rodríguez,
University of Granada, Spain

*CORRESPONDENCE
Dave Stynen
✉ dave.stynen@ou.nl

RECEIVED 20 January 2023
ACCEPTED 31 October 2023
PUBLISHED 24 November 2023

CITATION
Stynen D and Semeijn J (2023) Paradoxical leadership and well-being in turbulent times: a time-lagged study.
Front. Psychol. 14:1148822.
doi: 10.3389/fpsyg.2023.1148822

Paradoxical leadership and well-being in turbulent times: a time-lagged study

Dave Stynen[1,2]* and Judith Semeijn[1,3]

[1]Department of Organization, Faculty of Management, Open Universiteit, Heerlen, Netherlands, [2]Department of Epidemiology, Faculty of Health, Medicine and Life Sciences, Maastricht University, Maastricht, Netherlands, [3]Research Centre for Education and the Labour Market, School of Business and Economics, Maastricht University, Maastricht, Netherlands

Introduction: Paradoxical leadership has recently been put forward as an approach to leadership that may transcend the inherent contradictions in contemporary organizational and personnel management. Empirical research on its potential role for bolstering employee well-being remains scarce. This study investigated whether paradoxical leadership positively impacts employee well-being, which is operationalized as employees' job, career and life satisfaction. We rely on sense-making theory to investigate whether such effects are mediated by the mitigation of employee job insecurity perceptions.

Methods: Convenience sampling techniques were used to collect longitudinal survey data between March and September 2021. In total 287 workers provided usable data. Their ages ranged from 18 to 67 years and were active in various organizations in the Netherlands. Validated measures were used to assess paradoxical leadership, job insecurity, job, career, and life satisfaction. A time-lagged path analysis in Mplus 7.0 was conducted to investigate relationships.

Results: The results suggest that paradoxical leadership is positively related to job, career and life satisfaction over time. The relationships between paradoxical leadership and job and career satisfaction are partially mediated by the mitigation of perceived job insecurity.

Discussion: Paradoxical leadership plays a role in fostering worker well-being in these turbulent times. Paradoxical leaders may also help their followers to reframe and better deal with challenging working conditions. Despite the longitudinal data design, an additional data-wave would allow for more stringent testing of the proposed mediation effect, and due to convenience sampling generalization of findings is limited.

KEYWORDS

career satisfaction, life satisfaction, job insecurity, paradoxical leadership, sense-making theory, well-being

1 Introduction

In a recent report of the World Health Organization [WHO] and International Labour Organization [ILO] (2022) work is more than ever regarded as both an opportunity and a risk for worker health and well-being. The risks have been amplified over the last decade as macro-economic developments, like technological disruptions, population aging, and the globalization of production and service chains led to important changes in the working environment (e.g., introduction of artificial intelligence, restructuring, flexibilization of labor) and thereby to increased pressure and stress and uncertainty as well (Kalleberg, 2011; Di Fabio, 2017; Engbersen et al., 2020; Yam et al., 2023). More recently, global crises like COVID-19 further impacted employment and career prospects in various sectors as well as the well-being of workers and their families in a negative way (Handwerker et al., 2020; Gaspar et al., 2021). Hence, more action is needed to foster worker well-being as their well-being is also intertwined with the well-being of their communities, and efforts could therefore aid the realization of SDG-3 (Good health and well-being) (International Labour Organization [ILO], 2022; World Health Organization [WHO] and International Labour Organization [ILO], 2022; Nilsen and Kongsvik, 2023).

Fostering employee well-being is hence an increasing concern in today's organizational practice (Huettermann and Bruch, 2019). A key facet of well-being at work is job satisfaction, or the positive emotional state resulting from an employees' job appraisal and may encompass facets like job conditions, job content and social relationships (Locke, 1976; Spector, 1997). Abundant research has investigated how organizations can provide work opportunities that facilitate employee well-being through human resource management (HRM) and leadership practices (Den Hartog et al., 2013; Inceoglu et al., 2018; Das and Pattanayak, 2023). However, these insights (and related practices) may not fully address the inherent *paradoxical tensions* (e.g., efficiency vs. innovation, long term vs. short term, task vs. people oriented) that characterizes these turbulent times and therefore run the risk of falling short. One of the key concerns to date for personnel management is how to reconcile, in HRM practices and leadership, the foci on employee well-being and organizational performance (Salas-Vallina et al., 2021).

The role of leaders is considered vital in supporting workers exposed to challenging and stressful work environments in order to maintain employee well-being (Harms et al., 2017; Inceoglu et al., 2018). In the leadership literature *paradoxical leadership* has recently been put forward as an approach that may transcend the inherent contradictions in contemporary organizational and personnel management (Zhang et al., 2015, 2021, 2022). It is grounded in Eastern philosophy on handling paradoxes, which can embrace, integrate and transcend opposites. Western approaches to handling of paradoxes is merely analytical and considers opposites as separate parts, instead of considering them as a whole. According to Zhang et al. (2015) paradoxical leadership invites us to capture paradoxes from an Eastern perspective that encompasses a set of behaviors that may appear to be contradictory, yet interrelated. These can, when applied over a longer time window, meet the competing demands of modern workplaces. Paradoxical leadership has been linked in a positive way to several different facets of favorable employee behavior including (innovative) employee performance (Li et al., 2018), voice behavior (Li et al., 2020; Xue et al., 2020; Shehata et al., 2023), creativity (Zhang et al., 2022) and organizational citizenship behavior (Li et al., 2018, 2020; Xue et al., 2020; Meng et al., 2021; Zhang et al., 2021; Liu and Pak, 2023; Shehata et al., 2023). In contrast to employee behavior as an outcome, fewer studies have looked at employee well-being. Recent studies have uncovered positive linkages with work engagement (Fürstenberg et al., 2021; Shehata et al., 2023) and psychological well-being (Li et al., 2022). In particular the relationship between paradoxical leadership and job satisfaction has barely been studied empirically. Only one study reported a positive relationship in the public sector (Backhaus et al., 2022). This study's objective is first of all to further close this gap by empirically exploring the relationship between paradoxical leadership and an overlooked aspect of employee well-being, i.e., job satisfaction. In addition, we want to extend research on paradoxical leadership and employee wellbeing as an outcome by investigating to what extent paradoxical leadership may also spill over to well-being beyond one's current job, in terms of career and life satisfaction. These days work and non-work domains are permeable and careers more boundaryless (Guan et al., 2019; McDaniel et al., 2021). Therefore, career satisfaction – or the accumulated evaluation of one's career so far- and life satisfaction, or the overall appraisal of one's life (Diener et al., 1985; Hagmaier et al., 2018) are studied as outcomes in addition to job satisfaction. Thus far, these relationships have not been studied empirically. Hence, our second research objective is to extend research on paradoxical leadership to well-being beyond one's job.

The third objective of this study is to enhance our understanding of the explanatory mechanisms that underly the relationship between paradoxical leadership and well-being. This has been called upon by scholars like Fürstenberg et al. (2021). We build and extend Fürstenberg et al. (2021) and Zhang et al. (2021)'s recent theorizing regarding the effects of paradoxical leadership by relying on sense-making theory (Weick, 1995) and the Job Demands-Resources Model (JD-R, Demerouti et al., 2001). It has been proposed that paradoxical leaders, through consciously combining opposing behaviors, may nurture the experienced resourcefulness of the working environment, like enhancing employee autonomy and goal clarity (Fürstenberg et al., 2021). The way paradoxical leaders can alter the working environment is through stimulating sense-making among followers. In the face of an increasingly challenging working environment, paradoxical leaders can sense and shape both the productive opportunities or job resources and redefine the threats or job demands in a more malleable way (Zhang et al., 2021). Thus far others have empirically demonstrated that paradoxical leadership positively contributes to the experienced job resources. We propose that paradoxical leaders may also mitigate experienced job demands. The underlying tenet is that through their behavior leaders may shape followers' demanding job conditions, as established in earlier research (e.g., Tuckey et al., 2012). The job demand we put forward in this study is job insecurity, or the perceived threats to the job itself (Greenhalgh and Rosenblatt, 1984). Job insecurity is an established work stressor (Langerak et al., 2022) with negative consequences for employee satisfaction which includes job satisfaction, career satisfaction and life satisfaction (Otto et al., 2011; Alarco et al., 2012; Jiang and Lavaysse, 2018). Research has indicated that this stressor is linked

to economic turmoil in the labor market (e.g., unemployment rates) as well as organizational changes (e.g., downsizing) (Shoss, 2017). Uncertainty regarding one's role in the organization is inherent to paradoxes (Maitlis and Sonenshein, 2010) and triggers sense-making processes in workers (Zhang et al., 2021). Hence, this study investigates whether paradoxical leadership may mitigate perceptions of job insecurity, and thereby can protect employee well-being.

In sum, this study contributes in several ways to the literature. First, it investigates how a timely leadership style like paradoxical leadership may contribute to employee job satisfaction (Backhaus et al., 2022) and spill over to well-being beyond one's job (career satisfaction and life satisfaction). Second, by investigating the mediating role of job insecurity, we contribute to theorizing on the effects of leadership styles on employee well-being (Inceoglu et al., 2018). Specifically, we elaborate on how leaders may shape their followers' perceived job demands by making use of sense-making theory (Weick, 1995) in addition to the Job Demands-Resources Model (JD-R, Demerouti et al., 2001). Finally, we also add to the literature on the determinants of job insecurity, wherein the role of leadership as an interpersonal factor has barely been studied in comparison to personal, macro-economic and organizational factors (Shoss, 2017). These relations are studied by means of an online time-lagged survey among Dutch employees.

2 Theory and hypotheses

2.1 Paradoxical leadership

Leadership has been defined in several ways. Common ground can be found regarding "*an emphasis on the social influence process it involves, whereby leaders facilitate individual and collective efforts to accomplish common goals*" (Oreg and Berson, 2019, p. 273). Typically, leadership literature has mainly been concerned with employee and organizational performance (Inceoglu et al., 2018), with some portraying it as one of the most important contributing factors (e.g., Zaccaro et al., 2001). What constitutes leadership has been sought in both leader's personal characteristics (e.g., personality, demographic variables) and leadership behaviors, which are more stable leadership styles that exceed specific situations (Oreg and Berson, 2019). Over the last decades several leadership styles have been identified ranging from more task-oriented (e.g., transactional leadership), relational-oriented (e.g., participative leadership, servant leadership), change-oriented (e.g., charismatic and transformational leadership) and passive leadership (e.g., laissez-faire leadership) (Derue et al., 2011; Yukl, 2012; Inceoglu et al., 2018).

Paradoxical leadership is a constructive leadership style that transcends these seemingly contradictory aforementioned behavioral orientations and fits with managing the paradoxical issues that organizations are facing in globalized markets where digitization and innovative technology are developing at a rapid pace (Zhang et al., 2015). A paradoxical organizational problem consists of contradictory but interrelated elements that are presented simultaneously and for a long time (Smith and Lewis, 2011). They operate between opposing elements that "*seem logical individually but inconsistent and even absurd when juxtaposed*" (Smith and Lewis, 2011, p. 382). Yet, these opposing elements are highly interdependent, because they are bounded simultaneously to the opposing poles (Smith and Lewis, 2011). Therefore, separation is unfruitful, and the opposing elements in paradoxical tensions should be addressed simultaneously to sustain organizational performance over the long term (Lewis, 2000; Smith and Lewis, 2011; Hahn and Knight, 2021). Prototypical examples are the tension between profitability and responsibility, long term versus short term, control versus freedom, differentiation versus integration (Clegg et al., 2002; Bloodgood and Chae, 2010). Also, the day-to-day people management is beset with paradoxical tensions and paradoxical leadership, which encompasses a set of behaviors that may appear to be contradictory, and is likely to attune to the competing demands of modern workplaces (Zhang et al., 2015).

The behavioral style of a paradoxical leader can be situated on five dimensions that consists of two "sides" that depend on and complement each other (Zhang et al., 2015). In situational and contingency perspectives on leadership, effective leadership behaviors is a matter of choosing for being for instance directive or participative ("either/or") depending on the demands of the work context. In contrast, paradoxical leadership implies behaviors that one is accepting and aims to harmonize or integrate ("both/and") competing demands (Zhang et al., 2015). Effective long term paradoxical leaders are assumed to (1) combine self-centeredness with other centeredness, (2) maintain both distance and closeness, (3) treat followers uniformly while allowing for individualization, (4) enforce work requirements while allowing flexibility and (5) maintain decision control while allowing autonomy. The first dimension refers to the ability of a leader to remain the central influential source on the work floor while also tuning in to workers' needs and allow for shared leadership with followers. The second dimension comprises of the ability to maintain hierarchical differences in resolving work-related issues, but at the same time build strong interpersonal relationships with followers. The third dimension is about ensuring harmony between uniformity and individuality by treating employees equally based on agreements and rules, while simultaneously making distinctions based on individual's wishes and talents. Finally, the last two dimensions both relate to the tension between control and empowerment. While the fourth concerns the ability to exert behavioral control (e.g., work processes) while allowing for flexibility, the fifth refers to the ability to maintain decision control (as in output control) while simultaneously stimulating employee autonomy.

Empirical studies have demonstrated that managers who exhibit paradoxical leadership are most effective in dealing with conflicting organizational issues in the short and long term (Pearce et al., 2019). Also, the beneficial consequences for organizational and employee performance have been demonstrated which includes indicators such as task performance (Zhang et al., 2015, 2021) as well as indicators of contextual performance, including creativity (Shao et al., 2019; Yang et al., 2021), innovative behaviors (Ingram et al., 2016; Zhang et al., 2021), adaptability (Zhang et al., 2021), voice behavior, and organizational citizenship behavior (Li et al., 2018, 2020; Xue et al., 2020; Meng et al., 2021; Zhang et al., 2021; Liu and Pak, 2023; Shehata et al., 2023).

As with most leadership styles, implications for employee well-being remains far less studied compared to performance outcomes

(Inceoglu et al., 2018). In this study we look into employee well-being by examining three concepts that serve as our outcome variables: job satisfaction, career satisfaction and life satisfaction.

2.2 Indicators of well-being: job, career and life satisfaction

Job satisfaction refers to the subjective well-being of individuals at work (Judge et al., 2020) and builds on Locke's (1976) original definition, which is "*a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences*" (p. 1304). In this study, we focus on global job satisfaction or the overall affect that workers experience regarding their job, and not on the satisfaction with particular job features (e.g., pay, co-workers) (Bowling and Hammond, 2008). Over time, job satisfaction has been studied extensively and appeared important for various other and more distal outcomes including individual motivation and performance, which is also of organizational concern (Aziri, 2011).

Career satisfaction can be considered the longer-term outcome of having satisfying jobs. Career satisfaction can be expressed by objective indicators like salary, or by people's subjective experience of being happy with their work over the career span (Ng et al., 2005). In line with Spurk et al. (2011) and Greenhaus et al. (1990), we define it as individuals' assessment of progress to different career-related goals and successes (e.g., development, income, overall successes). As work is an important aspect in life, which takes a considerable amount of time and energy of people, we argue that life satisfaction is also an important factor. Simply put, people need to earn a living, but additionally, individuals thrive for work that can make and keep them happy, healthy and productive (De Vos and Van der Heijden, 2015).

Life satisfaction concerns the appraisal of one's life in general and thus refers to one's global satisfaction with life (Diener et al., 1985; Kjell and Diener, 2021). Since work is such an important aspect in an individual's life, both job and career satisfaction might relate or spill-over to life satisfaction. Indeed, Beutell and Wittig-Berman (1999) revealed that job and career satisfaction each explained unique variance in life satisfaction. More recently, Hagmaier et al. (2018) confirmed spill-over effects for career satisfaction on life satisfaction, as well as reciprocal effects. Judge et al. (2020) argue for these spill-over effects from job satisfaction to life satisfaction, and reciprocal effects as well. Moreover, as underlined by previous empirical work, all three concepts are known to be affected by workplace factors, such as salary (Beutell and Wittig-Berman, 1999), job design and work conditions (Aziri, 2011) and leadership (see e.g., Belias and Koustelios, 2014; Chang et al., 2020). Therefore, we consider all three concepts as important independent, but also interrelated outcome variables for our study.

2.3 Paradoxical leadership and its relationship with job, career and life satisfaction

Several well-known theoretical frameworks applied in the field of leadership (Inceoglu et al., 2018) can explain relationships between paradoxical leadership and individual well-being. First of all, constructive leadership behaviors can, in line with Conservation of Resources (COR) Theory (Hobfoll, 1989), be seen as a "contextual" resource. Such resources may contribute to the accumulation of an employee's personal resources, such as psychological capital (Caniëls and Stynen, 2022), or job resources like autonomy or job clarity (Fürstenberg et al., 2021). In turn, these are in line with the JDR model expected to relate to favorable outcomes including well-being (Demerouti et al., 2001). As discussed earlier, paradoxical leaders know how to balance control and direction with empowerment and provide their followers leeway (Zhang et al., 2015). Alternatively, one could argue that paradoxical leaders are also strong in investing in the relational bonds with followers, as they can establish closeness with their followers, are capable of attuning to their needs and allow for differentiation in terms of their followers needs (Zhang et al., 2015). Hence, from a social-exchange perspective (Blau, 1964) it could be argued that relational investments made by the paradoxical leader in the follower are reciprocated in job-related attitudes, reflected in job satisfaction. In similar vein it can be argued that paradoxical leaders foster the satisfaction of basic human needs, as put forward in the Self-determination theory (SDT) (Ryan and Deci, 2000) including the need for autonomy (empowerment) and affiliation (relational bonds) (Fürstenberg et al., 2021), which are known to be related to improved well-being in work and beyond (Van den Broeck et al., 2016). Empirically, only one study investigated the relationship of paradoxical leadership with job satisfaction and found a positive relationship (Backhaus et al., 2022). To the authors knowledge, no studies have empirically assessed relationships with career satisfaction and life satisfaction. Obviously, career satisfaction and life satisfaction may in part be contingent upon one's current job satisfaction as work is an important domain in human life and work-related well-being is related to non-work-related well-being, and both can reciprocally reinforce each other (Bialowolski and Weziak-Bialowolska, 2021). From a theoretical perspective career and life satisfaction can be presumed to be positively affected by paradoxical leadership. Fulfillment of basic needs fosters autonomous motivation, and as people will engage more in activities, either work or non-work-related, that they find interesting and inherently pleasurable (Vansteenkiste et al., 2006; Deci and Ryan, 2008), they will become a more fully functioning person (Vansteenkiste et al., 2020). As this process unfolds it is likely go hand in hand with well-being related outcomes like career and life satisfaction (Walker and Kono, 2018). Given our earlier reasoning, we hypothesize that:

> *H1 Paradoxical leadership is positively related with employee job satisfaction (H1a), career satisfaction (H1b) and life satisfaction (H1c).*

2.4 Job insecurity as a mediator

Although prior explanations are relevant to understand relationships between paradoxical leadership and employee well-being, they could apply at a broader scale to other constructive leadership styles too, like servant leadership (Caniëls and Stynen, 2022) and may insufficiently account for how this leadership style is

apt to address fundamental paradoxical tensions in contemporary workplaces for leaders and their followers. As argued by Zhang et al. (2021) the followers of successful paradoxical leaders may develop an understanding that conflicting demands are inherent to organizational life and may find more productive ways to deal with those uncertainties and ambiguities. To better understand processes in which leaders tune in to workers' framing of such experiences and shape an appropriate social environment to deal with these accordingly, social-cognitive theories on leadership such as sense-making theory may be valuable (Inceoglu et al., 2018).

Experiences with organizational paradoxes are likely to generate feelings of threat, anxiety and uncertainty resulting in defensive and withdrawal behavior (Lewis, 2000; Smith and Lewis, 2011; Schad et al., 2016; Backhaus et al., 2022). In a general sense, workers may become uncertain regarding one's role in the organization when exposed to paradoxical tensions (Maitlis and Sonenshein, 2010). Job insecurity, or the perceived threats to the job itself (Greenhalgh and Rosenblatt, 1984) flourishes in a VUCA environment (De Cuyper et al., 2019). Sense-making theory provides a lens to understand how paradoxical leaders can play a role in how followers will experience and understand paradoxical tensions and the associated uncertainties. Specifically, by being a role model to their followers on how to deal with paradoxical tensions and explain these, as a challenge instead of a threat, leaders may enable their followers to cope with uncertainty and ambiguity and hence prevent defensive or negative perceptions or behaviors (Backhaus et al., 2022; Sparr et al., 2022). This line of argumentation may offer a more in-depth explanation for the more general argumentation that paradoxical leadership is a resource that can buffer or diminish the experience of job demands by individuals.

Previous studies have tested the role of paradoxical leadership in buffering job demands, such as role ambiguity (Backhaus et al., 2022). To our knowledge, the effect on uncertainty, like job insecurity, is not studied yet. We expect the line of reasoning to hold for uncertainty factors as well. This leads us to our next hypothesis which suggests a protective role of paradoxical leadership for the job demand of perceived job insecurity:

> *H2 Paradoxical leadership is negatively related with job insecurity*

Job insecurity or the perceived uncertainty workers have about the continuity of one's job (Greenhalgh and Rosenblatt, 1984) is an established work stressor (De Witte, 1999). Specifically, it can be conceptualized as a job demand or the "*physical, psychological, social or organizational aspects of a job that require sustained physical and/or psychological (cognitive or emotional) effort*," in line with the JD-R model (Bakker and Demerouti, 2007, p. 132). Therefore, job demands have potentially a wear and tear on the human body leading to energy depletion in workers (i.e., exhaustion) (Demerouti et al., 2001). Job hindrances are job demands that are predominantly conceived as solely interfering with people's work achievement and consuming all energy, yielding no opportunities for psychological growth as job challenges do. Typically, they are seen as threatening and beyond the control of the individual (Cavanaugh et al., 2000; Van den Broeck et al., 2010).

In general, there is consensus that job insecurity, because of its unpredictable and uncontrollable nature, is a hindrance stressor (De Witte et al., 2015; De Witte and Van Hootegem, 2021). Prior research has extensively shown that job insecurity is negatively related to employee well-being over time (De Witte et al., 2016). Meta-analytical studies have found strong negative associations between job insecurity and job satisfaction and life satisfaction (Jiang and Lavaysse, 2018), and empirical studies have also reported negative associations with career satisfaction, as job insecurity is likely to undermine successful career development (Otto et al., 2011; Ngo and Li, 2015). In line we hypothesize:

> *H3 Job insecurity is negatively related with employee job satisfaction (H3a), career satisfaction (H3b) and life satisfaction (H3c).*

As a final step for our model, and based on our reasoning thus far, we suggest that job insecurity can act as a mediator in the relationship between paradoxical leadership and employee well-being. Job insecurity can, in line with the JD-R model (Demerouti et al., 2001), be considered a hindrance stressor that impedes employee well-being (De Witte et al., 2015; De Witte and Van Hootegem, 2021). We assume that paradoxical leaders may mitigate the inherent uncertainties in modern workplaces that workers can experience as threatening. As demonstrated earlier, paradoxical leaders can alter workers' experiences of the working environment, including the experienced resourcefulness (see e.g., Fürstenberg et al., 2021) through stimulating sense-making by either explaining what is at hand or by serving as a role model to their followers (see e.g., Backhaus et al., 2022; Sparr et al., 2022). We argue that these same processes may also alleviate the perceptions of threatening job demands, like job insecurity, are prevented, thereby contributing to employee well-being both in and beyond work. Hence, we more formally hypothesize:

> *H4 Job insecurity mediates the relationship between paradoxical leadership and employee job satisfaction (H4a), career satisfaction (H4b) and life satisfaction (H4c).*

The resulting conceptual model for our study is presented in **Figure 1**.

3 Materials and methods

3.1 Sample and procedure

To investigate our hypotheses, data were collected by means of an online longitudinal survey. Convenience sampling was applied as respondents were recruited from the professional networks of master students who were subscribed within the broader faculty research line on Sustainable Human Resource Management under supervision of the authors, Prior to data collection approval was granted by the authors' institutional Ethics Committee (U202101540). As our study was not targeted to specific groups and our master students, who were all employed themselves, had access to different organizations representing

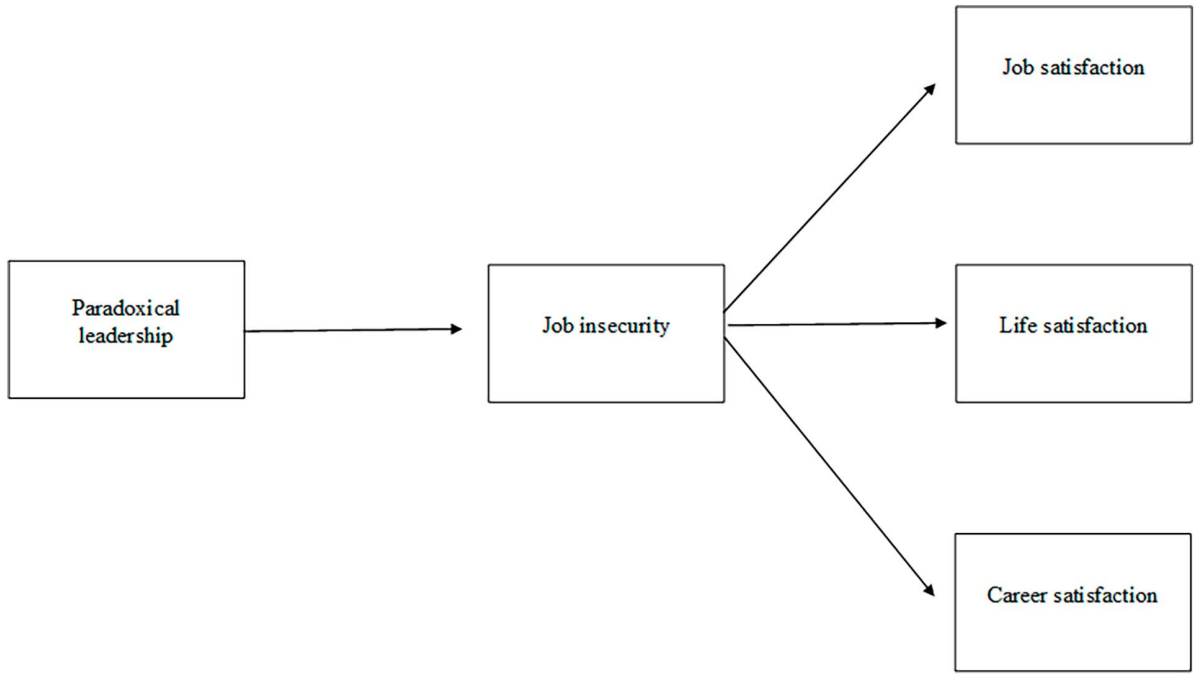


FIGURE 1
Conceptual model.

substantial variation in sectors and jobs, the aforementioned sampling approach was chosen.

The students contacted Dutch companies and organizations within their professional networks and informed management about the study based on a uniform information letter covering all aspects of the research including the aim and design of the study as well as their rights and how data protection was guaranteed by the researchers. Next, written, formal permission was established from the management of Dutch companies and organizations to participate and recruit respondents within their organization. Organizations determined which departments or teams could participate in the research and informed the selected employees by means of an information letter provided by the researchers, covering all aspects of the research. Eligible respondents were at least 18 years old or older, active as an employee in the organization, and had a company email address. No other inclusion criteria were considered. Eleven organizations granted permission and transferred email addresses of employees to the researchers. Organizations were active in the following sectors: care and welfare ($N = 3$), transportation ($N = 1$), media ($N = 1$), higher and primary education ($N = 3$), industry ($N = 2$), and construction ($N = 1$).

The online survey comprised of a limited set of background variables (e.g., age), organizational and work-related factors (Human Resource practices, paradoxical leadership, job insecurity) and work or career-related outcomes (e.g., job satisfaction, career satisfaction). For all measurements, besides background variables, validated rating scales were used. The survey was developed by the authors and approved by their institutional Ethics Committee. The survey was set up in LimeSurvey, hosted on a server hosted by the authors' institution. Shortly after selected employees received information from their company, they received an email, which contained a link to the online questionnaire. The email was sent from an email address that was specifically created by the authors and only under their control. Information on the research was again provided online and before respondents could take the survey their informed consent was digitally acquired. The first questionnaire was launched at the end of March 2021 (T0) and reminders were sent after 2 weeks and closed after a month. Of the 3,163 employees that were approached, 1,289 employees responded (40.7%). The follow-up survey was sent 6 months later (T1), to which 741 employees responded (23.4%). In total 287 employees had filled in both surveys and had complete information on all variables included in this study.

The majority of respondents was male (55%), and their average was 47 years. Almost all respondents (92%) were employed in a large organization (250 employees or more). On average organizational tenure of respondents was 15 years. About 74% had obtained either a professional or academic degree in higher education.

3.2 Measures

Paradoxical leadership was measured at T0 by means of Zhang et al.'s (2015) scale, which comprises of 22 items. An example item was "My supervisor uses a fair approach to treat all subordinates uniformly, but also treats them as individuals" and "Shows a desire to lead, but allows others to share the leadership role" All items were assessed on 5-point Likert scale ranging from 1. "Strongly disagree" to 5. "Strongly agree." Cronbach's Alpha was 0.94.

Job satisfaction was assessed at T1 by means of a 3-item scale developed by Cammann et al. (1983). An example item was, "Overall, I am satisfied with my current job." All items were

assessed on 7-point Likert scale ranging from 1. "Strongly disagree" to 7. "Strongly agree." The Cronbach's Alpha was 0.81.

Career satisfaction was measured at T1 using the 5-item Greenhaus et al. (1990) scale. Respondents were asked to indicate their satisfaction with various aspects like career success (e.g., "I am. . ..with the success I have achieved in my career") on a 5-point Likert scale range from 1. "Very dissatisfied" to 5. "Very satisfied." Cronbach's Alpha was 0.82.

Life satisfaction was assessed at T1 using Kjell and Diener (2021)'s 3- item scale. Respondents were asked to rate statements about the appraisal of their lives thus far. An example item is "I am satisfied with my life." A 5-point Likert scale ranging from 1. "Strongly disagree" to 5. "Strongly agree" was used. Cronbach's Alpha was 0.89.

Job insecurity was measured at T0 by means of the job insecurity the subscale developed by Creed et al. (2020) to assess precarious working conditions. An example item was "Are you concerned about losing your current job in the near future?" Respondents could indicate to what extent the described condition applied to them on a 6-point scale ranging from 1. "Not at all" to 6. "A great extent." Cronbach's Alpha was 0.78.

Control variables that were taken into account are: gender (reference category female), age (in years), organizational tenure (in years), labor market tenure (in years) and educational level. Three levels of educations were distinguished: low (at most secondary school), middle (higher professional education) or high (higher academic bachelor or master or doctorate). The latter category was set as a reference category. In prior research age, gender, tenure and educational level have been identified as demographic predictors of job, career and/or life satisfaction (Martins et al., 2002; Moyes et al., 2006; Park et al., 2010).

3.3 Analytical approach

We applied structural equation modeling in two steps (McDonald and Ho, 2002) using Mplus 7.0 (Muthén and Muthén, 2012). First, we conducted Confirmatory Factor Analysis (CFA) to test the measurement model. Next, we applied Path Analysis (PA) to test our hypotheses. Model fit was evaluated by means of the comparative fit index (CFI), the root mean square error of approximation (RMSEA) and the standardized root mean square residuals (SRMR) (Hu and Bentler, 1999). Indications of acceptable model fit are CFI values larger than 0.90 (Bentler, 1990), and RMSEA and SRMR values below 0.08 and 0.10, respectively (Hu and Bentler, 1999).

The hypothesized measurement model comprises of the factors: paradoxical leadership (T0), job satisfaction (T1), career satisfaction (T1), life satisfaction (T1) and job insecurity (T0). The items for job satisfaction, career satisfaction, life satisfaction and job insecurity were loaded on their latent factors, respectively. As the measure of paradoxical leadership comprises of 22 items, the items were parceled (i.e., seven parcels of three to maximum four items) to maintain a favorable ratio between sample size and the number of estimated parameters (Little et al., 2002). The measurement model fitted the data well ($\chi 2(179) = 377.34$; $p < 0.001$; CFI = 0.94; RMSEA = 0.06, SRMR = 0.05). To test for common method variance, we conducted Harman's one-factor (or single-factor) test and compared the fit of that model with our measurement model. The single-factor model resulted in a significantly worse fit ($\chi 2(189) = 1934.24$, $p < 0.001$; CFI = 0.46; RMSEA = 0.18 and SRMR = 0.16; $\Delta\chi 2(10) = 1556.90$, $p < 0.001$). As sufficient construct validity was established by our CFA, descriptive results (means, standard deviations and inter-correlations) were computed for all included variables in this study and depicted in **Table 1** in the section "4. Results."

Hypotheses were tested by means of PA. In all analyses the confounders were added as covariates. To test hypotheses 1a-c, a first model was estimated in which the three dependent variables were simultaneously regressed on paradoxical leadership. Subsequently, to test hypotheses 2 and H3a-c, a full mediation model was estimated in which job insecurity was added as a mediator to the prior model. Next, to formally examine our mediation hypotheses, as implied by hypotheses 4a-c, the statistical significance of the indirect paths is estimated by means of the MODEL INDIRECT command. To rule out partial mediation, additional direct paths between paradoxical leadership and job satisfaction, career satisfaction and life satisfaction were estimated sequentially.

4 Results

4.1 Descriptive results

Descriptive results of our study are presented in **Table 1**.

4.2 Hypotheses testing

In a first model, to test hypotheses 1a-c, job satisfaction, career satisfaction and life satisfaction were simultaneously regressed on paradoxical leadership. Support was found for all three hypotheses as paradoxical leadership was positively related to job satisfaction ($\beta = 0.32$, $p < 0.001$, 95% CI [0.21, 0.42]), career satisfaction ($\beta = 0.28$, $p < 0.001$, 95% CI [0.18, 0.39]) and life satisfaction ($\beta = 0.22$, $p < 0.001$, 95% CI [0.11, 0.33]).

Next, a full mediation model was estimated including job insecurity in the role of mediator ($\chi 2(9) = 35.97$; $p < 0.001$; CFI = 0.88; RMSEA = 0.10, SRMR = 0.05). Support was provided for hypothesis 2 as paradoxical leadership was negatively related to job insecurity ($\beta = -0.20$, $p = 0.001$, 95% CI [−0.31, −0.09]). In addition, job insecurity was negatively related to job satisfaction ($\beta = -0.29$, $p < 0.001$, 95% CI [−0.40, −0.18]), career satisfaction ($\beta = -0.23$, $p < 0.001$, 95% CI [−0.34, −0.13]) and life satisfaction ($\beta = -0.13$, $p = 0.029$, 95% CI [−0.24, −0.01]), corroborating hypotheses 3a-c. This pattern of results suggests mediation as proposed by hypotheses 4a-c. To formally test mediation, indirect effects were computed. The coefficients of the indirect paths between paradoxical leadership via job insecurity to job satisfaction ($\beta = 0.06$, $p = 0.004$, 95% CI [0.02, 0.10]) and career satisfaction ($\beta = 0.05$, $p = 0.008$, 95% CI [0.01, 0.08]) were both significant, whereas the indirect path to life satisfaction via job insecurity was not significant ($\beta = 0.03$, $p = 0.065$, 95% CI [−0.00, 0.05]). Hence, results indicate that job insecurity mediates the associations between paradoxical leadership and job satisfaction and career

TABLE 1 Means, standard deviations, and correlations.

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. Age	46.98	11.18											
2. Gender	0.56	0.50	−0.24**										
3. Low educational level	0.25	0.44	−0.21**	0.01									
4. Middle educational level	0.46	0.50	−0.10	0.03	−0.54**								
5. High educational level	0.28	0.45	−0.09	−0.03	−0.37**	−0.58**							
6. Organizational tenure	14.81	11.57	0.62**	−0.22**	0.23**	−0.12	−0.09						
7. Labor market tenure	24.82	11.94	0.94**	−0.25**	0.30**	−0.08	−0.20**	0.64**					
8. Paradoxical leadership	3.79	0.60	−0.04	0.06	−0.12*	0.07	0.04	−0.16**	−0.07				
9. Job insecurity	2.21	0.94	0.08	−0.08	−0.06	0.07	−0.02	0.05	0.06	−0.20**			
10. Job satisfaction	5.92	0.97	−0.03	0.04	−0.03	0.06	−0.04	0.03	−0.04	0.30**	−0.28**		
11. Career satisfaction	3.67	0.63	0.19**	−0.14*	−0.09	0.02	0.07	0.13*	0.18**	0.27**	−0.20**	0.47**	
12. Life satisfaction	4.00	0.64	0.02	−0.06	−0.11	0.05	0.06	0.04	−0.01	0.22**	−0.11	0.42**	0.35**

M and SD represent mean and standard deviation, respectively. *$p < 0.05$, **$p < 0.01$.

10.3389/fpsyg.2023.1148822

satisfaction, respectively. As no indication for mediation was found for the association between paradoxical leadership and life satisfaction, hypotheses 4a-b are supported, whereas hypothesis 4c could not be confirmed.

To explore the possibility of partial mediation, three additional models were estimated in which sequentially a direct path was added between paradoxical leadership and job satisfaction, career satisfaction and life satisfaction, respectively. In a first model the direct path between paradoxical leadership and job satisfaction was added ($\chi 2(8) = 29.65$; $p < 0.001$; CFI = 0.90; RMSEA = 0.10, SRMR = 0.04) and found to be significant ($\beta = 0.13$ $p = 0.013$, 95% CI [0.03, 0.23]) and improved model fit ($\Delta\chi 2(1) = 6.32$, $p < 0.05$). Subsequently, a model with a direct path between paradoxical leadership and career satisfaction was estimated ($\chi 2(8) = 30.96$; $p < 0.001$; CFI = 0.90; RMSEA = 0.10, SRMR = 0.04). The path was significant ($\beta = 0.12$ $p = 0.026$, 95% CI [0.01, 0.22]) and improved model fit ($\Delta\chi 2(1) = 5.01$, $p < 0.05$). Finally, a model with an additional direct path between paradoxical leadership and life satisfaction was estimated ($\chi 2(8) = 34.06$; $p < 0.001$; CFI = 0.88; RMSEA = 0.11, SRMR = 0.05). Yet, this path was not significant ($\beta = 0.08$ $p = 0.17$, 95% CI [−0.03, 0.19]) and did not improve model fit ($\Delta\chi 2(1) = 1.91$ $p > 0.05$). Hence, it can be concluded that job insecurity partially mediates the association between paradoxical leadership and job satisfaction and career satisfaction, respectively. A model in which both direct paths are simultaneously added, fitted the data well ($\chi 2(7) = 17.97$; $p < 0.001$; CFI = 0.95; RMSEA = 0.07, SRMR = 0.03). The standardized coefficients of this final model are depicted in **Figure 2**. The R-square for the dependent variables career satisfaction, job satisfaction, life satisfaction and job insecurity are: 0.16, 0.13, 0.04, and 0.04, respectively. Concerning the control variables only the low educational level was significantly related to career satisfaction ($\beta = -0.17$, $p = 0.018$, 95% CI [−0.31, −0.03]). All other control variables were unrelated to any of these dependent variables.

The standardized results of our path analysis are summarized in **Figure 2** below.

5 Discussion

Developments in society and at work, such as the increased use of artificial intelligence, and flexibilization of labor, but also broader economic uncertainties are challenging organizations and their employees (Yam et al., 2023). These developments are inherently related to tensions that are paradoxical in nature, and put increasing and new demands on all personnel layers in organizations with the potential to undermine individual well-being (Zhang et al., 2021; Nilsen and Kongsvik, 2023). Due to the diverging interests of the different stakeholders involved (such as client or customer, worker, higher management, legislation, and environmental interests), new and different behaviors are required in the management of organizations to continue their business and deal with all these emerging paradoxical tensions (Zhang et al., 2022).

Leaders are crucial for employee well-being (Das and Pattanayak, 2023) and play an important role in dealing with these tensions, not only for themselves, but also as a role model for their followers in addressing these. Paradoxical leadership (Zhang et al., 2015), a new concept within the leadership literature, has the potential to make a difference in these turbulent times. Knowledge on the impact of paradoxical leadership, for example on worker well-being, is however still scarce. In this study, we contributed to that emerging stream in the literature by studying the role of paradoxical leadership on worker well-being in terms of job, career and life satisfaction and investigating to what extent these linkages can be explained by the mitigation of workers' experienced job insecurity. To explain the proposed mechanisms, we relied on the JD-R framework (Demerouti et al., 2001) as well as sense-making theory (Weick, 1995). We investigated these relationships by administrating an online survey among Dutch workers from eleven different profit and non-profit organizations. We tested the model with structural equation modeling using a time-lagged design.

5.1 Theoretical implications

First of all, our results indicated that paradoxical leadership positively affects all three outcomes directly (job, career, and life satisfaction) herewith supporting hypotheses 1a, b and c. These findings corroborate our propositions, suggesting that paradoxical leadership can be seen as a contextual resource that triggers the accumulation of other personal resources in line with COR-theory (Hobfoll, 1989), either because it fulfills peoples' basic needs as SDT proposes, or because it stimulates vigor in workers as the JD-R model implies. Under such momentary conditions people can thrive and it is understandable that well-being, as indicated by job satisfaction, is able to flourish. Yet, findings also suggest that career satisfaction and life satisfaction, which imply a longer time window, are fostered. Probably, these can be explained in line with SDT, which suggests that basic needs satisfaction is a leverage for making more autonomous choices in one's career and life as a whole. As a consequence, subjective assessments of satisfaction with one's career and life are experienced as more favorable. These findings support the results of Backhaus et al. (2022) regarding the positive effect of paradoxical leadership on job satisfaction. Moreover, we add to the literature on paradoxical leadership and its consequences for worker well-being as we found positive effects on career and life satisfaction as well.

Paradoxical leadership appeared to be negatively associated with job insecurity, which supports hypothesis 2. This is in line with our reasoning based on sense-making theory that paradoxical leadership can help workers to be able to deal better with job demands in terms of challenges, or uncertainty. Specifically, and building on the relevant notions of sense-making theory (Zhang et al., 2021), we argued that paradoxical leadership can help followers to deal better with demands in such a way that they aid in framing stressors as challenges which remain more under workers' control. By making sense of uncertainties and putting them in perspective, such uncertainties are less likely to trigger hindrance appraisals of stressors like perceived job insecurity, which are experienced as out of workers' control. This finding also contributes to the literature on the work-related antecedents of job insecurity, which has received less attention compared the consequences of job insecurity (Shoss, 2017). In addition, it adds to sense-making theory as a relevant theoretical framework to aid our understanding

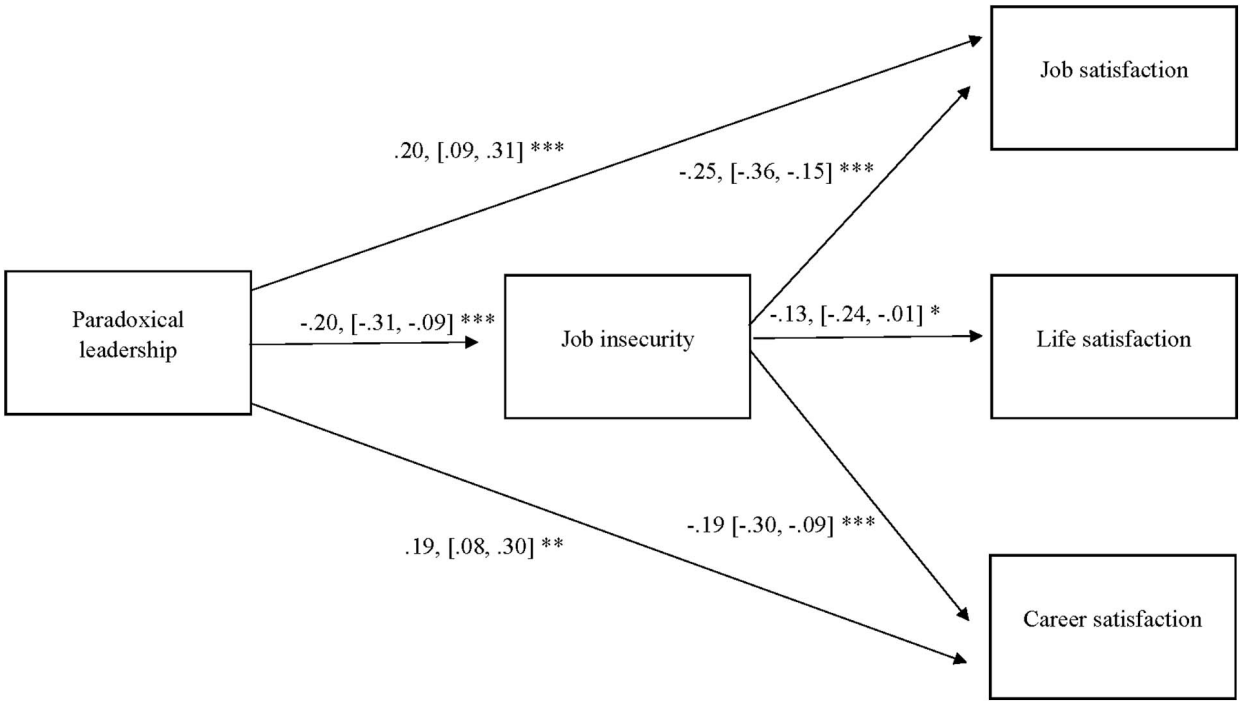


FIGURE 2
Standardized results path analysis with 95% confidence intervals. *Indicates $p < 0.05$, **indicates $p < 0.005$, ***indicates $p < 0.001$.

regarding the role of shared work-related factors at the meso-level, like leadership, in explaining employee perceptions of the psychosocial working environment, like job insecurity. However, currently we can only implicitly confirm this line of argumentation. To test these propositions more explicitly, future research could include the measurement of sense-making processes in the empirical model. Measuring sense-making directly can be difficult, and quite paradoxical in itself, requiring conscious choices of what and how it is measured (Allard-Poesi, 2005). Previous empirical research made use of a combination of tailor-made survey data and open-ended questions (Bartunek et al., 2006). Alternatively, qualitative research may also aid in better understanding how such process develops.

Next, job insecurity was directly and negatively related to all three outcomes (job, career and life satisfaction) as well, thereby supporting hypothesis 3a, b and c. These results align with the argument based on the JD-R model (Demerouti et al., 2001) that job insecurity can be considered a job demand that diminishes positive outcomes, because of the energy depletion process that has been triggered. Such a demand is consuming available energy resources of the individual without yielding sufficient opportunities to replenish these resources again in time (Bakker and Demerouti, 2007). Not only is well-being in one's current job context affected in a negative way, but it can apparently spill over to satisfaction appraisals of one's entire career and life in general as well. Job insecurity has previously been identified as an important hindrance stressor with negative consequences on several aspects for individuals and organizations alike (Sverke et al., 2002; Jiang and Lavaysse, 2018, Langerak et al., 2022), which is again confirmed by our results. In particular the implication for career satisfaction broadens the existing evidence base, as this outcome has barely been studied in relation to job insecurity before.

Finally, job insecurity mediates the effect of paradoxical leadership on job and career satisfaction, but not on life satisfaction, herewith supporting hypotheses 4a and b, but not hypothesis 4c. This means that our presumed pathway through the mitigation of job insecurity holds for work related outcomes, but does not account for the broader concept of life-satisfaction. There are two plausible explanations. First of all, life satisfaction is affected by many different non-work-related factors (Near et al., 1984), and varies across cultures (Oishi et al., 2009). In this respect, life events like sickness, personal setbacks in relationships, but also the current larger societal circumstances (e.g., war, economic recession, the COVID crisis) might have an unknown impact. Also job insecurity has been empirically shown to be a more sizeable predictor of job satisfaction than life satisfaction. Second, it is possible that job and career satisfaction may act as a mediating mechanism between work-related factors like leadership, job demands and life satisfaction. As also raised mentioned earlier, spill-over effects between these types of satisfaction have been detected (Hagmaier et al., 2018; Judge et al., 2020) but not explicitly tested in our research. Alternatively, the positive effect of paradoxical leadership on life satisfaction might be explained by different mechanisms. COR-theory suggests that paradoxical leadership is a contextual resource that may trigger personal resource accumulation, for example, in terms of one's psychological capital (PsyCap; Luthans et al., 2007). Enhanced optimism, hope and resilience could contribute to more life satisfaction. SDT would emphasize the role of basic need fulfillment and the making of autonomous choices in life could be a plausible alternative. This interpretation suggests that resource-oriented explanations may be more fruitful

to explain life satisfaction compared to work-related well-being outcomes, like job and career satisfaction. In addition, it should also be noted that regarding career and job satisfaction, we only established indications for partial mediation. This suggests that also other processes (e.g., resource-oriented explanations), or other job demands (e.g., role conflict, role ambiguity) may be useful alternatives to consider in future research. Nevertheless, our study is one of the few that investigates to what extent sense-making processes involving the malleability of perceived job demands may act as a mediating mechanism. Whereas Fürstenberg et al. (2021) found support for the mediating role of job resources, our study suggests that paradoxical leaders may also shape the perceptions of job demands in their followers. Therefore, efforts to further the alignment of sense-making theory with theories on the psychosocial working environment like the JDR-model might help to better understand how contextual factors, like leadership, may shape perceptions of the demanding aspects of work over time.

5.2 Practical implications

The results of our study also have implications for practice, as paradoxical leadership seems to play a positive role for worker well-being in these turbulent times. It is therefore recommended that organizations get acquainted with this rather new leadership behavior and let their leaders learn how to develop it. This leadership behavior can help to directly enhance worker well-being in terms of job, career and life satisfaction, and could also help people from reframing uncertainties in the workplace in a way that prevents hindrance appraisals of job insecurity. Although job insecurity is difficult to control, paradoxical leadership can be trained, which can be facilitated by the organization. Moreover, worker well-being can be incorporated in the performance appraisals for leaders to emphasize its importance and to follow up with explicit developmental goals for the desirable leadership behavior. Worker well-being, such as job, career and life satisfaction, is not only important for its own good, but also known to be an important prerequisite for good organizational functioning (e.g., resilience, innovation and viability) (see, e.g., Harter et al., 2003; Kuntz et al., 2016; Ungar, 2021). It therefore deserves explicit attention.

5.3 Limitations and avenues for future research

The current study has its limitations as well. First, although our model is time-lagged, a longitudinal design with three measurement waves could test the mediating role of job insecurity more rigorously, in particular how job insecurity levels may change over time. Related, many contextual factors (e.g., regional unemployment rate, financial turmoil in companies) can influence perceived job insecurity (Shoss, 2017), which we did not account for, and therefore endogeneity cannot be ruled out. Future research can consider taking alternative, contextual variables as confounders into account. Second, our measures consisted of self-reports among employees, which enhances the risk for mono-method bias (Donaldson and Grant-Vallone, 2002). In our design, this risk has been mitigated by guaranteeing anonymity for respondents, herewith creating a context for honest responses as much as possible, and giving full autonomy to withdraw from the study at any time (Podsakoff et al., 2012). In addition, we used survey scales with varying scale anchors which can prevent stylistic answering. However, future research could make use of multisource reports. Ratings of the leaders or supervisors of these employees could be valuable as well, also in terms of the discrepancies between these ratings when it comes to the relationship with relevant outcomes concerning worker well-being (see e.g., Kopperud et al., 2014; Mazzetti et al., 2016). Alternatively, one could also aim to investigate these processes in the context of teams and investigate these relationships from a multi-level perspective. Finally, in this study we opted for a time lag of 6 months. Potentially, as participants lost connection with the study over this time interval, this resulted in increased drop-out and hence a low response on our follow-up measurement. Generalization of findings should be done with caution.

Knowledge on the influence of paradoxical leadership is only in its infancy, but seems promising based on our results. For future research alternative theoretical perspectives can be further explored including SDT, but also social-exchange related frameworks and related concepts like leader-membership exchange (LMX) (Dansereau et al., 1975; Graen and Uhl-Bien, 1995) to better understand the underlying mechanisms of the positive effects. In line with this, the alignment of Sense- making theory (Weick, 1995) with other frameworks is relevant to explore too. Relevant contributions can also be sought in studying other outcomes that are of interest to the organizations, such as their innovative capacity (Camisón and Villar-López, 2014), but also longer-term viability (Stjernberg and Philips, 1993).

Finally, the value of this leadership behavior when compared to other contemporary leadership behaviors could be explored. In particular to styles that often imply diverging behaviors from leaders, such as ambidextrous leadership (Probst et al., 2011; Rosing et al., 2011), and engaging leadership (Schaufeli, 2015) versus disengaging leadership (Nikolova et al., 2021).

Data availability statement

The datasets presented in this article are not readily available because respondents have not consented to share the data with third parties. Requests to access the datasets should be directed to DS, dave.stynen@ou.nl.

Ethics statement

The studies involving human participants were reviewed and approved by the Research Ethics Committee (cETO) of the Open Universiteit (Netherlands). The patients/participants provided their written informed consent to participate in this study.

Author contributions

Both authors listed have made a substantial, direct, and intellectual contribution to the work, and approved it for publication.

Acknowledgments

We acknowledge the contributions of Jeroen Henkelman, Lisanne Hagoort, Klaudia Varga, Vincent Ribot, Tessa Bos, Mirzeta de Wild, Elvira van Poelgeest, Mirella van Poelgeest, Jan Gielen, and Monique van Eijk in the data collection.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

References

Alarco, B., De Cuyper, N., and De Witte, H. (2012). The relationship between job insecurity and well-being among Peruvian workers. *Romanian J. Appl. Psychol.* 14, 43–52.

Allard-Poesi, F. (2005). The paradox of sensemaking in organizational analysis. *Organization* 12, 169–196.

Aziri, B. (2011). Job satisfaction: A literature review. *Manag. Res. Pract.* 3, 77–86.

Backhaus, L., Reuber, A., Vogel, D., and Vogel, R. (2022). Giving sense about paradoxes: Paradoxical leadership in the public sector. *Public Manag. Rev.* 24, 1–21.

Bakker, A. B., and Demerouti, E. (2007). The job demands-resources model: State of the art. *J. Manager. Psychol.* 22, 309–328. doi: 10.3390/ijerph17010069

Bartunek, J. M., Rousseau, D. M., Rudolph, J. W., and DePalma, J. A. (2006). On the receiving end: Sensemaking, emotion, and assessments of an organizational change initiated by others. *J. Appl. Behav. Sci.* 42, 182–206.

Belias, D., and Koustelios, A. (2014). Leadership and Job Satisfaction - a review. *Eur. Sci. J.* 10, 24–46.

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychol. Bull.* 107, 238.

Beutell, N. J., and Wittig-Berman, U. (1999). Predictors of work-family conflict and satisfaction with family, job, career, and life. *Psychol. Rep.* 85, 893–903. doi: 10.1089/jwh.2017.6457

Bialowolski, P., and Weziak-Bialowolska, D. (2021). Longitudinal evidence for reciprocal effects between life satisfaction and job satisfaction. *J. Happ. Stud.* 22, 1287–1312.

Blau, P. M. (1964). *Exchange and power in social life*. New York, NY: Wiley-Interscience.

Bloodgood, J. M., and Chae, B. K. (2010). Organizational paradoxes: Dynamic shifting and integrative management. *Manag. Decis.* 48, 85–104. doi: 10.1177/1039856216657698

Bowling, N. A., and Hammond, G. D. (2008). A meta-analytic examination of the construct validity of the Michigan organizational assessment questionnaire job satisfaction subscale. *J. Vocat. Behav.* 73, 63–77.

Camisón, C., and Villar-López, A. (2014). Organizational innovation as an enabler of technological innovation capabilities and firm performance. *J. Bus. Res.* 67, 2891–2902.

Cammann, C., Fichman, M., Jenkins, G. D., and Klesh, J. (1983). "Michigan organizational assessment questionnaire," in *Assessing organizational change: A guide to methods, measures, and practices*, eds S. E. Seashore, E. E. Lawler, P. H. Mirvis, and C. Cammann (New York: Wiley-Interscience), 71–138.

Caniëls, M. C., and Stynen, D. (2022). The role of the leader in fostering employee resilient behaviors: A multi-source, longitudinal study. *J. Occupat. Environ. Med.* 64, 985–993. doi: 10.1097/JOM.0000000000002652

Cavanaugh, M. A., Boswell, W. R., Roehling, M. V., and Boudreau, J. W. (2000). An empirical examination of self-reported work stress among US managers. *J. Appl. Psychol.* 85, 65–74.

Chang, W., Busser, J., and Liu, A. (2020). Authentic leadership and career satisfaction: The meditating role of thriving and conditional effect of psychological contract fulfillment. *Int. J. Contemp. Hosp. Manag.* 32, 2117–2136.

Clegg, S. R., da Cunha, J. V., and e Cunha, M. P. (2002). Management paradoxes: A relational view. *Hum. Relat.* 55, 483–503.

Creed, P. A., Hood, M., Selenko, E., and Bagley, L. (2020). The development and initial validation of a self-report job precariousness scale suitable for use with young adults who study and work. *J. Career Assess.* 28, 636–654.

Dansereau, F., Graen, G. B., and Haga, W. (1975). A vertical dyad linkage approach to leader. *Organ. Behav. Hum. Perform.* 13, 46–78.

Das, S. S., and Pattanayak, S. (2023). Understanding the effect of leadership styles on employee well-being through leader-member exchange. *Curr. Psychol.* 42, 21310–21325. doi: 10.1111/j.1365-2834.2011.01322.x

De Cuyper, N., Van Hootegem, A., Smet, K., Houben, E., and De Witte, H. (2019). All insecure, all good? Job insecurity profiles in relation to career correlates. *Int. J. Environ. Res. Public Health* 16:2640. doi: 10.3390/ijerph16152640

De Vos, A., and Van der Heijden, B. I. J. M. (2015). *Handbook of research on sustainable careers*. Cheltenham: Edward Elgar Publishing.

De Witte, H. (1999). Job insecurity and psychological well-being: Review of the literature and exploration of some unresolved issues. *Eur. J. Work Organ. Psychol.* 8, 155–177.

De Witte, H., and Van Hootegem, A. (2021). "Job Insecurity: Challenge or hindrance stressor? Review of the evidence and empirical test on entrepreneurs," in *Flexible working practices and approaches*, ed. C. Korunka (Cham: Springer), 213–229.

De Witte, H., Pienaar, J., and De Cuyper, N. (2016). Review of 30 years of longitudinal studies on the association between job insecurity and health and well-being: Is there causal evidence? *Austr. Psychol.* 51, 18–31.

De Witte, H., Vander Elst, T., and De Cuyper, N. (2015). "Job insecurity, health and well-being," in *Sustainable working lives: Managing work transitions and health throughout the life course*, eds J. Vuori, R. Blonk, and R. H. Price (Cham: Springer Science + Business Media), 109–128.

Deci, E. L., and Ryan, R. M. (2008). Facilitating optimal motivation and psychological well-being across life's domains. *Can. Psychol.* 49:14.

Demerouti, E., Bakker, A. B., Nachreiner, F., and Schaufeli, W. (2001). The job demands – resources model of burnout. *J. Appl. Psychol.* 86, 499–512.

Den Hartog, D. N., Boon, C., Verburg, R. M., and Croon, M. A. (2013). HRM, communication, satisfaction, and perceived performance: A cross-level test. *J. Manag.* 39, 1637–1665.

Derue, D. S., Nahrgang, J. D., Wellman, N. E., and Humphrey, S. E. (2011). Trait and behavioral theories of leadership: An integration and meta-analytic test of their relative validity. *Pers. Psychol.* 64, 7–52.

Di Fabio, A. D. (2017). Positive healthy organizations: Promoting well-being, meaningfulness, and sustainability in Organizations. *Front. Psychol.* 8:1938. doi: 10.3389/fpsyg.2017.01938

Diener, E., Emmons, R. A., Larsen, R. J., and Griffin, S. (1985). The satisfaction with life scale. *J. Pers. Assess.* 49, 71–75.

Donaldson, S. I., and Grant-Vallone, E. J. (2002). Understanding self-report bias in organizational behavior research. *J. Bus. Psychol.* 17, 245–260. doi: 10.1002/cl2.1173

Engbersen, G. B. M., Kremer, M., Went, R. C. P. M., and Boot, A. W. A. (2020). *Het betere werk. De nieuwe maatschappelijke opdracht. [The better work. A new societal mission]*. Den Haag: Wetenschappelijke Raad voor Regeringsbeleid [The Scientific Council for Government Policy].

Fürstenberg, N., Alfes, K., and Kearney, E. (2021). How and when paradoxical leadership benefits work engagement: The role of goal clarity and work autonomy. *J. Occup. Organ. Psychol.* 94, 672–705.

Gaspar, T., Paiva, T., and Matos, M. G. (2021). Impact of COVID-19 in global health and psychosocial risks at work. *J. Occup. Environ. Med.* 63, 581–587.

Graen, G. B., and Uhl-Bien, M. (1995). Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *Leadersh. Q.* 6, 219–247.

Greenhalgh, L., and Rosenblatt, Z. (1984). Job insecurity: Toward conceptual clarity. *Acad. Manag. Rev.* 9, 438–448.

Greenhaus, J. H., Parasuraman, S., and Wormley, W. M. (1990). Effects of race on organizational experiences, job performance evaluations, and career outcomes. *Acad. Manag. J.* 33, 64–86.

Guan, Y., Arthur, M. B., Khapova, S. N., Hall, R. J., and Lord, R. G. (2019). Career boundarylessness and career success: A review, integration and guide to future research. *J. Vocat. Behav.* 110, 390–402.

Hagmaier, T., Abele, A. E., and Goebel, K. (2018). How do career satisfaction and life satisfaction associate? *J. Manager. Psychol.* 33, 142–160.

Hahn, T., and Knight, E. (2021). The ontology of organizational paradox: A quantum approach. *Acad. Manag. Rev.* 46, 362–384.

Handwerker, E. W., Meyer, P. B., and Piacentini, J. (2020). Employment recovery in the wake of the COVID-19 pandemic. *Monthly Labor Rev.* 143, 1–24.

Harms, P. D., Credé, M., Tynan, M., Leon, M., and Jeung, W. (2017). Leadership and stress: A meta-analytic review. *Leadersh. Q.* 28, 178–194.

Harter, J. K., Schmidt, F. L., and Keyes, C. L. (2003). "Well-being in the workplace and its relationship to business outcomes: A review of the Gallup studies," in *Flourishing: the positive person and the good life*, eds C. L. Keyes and J. Haidt (Washington D.C: American Psychological Association), 205–224.

Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *Am. Psychol.* 44:513.

Hu, L. T., and Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Struct. Equ. Model.* 6, 1–55. doi: 10.1080/00273171.2022.2163476

Huettermann, H., and Bruch, H. (2019). Mutual gains? Health-related HRM, collective well-being and organizational performance. *J. Manag. Stud.* 56, 1045–1072.

Inceoglu, I., Thomas, G., Chu, C., Plans, D., and Gerbasi, A. (2018). Leadership behavior and employee well-being: An integrated review and a future research agenda. *Leadersh. Q.* 29, 179–202.

Ingram, A. E., Lewis, M. W., Barton, S., and Gartner, W. B. (2016). Paradoxes and innovation in family firms: The role of paradoxical thinking. *Entrep. Theory Pract.* 40, 161–176.

International Labour Organization [ILO] (2022). *Workplace health promotion and well-being*. Available online at: https://www.ilo.org/safework/areasofwork/workplace-health-promotion-and-well-being/WCMS_118396/lang--en/index.htm (accessed November 10, 2022).

Jiang, L., and Lavaysse, L. M. (2018). Cognitive and affective job insecurity: A meta-analysis and a primary study. *J. Manag.* 44, 2307–2342.

Judge, T. A., Zhang, S. C., and Glerum, D. R. (2020). "Job satisfaction," in *Essentials of job attitudes and other workplace psychological constructs*, eds V. I. Sessa and N. A. Bowling (New York, NY: Routledge), 207–241.

Kalleberg, A. L. (2011). *Good jobs, bad jobs: The rise of polarized and precarious employment systems in the United States, 1970s-2000s*. New York, NY: Russell Sage Foundation.

Kjell, O. N., and Diener, E. (2021). Abbreviated three-item versions of the satisfaction with life scale and the harmony in life scale yield as strong psychometric properties as the original scales. *J. Pers. Assess.* 103, 183–194. doi: 10.1080/00223891.2020.1737093

Kopperud, K. H., Martinsen, Ø, and Humborstad, S. I. W. (2014). Engaging leaders in the eyes of the beholder: On the relationship between transformational leadership, work engagement, service climate, and self–other agreement. *J. Leadersh. Organ. Stud.* 21, 29–42.

Kuntz, J. R., Näswall, K., and Malinen, S. (2016). Resilient employees in resilient organizations: Flourishing beyond adversity. *Industr. Organ. Psychol.* 9, 456–462.

Langerak, J. B., Koen, J., and van Hooft, E. A. (2022). How to minimize job insecurity: The role of proactive and reactive coping over time. *J. Vocat. Behav.* 136:103729.

Lewis, M. W. (2000). Exploring paradox: Toward a more comprehensive guide. *Acad. Manag. Rev.* 25, 760–776.

Li, C., Lin, C. L., and Chin, T. (2022). How does the paradoxical leadership of cross-border e-commerce (CBEC) gig workers influence Chinese company performance: The role of psychological well-being. *Sustainability* 14:12307.

Li, Q., She, Z., and Yang, B. (2018). Promoting innovative performance in multidisciplinary teams: The roles of paradoxical leadership and team perspective taking. *Front. Psychol.* 9:1083. doi: 10.3389/fpsyg.2018.01083

Li, X., Xue, Y., Liang, H., and Yan, D. (2020). The impact of paradoxical leadership on employee voice behavior: A moderated mediation model. *Front. Psychol.* 11:537756. doi: 10.3389/fpsyg.2020.537756

Little, T. D., Cunningham, W. A., Shahar, G., and Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Struct. Equ. Model.* 9, 151–173.

Liu, T., and Pak, J. (2023). Does paradoxical leadership better predict employee outcomes than servant leadership? The differential effects on subordinate creativity and psychological need satisfaction. *Curr. Psychol.* 42, 1–15.

Locke, E. (1976). "The nature and causes of job satisfaction," in *Handbook of industrial and organizational psychology*, ed. M. Dunnette (Chicago: Rand McNally), 1297–1349.

Luthans, F., Avolio, B. J., Avey, J. B., and Norman, S. M. (2007). Positive psychological capital: Measurement and relationship with performance and satisfaction. *Pers. Psychol.* 60, 541–572.

Maitlis, S., and Sonenshein, S. (2010). Sensemaking in crisis and change: Inspiration and insights from Weick (1988). *J. Manag. Stud.* 47, 551–580.

Martins, L. L., Eddleston, K. A., and Veiga, J. F. (2002). Moderators of the relationship between work-family conflict and career satisfaction. *Acad. Manag. J.* 45, 399–409.

Mazzetti, G., Schaufeli, W. B., and Guglielmi, D. (2016). Are workaholism and work engagement in the eye of the beholder? *Eur. J. Psychol. Assess.* 34, 30–40.

McDaniel, B. T., O'Connor, K., and Drouin, M. (2021). Work-related technoference at home and feelings of work spillover, overload, life satisfaction and job satisfaction. *Int. J. Workplace Health Manag.* 14, 526–541.

McDonald, R. P., and Ho, M. H. R. (2002). Principles and practice in reporting structural equation analyses. *Psychol. Methods* 7:64.

Meng, X., Chenchen, N., Liang, F., and Liu, Y. O. (2021). Research on the influence of paradoxical leadership on compulsory organizational citizenship behavior. *Psychol. Res. Behav. Manag.* 14:1959. doi: 10.2147/PRBM.S318275

Moyes, G. D., Williams, P. A., and Koch, B. (2006). The effects of age and gender upon the perceptions of accounting professionals concerning their job satisfaction and work-related attributes. *Manager. Audit. J.* 21, 536–561.

Muthén, L. K., and Muthén, B. O. (2012). *Mplus user's guide*, Seventh Edn. Available online at: https://www.statmodel.com/download/ (accessed November 10, 2022).

Near, J. P., Smith, C. A., Rice, R. W., and Hunt, R. G. (1984). A comparison of work and nonwork predictors of life satisfaction. *Acad. Manag. J.* 27, 184–190.

Ng, T. W., Eby, L. T., Sorensen, K. L., and Feldman, D. C. (2005). Predictors of objective and subjective career success: A meta-analysis. *Pers. Psychol.* 58, 367–408.

Ngo, H. Y., and Li, H. (2015). Chinese traditionality and career success: Mediating roles of procedural justice and job insecurity. *Career Dev. Int.* 20, 627–645.

Nikolova, I., Caniëls, M. C., Schaufeli, W., and Semeijn, J. H. (2021). Disengaging leadership scale (Dls): Evidence of initial validity. *Int. J. Environ. Res. Public Health* 18:2824. doi: 10.3390/ijerph18062824

Nilsen, M., and Kongsvik, T. (2023). Health, safety, and well-being in platform-mediated work–a job demands and resources perspective. *Saf. Sci.* 163:106130.

Oishi, S., Diener, E., Lucas, R. E., and Suh, E. M. (2009). "Cross-cultural variations in predictors of life satisfaction: Perspectives from needs and values," in *Culture and Well-being*, ed. E. Diener (Dordrecht: Springer), 109–127. doi: 10.1186/s12913-016-1423-5

Oreg, S., and Berson, Y. (2019). Leaders' impact on organizational change: Bridging theoretical and methodological chasms. *Acad. Manag. Ann.* 13, 272–307.

Otto, K., Hoffmann-Biencourt, A., and Mohr, G. (2011). Is there a buffering effect of flexibility for job attitudes and work-related strain under conditions of high job insecurity and regional unemployment rate? *Econ. Industr. Democracy* 32, 609–630.

Park, N., Park, M., and Peterson, C. (2010). When is the search for meaning related to life satisfaction? *Appl. Psychol. Health WellBeing* 2, 1–13.

Pearce, C. L., Wassenaar, C. L., Berson, Y., and Tuval-Mashiach, R. (2019). Toward a theory of meta-paradoxical leadership. *Organ. Behav. Hum. Decis. Process.* 155, 31–41.

Podsakoff, P. M., MacKenzie, S. B., and Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annu. Rev. Psychol.* 63, 539–569.

Probst, G., Raisch, S., and Tushman, M. L. (2011). Ambidextrous leadership: Emerging challenges for business and HR leaders. *Organ. Dyn.* 40, 326–334.

Rosing, K., Frese, M., and Bausch, A. (2011). Explaining the heterogeneity of the leadership-innovation relationship: Ambidextrous leadership. *Leadersh. Q.* 22, 956–974.

Ryan, R. M., and Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *Am. Psychol.* 55, 68.

Salas-Vallina, A., Alegre, J., and López-Cabrales, Á (2021). The challenge of increasing employees' well-being and performance: How human resource management practices and engaging leadership work together toward reaching this goal. *Hum. Resour. Manag.* 60, 333–347.

Schad, J., Lewis, M. W., Raisch, S., and Smith, W. K. (2016). Paradox research in management science: Looking back to move forward. *Acad. Manag. Ann.* 10, 5–64.

Schaufeli, W. B. (2015). Engaging leadership in the job demands-resources model. *Career Dev. Int.* 20, 446–463.

Shao, Y., Nijstad, B. A., and Täuber, S. (2019). Creativity under workload pressure and integrative complexity: The double-edged sword of paradoxical leadership. *Organ. Behav. Hum. Decis. Process.* 155, 7–19.

Shehata, A. E., Khan, M. A., Khalid, R., Raza, M., and Selem, K. M. (2023). Consequences of paradoxical leadership in the hotel setting: Moderating role of work environment. *J. Hosp. Market. Manag.* 32, 670–693.

Shoss, M. K. (2017). Job insecurity: An integrative review and agenda for future research. *J. Manag.* 43, 1911–1939.

Smith, W. K., and Lewis, M. W. (2011). Toward a theory of paradox: A dynamic equilibrium model of organizing. *Acad. Manag. Rev.* 36, 381–403.

Sparr, J. L., van Knippenberg, D., and Kearney, E. (2022). Paradoxical leadership as sensegiving: Stimulating change-readiness and change-oriented performance. *Leadersh. Organ. Dev. J.* 43, 225–237.

Spector, P. E. (1997). *Job satisfaction: Application, assessment, causes, and consequences*. London: Sage.

Spurk, D., Abele, A. E., and Volmer, J. (2011). The career satisfaction scale: Longitudinal measurement invariance and latent growth analysis. *J. Occup. Organ. Psychol.* 84, 315–326. doi: 10.1016/j.heliyon.2023.e13918

Stjernberg, T., and Philips, A. (1993). Organizational innovations in a long-term perspective: Legitimacy and souls-of-fire as critical factors of change and viability. *Hum. Relat.* 46, 1193–1219.

Sverke, M., Hellgren, J., and Näswall, K. (2002). No security: A meta-analysis and review of job insecurity and its consequences. *J. Occup. Health Psychol.* 7:242.

Tuckey, M. R., Bakker, A. B., and Dollard, M. F. (2012). Empowering leaders optimize working conditions for engagement: A multilevel study. *J. Occup. Health Psychol.* 17, 15–27. doi: 10.1037/a0025942

Ungar, M. (2021). "Organizational resilience: Complex, multisystemic processes during periods of stress," in *The SAGE handbook of organizational wellbeing*, eds T. Wall, C. L. Cooper, and P. Brough (London: Sage), 139–155.

Van den Broeck, A., De Cuyper, N., De Witte, H., and Vansteenkiste, M. (2010). Not all job demands are equal: Differentiating job hindrances and job challenges in the job demands–resources model. *Eur. J. Work Organ. Psychol.* 19, 735–759.

Van den Broeck, A., Ferris, D. L., Chang, C. H., and Rosen, C. C. (2016). A review of self-determination theory's basic psychological needs at work. *J. Manag.* 42, 1195–1229.

Vansteenkiste, M., Lens, W., and Deci, E. L. (2006). Intrinsic versus extrinsic goal contents in self-determination theory: Another look at the quality of academic motivation. *Educ. Psychol.* 41, 19–31.

Vansteenkiste, M., Ryan, R. M., and Soenens, B. (2020). Basic psychological need theory: Advancements, critical themes, and future directions. *Motiv. Emot.* 44, 1–31.

Walker, G. J., and Kono, S. (2018). The effects of basic psychological need satisfaction during leisure and paid work on global life satisfaction. *J. Posit. Psychol.* 13, 36–47.

Weick, K. E. (1995). *Sensemaking in organizations*. Thousand Oaks, CA: Sage Publications.

World Health Organization [WHO] and International Labour Organization [ILO] (2022). *Mental health at work; Policy brief*. Available online at: https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/publication/wcms_856976.pdf (accessed November 10, 2022).

Xue, Y., Li, X., Liang, H., and Li, Y. (2020). How does paradoxical leadership affect employees' voice behaviors in workplace? A leader-member exchange perspective. *Int. J. Environ. Res. Public Health* 17:1162. doi: 10.3390/ijerph17041162

Yam, K. C., Tang, P. M., Jackson, J. C., Su, R., and Gray, K. (2023). The rise of robots increases job insecurity and maladaptive workplace behaviors: Multimethod evidence. *J. Appl. Psychol.* 108:850. doi: 10.1037/apl0001045

Yang, Y., Li, Z., Liang, L., and Zhang, X. (2021). Why and when paradoxical leader behavior impact employee creativity: Thriving at work and psychological safety. *Curr. Psychol.* 40, 1911–1922.

Yukl, G. (2012). Effective leadership behavior: What we know and what questions need more attention. *Acad. Manag. Perspect.* 26, 66–85.

Zaccaro, S. J., Rittman, A. L., and Marks, M. A. (2001). Team leadership. *Leadersh. Q.* 12, 451–483.

Zhang, U., David, A., Waldman, Y., and Xiao-Bei, L. (2015). Paradoxical leader behaviors in people management: Antecedents and consequences. *Acad. Manag. J.* 58, 538–566. doi: 10.1080/14616730500365944

Zhang, W., Liao, S., Liao, J., and Zheng, Q. (2021). Paradoxical leadership and employee task performance: A sense-making perspective. *Front. Psychol.* 12:753116. doi: 10.3389/fpsyg.2021.753116

Zhang, Y., Zhang, Y., Law, K. S., and Zhou, J. (2022). Paradoxical leadership, subjective ambivalence, and employee creativity: Effects of employee holistic thinking. *J. Manag. Stud.* 59, 695–723.

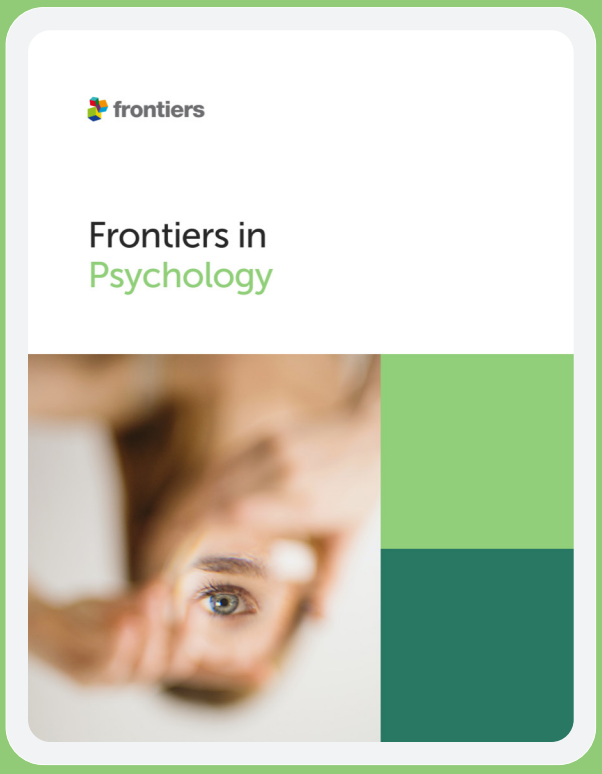
Frontiers in Psychology

Paving the way for a greater understanding of human behavior

The most cited journal in its field, exploring psychological sciences - from clinical research to cognitive science, from imaging studies to human factors, and from animal cognition to social psychology.

Discover the latest Research Topics

See more →



Frontiers

Avenue du Tribunal-Fédéral 34
1005 Lausanne, Switzerland
frontiersin.org

Contact us

+41 (0)21 510 17 00
frontiersin.org/about/contact