

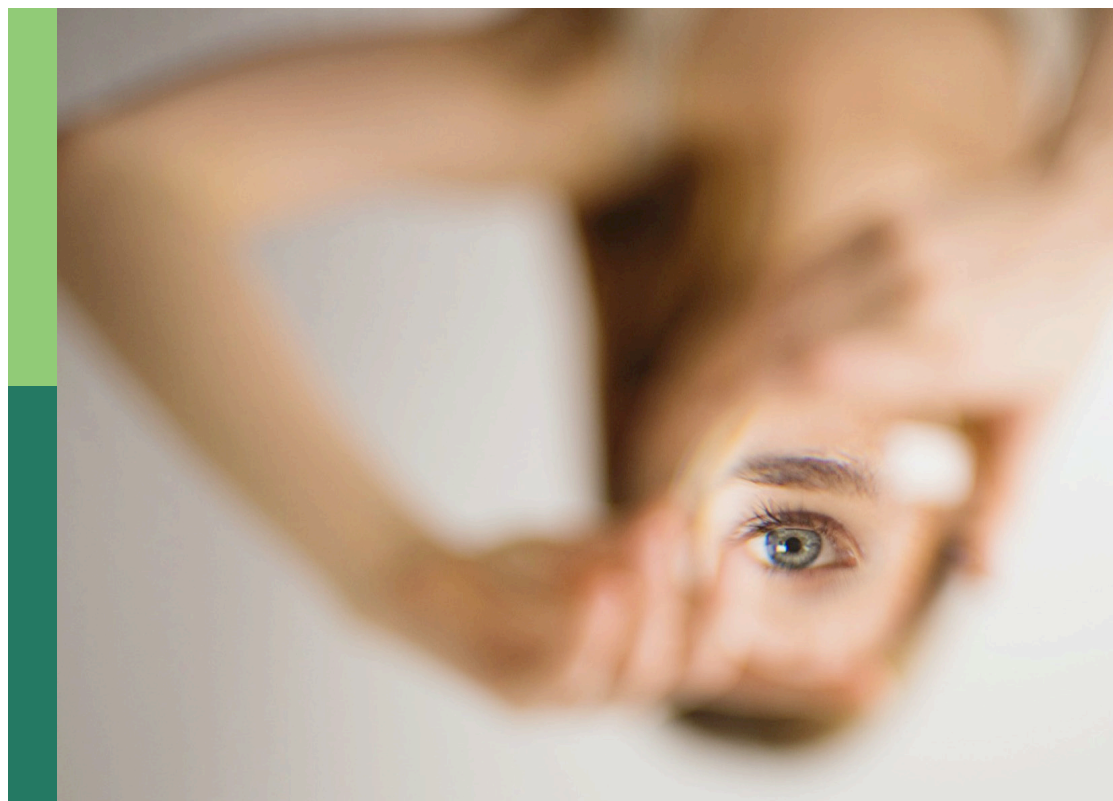
Social sustainability at work: A key to sustainable development in business

Edited by

Francoise Contreras, Ghulam Abid and Susanne Rank

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Social sustainability at work: A key to sustainable development in business

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Editorial: Social sustainability at work: A key to sustainable development in business

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KEYWORDS

social sustainability at work, social development in business, CSR, social performance, green HRM

Editorial on the Research Topic

Social sustainability at work: A key to sustainable development in business

Introduction

The Sustainable Development Goals (SDG) were adopted by the UN in 2015 as part of the 2030 Agenda for Sustainable Development [United Nations (UN), 2022]: “These SDGs are a universal call to action to end poverty, protect the planet and improve the lives and prospects of everyone, everywhere”. The SDGs are first mentioned in the Brundtland Report in 1987 as sustainable development should “meet their needs without compromising the ability of future generations to meet their own needs”. Thirty-five years later, the climate change became irreversible with a dramatic impact on poverty, emigration from hot regions (e.g., Madagascar), and future social conflicts worldwide. Currently, [Randers et al. \(2018\)](#) provide four scenarios and the subsequent consequences for societies within given planetary boundaries and proactive measures by 2030 on limiting the global warming below 2°C. The rapid industrialization, global warming, the health crisis, and the political instability of the world, among other important recent events, show the urgent necessity of having sustainable companies ([Okumus et al., 2019](#); [Duric and Potocnik Topler, 2021](#)). This explains the broad scope of sustainable development with SDGs and their call for urgency, especially in the field of business and management.

In the business context, social sustainability is key for sustainable development and serves as a measure of people’s wellbeing and social engagement within the organization and the community, as the current climate transformation largely impacts social issues in society like poverty or migration to healthy climate zones. Social sustainability applied to organizations contributes to employees’ wellbeing and health through the construction of sustainable places to work characterized by positive work environments as the major focus of SDGs, mainly those related to good health and wellbeing (SDG 3) as part of an integrated approach, decent work and economic growth (SDG 8), and gender equality

(SDG 5, United Nations, 2015). However, these goals are closely interlinked with one another. They share as a concern and goal the call for help for a lasting planet with better quality of life standards for its inhabitants.

Within this frame of reference, business environment and organizational contexts become particularly relevant in making an important contribution to sustainability. Nowadays, companies have to operate in a complex environment with new contingencies and challenges to be competitive and to last. There is no doubt about the extent to which the pandemic changed the way people work and live (Rigotti et al., 2021). Currently, there is an accelerated digital transformation that has changed and is changing the way companies work and should be managed (Hanelt et al., 2021). However, it is important to acknowledge that the COVID-19 pandemic health crisis not only brought difficulties, it also taught us new ways to live and work. The crisis offers huge opportunities that can make companies more competitive if considered. For example, companies are currently more aware of the importance of creating inclusive work environments, resulting in a high innovation rate through a diverse workforce. Framed in social responsibility, organizations have the opportunity to contribute not only to mitigating the difficult conditions of forced migration the crisis has led to, but to also enhancing their innovation and creativity through inclusive work environments. Thus, innovation makes companies globally competitive in a highly complex and uncertain business environment while promoting a better society (Voegtlin et al., 2022).

In the work context, there is a consensus among researchers about the sparse considerations and commitments that have been presented toward social sustainability, but this approach has received less attention (Torkayesh et al., 2021), because the sustainable perspective has underestimated the human and social factors that such a perspective involved (Magis and Shinn, 2008; Vallance et al., 2011). Social sustainability includes people's health and safety, community engagement, philanthropic actions, corporate citizenship, corporate governance, the supply chain, and employee working conditions (Hedstrom, 2018). We as editors propose that social science can be crucial to supporting long-term sustainability in business and healthy lives at work, as the research articles of this Research Topic show.

In this context, organizations can contribute to achieving the SDGs through ethical behavior and corporate social responsibility (CSR, Carroll, 1979). CSR is based on the stakeholder approach to sustainable business by achieving an obligation to internal vs. external stakeholders, impacting our society and our environment (Carroll, 1979). In academic reviews (Kolk, 2016; Pisani et al., 2017; Turner et al., 2019), the impact of CSR pillars on business outcomes (employees, customers, and financial) is given. Beyond profit making, companies have to act collectively as responsible social actors that ethically engage with their internal vs. external stakeholders, comply with environmental and labor standards, and respect

governance, politics, and customs. Although companies have to integrate social and environmental factors in their financial decisions, contributing to building a fairer economy with a local and global sustainable impact might be a radical mental shift and learning journey for CEOs (Business and Sustainable Development Commission, 2017). Thus, the key challenge is how to globally tackle and balance the economic success with environmental and social demands.

Furthermore, organizational and employee outcomes could be fostered by sustainable business strategies, policies, and practices aimed toward this end. The benefits of CSR framework result on the organizational level in higher organizational commitment, work engagement, increased social-communal, green, and economic performance, and organizational citizenship. If these social sustainability strategies are implemented by Human Resource Management (HRM), high employee performance, individual psychological empowerment, and wellbeing are developed on the individual level (Chams and García-Blandón, 2019; Turner et al., 2019; Wang et al., 2020; Paulet et al., 2021). Aust et al. (2020) pointed out that specific sustainable HRM practices affect organizational vs. individual behavior by an outside-in approach to humans in society and to the company, and finally support the SDG (United Nations, 2022).

Studies overview for the Research Topic "social sustainability at work and in business"

In our Research Topic, business success and organizational behavior from the social sustainability approach by teams and individuals in organizations are addressed from different research perspectives in various countries. Our international colleagues enrich this Research Topic by contributing to different foci on sustainable development, especially on creativity, innovation, wellbeing, mental health, work engagement, and CSR. This Research Topic comprises 16 articles that address sustainable development in the business field from different approaches, which are briefly introduced.

From a wider perspective, in their research on "*The psychological concept of social sustainability in the workplace from the perspective of sustainable goals: A systematic review*" Kobal Grum and Babnik conducted a systematic literature review to understand the phenomenon of social sustainability at the workplace framed in SDGs. Based on the main topics identified from their analysis, they present a theoretical model describing the psychological concept of social sustainability at the workplace from the perspective of SDGs.

At the organizational level, in the paper "*Talent acquisition and technology: A step toward sustainable development*" Rehman, Ullah et al. offer a conceptual and empirical model of employee recruitment through the use of social media and information

technology as a step toward sustainable development. Following this level of analysis, Baykal and Bayraktar conducted research on “Effects of green human resources management practices on work engagement: Mediating effect of psychological ownership”. The authors found that this green HRM approach can lead to higher employee work engagement. Likewise, they verified the mediator role of psychological ownership in such a relationship. In this same vein, in the article “Mediating role of green supply chain management between lean manufacturing practices and sustainable performance” Awan et al. analyzed green supply chain management. They demonstrate that process and equipment, product design, supplier relationships, and customer relationships have a significant effect on sustainable performance. Innovation was also studied from this same organizational approach. In the study “Linkages between knowledge management process and corporate sustainable performance of Chinese SMEs: mediating the role of frugal innovation” Kun analyzed the effect of the knowledge management process on sustainable corporate performance with the association of frugal innovation. The author found that all dimensions of knowledge management have a significant impact on corporate sustainable performance. In addition, frugal innovation has a significant impact on corporate sustainable performance.

As a crucial factor of business sustainability, CSR was addressed by Wang and Bian in the study of “Analyzing the role of corporate social responsibility for sustainable environmental performance: Mediating roles of environmental strategy and environmental outcomes”. Among other findings, CSR influences environmental performance and is positively correlated with environmental strategy and environmental outcomes, which in turn improve environmental performance. Likewise, in the paper “Fostering advocacy behavior of employees: A CSR perspective from the hospitality sector” Ahmad et al. provide evidence on how CSR perceptions of hotel employees can drive their advocacy behavior. As they proposed, hotels can improve their reputation by converting their employees into advocates by investing in hotels’ CSR commitment to enhance employees’ engagement in their advocacy behavior. Finally, also linked to CSR, in his research “Responsible leadership and affective organizational commitment: The mediating effect of corporate social responsibility” Piñeros Espinosa found that CSR mediated the influence of responsible leadership on affective organizational commitment. He proposes responsible leadership as a valid mechanism to develop CSR practices and finally increase the employees’ affective organizational commitment.

Further studies focus on the negative employee experiences that can affect their wellbeing. In this regard, in his research paper on “Impact of work demand constraints on psychological distress through workplace bullying: A moderated-mediation model” Naseem demonstrated that work demand constraints play a significant role in workplace bullying. Thus, this bullying heightens the employees’ psychological distress. Additionally,

violence against women also was studied. In the study about “Effects of intimate partner violence against women in international micro and small enterprises relationships: The mediator role of capabilities” Ponce-Gómez et al. analyzed a group of women owners of exporting MSEs in Peru: Intimate Partner Violence Against Women (IPVAW) influences the export capabilities and the quality of the relationships that women maintain with importers and suppliers. Finally, in the study on “Impact of COVID-19 and consortium factors on mental health: Role of emotional labor strategies in achieving sustainable development goals” Rehman, Hamza et al. address the United Nation’s SDGs related to decent work and economic growth. They highlighted the importance of maintaining employees’ mental health and psychological stability.

Moreover, Santana-Martins et al. focused how leadership impacts employees’ wellbeing and organizational outcomes in their article “Employees’ emotional awareness as an antecedent of organizational commitment—The mediating role of affective commitment to the leader”. As affective commitment in the workplace is crucial to businesses’ sustainability, they analyze employees’ emotional awareness as an antecedent of commitment and probe the mediating role of affective commitment in this relationship. In the same vein, in the study on “Linking authentic leadership to transactive memory system, team innovativeness and selling performance: A multilevel investigation” Shahzad, Iqbal, Akbar et al. analyze the impact of authentic leadership on salespersons’ behavior in a B2B selling context. The authors found that authentic leadership behavior has a stronger relationship with the transactive memory system, innovative work behavior, and customer-directed OCB. Furthermore, in their next study on “The role of transformational leadership on firm performance: Mediating effect of corporate sustainability and moderating effect of knowledge-sharing” Shahzad, Iqbal, Jan et al. demonstrated that knowledge-sharing has a moderating role in the relationship between transformational leadership and firm performance. They highlight the significant role of leadership style on firm performance and knowledge-sharing culture. In a further study on the “Eminence of leader humility for follower creativity during COVID-19: The role of self-efficacy and proactive personality” Asghar et al. highlight the importance of leader humility for improving creativity during the COVID-19 pandemic. Finally, the economic perspective was addressed by Farooq et al. in their study on the “Surge in economic growth of Pakistan: A case study of China Pakistan economic corridor”. They analyze the China-Pakistan Economic Corridor (CPEC) and its impact on the economic growth of Pakistan by analyzing macroeconomic variables. The key results show that foreign direct investment and human capital investment have a positive effect on the economic growth of Pakistan.

Finally, we highlighted the importance of social and environmental sustainability, as Kemp et al. (2022) say that

“the common strength and benefit of investing in sustainable behavior in all organizations is the mitigation of the global high risk of failing to save our planet with respect to the lives of our future generations and children”. We hope the readers enjoy the different research perspectives while reading these articles and findings, and, furthermore, that these findings inspire the implementation of some sustainable actions in organizations now.

Author contributions

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

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Mediating Role of Green Supply Chain Management Between Lean Manufacturing Practices and Sustainable Performance

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Manufacturing companies in today's industrial world are seeking to use the new manufacturing process methods. The primary goal of corporations is to achieve optimum production while deploying minimal capital. The fundamental purpose of this study is to examine the influence of various lean manufacturing practices on the sustainability performance of companies and the mediating role of green supply chain management (GSCM). The data was gathered using questionnaires from 250 Pakistani manufacturing firms and analyzed using AMOS 25. Results demonstrate that process and equipment, product design, supplier relationships, and customer relationships significantly affect sustainable performance. It is also recognized that Green Supply Chain Management mediates the interaction between HR processes, product design, supplier relationship, customer relationship, and environmental performance. The findings of this study will enable managers and decision-makers of manufacturing companies to increase sustainable efficiency and reduce waste through the use of lean manufacturing and GSCM implementation.

Keywords: lean practices, green supply chain management, sustainable performance, social sustainability, Pakistan

INTRODUCTION

Many characteristics describe the management of the supply chain by various parameters. The parameters include intense competition, an increased requirement for cleaner products, environmental maintenance problems, and the pressure to decrease and handle waste problems. Customers' primary demand is to use the "cleaner" products to reduce waste, environmental decline, and problems related to contamination and pollution (Henao et al., 2019). "Vision for environmental sustainability" type-projects are required for maintaining a difficult advantage in the supply chain department. The main aim of prominent and successful businesses is to combine the two dominant strategies of "lean" and "green" for the extraction of waste and scrap produced as a part of routine operational processes. Notable cost savings for supply chain functions may be significant by merging lean and green thinking to identify, reduce, and remove the excess usage of resources and the production waste (Iranmanesh et al., 2019).

Lean manufacturing is defined as “a procedure always designed to lower the costs and waste products in manufacturing firms.” Huo et al. (2019) say that lean manufacturing, in their words, is “a business method and procedure that can improve the business performance for customers’ satisfaction and improve the line.” Research has proven that lean manufacturing has prominent effects on the firms’ manufacturing and operation. There are different central practices present, which are the factors for the formation of lean manufacturing (Hao et al., 2021). Researchers are working on lean manufacturing and are keen to find other best ways for lean manufacturing. They have recommended different lean practices for industries such as those surrounding electronics and the automotive sector. Rathore et al. (2020) and many other researchers identified many main areas for lean production, and they suggested that these lean practices can be implemented in different manufacturing sectors.

Different research types have revealed the interconnection between lean manufacturing and environmental performance and performance related to finance. These researches have two main restrictions (Huo et al., 2019). First, it is noticed that in past literature, there is less focus on the impact of lean manufacturing practices on the sustainability performance of the firm. To work within a competitive environment and keep balance in the working environment, manufacturing organizations should have equilibrium in their environmental, economic, and social performance (Chavez et al., 2020). The manufactures must have the capability to learn that lean practices include noticeable positive impacts on different parameters of maintenance and not only a single parameter. Secondly, most of the research done previously has conducted a test that has the effect of overall lean manufacturing on organization performance (Kovilage, 2021). The main picture that shows the impact on firm performance is indicated by the interconnection between sustainable performance and these lean manufacturing practices with multiple branches in different areas of the firm (Habidin et al., 2013).

In recent years, the fast industrial refurbishment has made its way to have negative impacts related to environmental issues, including greenhouse gas emissions, poisonous pollution, and chemical overflow (Henao et al., 2019). In acknowledging the growing global environmental awareness, GSCM has made itself clear as a point that takes the maintainable elements and combined with the environmental issues for the upstream and downstream supply chain to have intra-and inter-firm management (Hartini and Ciptomulyono, 2015). To reduce the environmental waste in organizations and improve ecological performance, the green prototype intentionally decreases environmental issues and disputable ecological impacts. Researchers and practitioners are focusing on and giving their intentions on environmentally conscious business practices. Iranmanesh et al. (2019) showed the lean scheme’s effect on all the phases of a product’s life series. By raising the ecological efficiency and decreasing the environmental insecurity, issues, and impact, lean scheme on the performance of GSCM has risen to the surface as a new and prominent prototype for projects to achieve the objectives of profitable yields and market share (Pearce et al., 2018).

This paper has a contribution to the literature and research in two possible points. Firstly, a mindful and contextual structure was disclosed, connecting the six lean practices and sustainable performance (environmental, financial, and social) of manufacturing firms. Secondly, we logically explain or assess the mediating role of GSCM between the connection of lean manufacturing and sustainable performance. There is no mediating role defined in the literature. Therefore, it is compulsory to renew the rational understanding of the relationship between lean manufacturing practices and sustainable performance and GSCM. This paper also has a remarkable contribution for managers. It can guide managers to adopt the best lean approach to increase and improve the sustainable performance of their firm by implementing GSCM.

LITERATURE REVIEW

Lean Manufacturing Practices and Sustainable Performance

Kamble et al. (2020) used value stream mapping (VSM) to give evidence of the development of lean (waste elimination) manufacturing. The research of the authors compares the current state and future roadmaps for knowledge about the advantages of lean manufacturing, and their research has clearly shown and predicted the value of steam metrics.

Another parameter of maintenance and sustainability is the interconnection between lean manufacturing and financial performance as discussed according to the previous research. Orji and Liu (2020) described a more significant contribution to the financial returns. There will be more cost reduction through waste reduction because of the endowment to the environment by lean manufacturing. According to Hussain et al. (2019), lean manufacturing also provides information on the importance of pollution reduction and contributes to financial performance besides reducing waste management costs. There is a positive response to lean manufacturing and financial performance in the research article (Burawat, 2019).

Social performance is another perspective of maintenance, and besides the requirement of lean manufacturing, there is also demand for social performance by customers for improving the financial and environmental results (Sajan et al., 2017). Research must be done on social responsibility along with lean manufacturing to emphasize their importance. In some literature, there is a concept about lean manufacturing that reduces stress, increases responsible autonomy, and leads to some inborn motivation. It also leads to some passionate work (Ben Ruben et al., 2019).

Green Supply Chain Management

GSCM is research mainly aimed to merge the environmental requirements into supply chain management options. This was the first and fundamental proposal given by Michigan State University in 1996. Bai et al. (2019) wanted to combine the lean manipulation efforts with financial performance as identified by awards and stock market returns. Lean management initiatives described the positive and negative results for market gains and the cost savings. There are some mixed results, as shown by

lean management and financial performances. There are some identical facts described according to Vinodh et al. (2016) as matching the above-described results. There are some positively associated market reactions for the munificent environmental gifts. There are also negative impacts for voluntary emissions depletion, and ISO 14001 certifications are also related to positive market reactions (Helleno et al., 2017). This research type is related to the markets having different responses for different categories of lean inventiveness. Vanichchinchai (2019) suggested that the implementation of lean inventiveness could remove or lessen unseen waste and unproductive operations. They strengthen the overlaps and regularity with the management programs' policies and technologies, skeletal systems, and other programs related to qualitative management.

Hartini and Ciptomulyono (2015) claimed that there are five different parameters of GSCM, including other strategic plans like lean tasks, lean format, lean production, reverse logistics, and waste manipulation plans. This literature is concerned with the issues and has a short introduction about the management plans related to the supply chain field and a brief description of the GSCM discipline, lean designs, and lean operations. The paper also emphasizes the importance of lean processes for the motives of the organization. Through their research, Vinodh et al. (2016) depicted that green and lean principles have a significant contribution toward pollution control. Implementing both projects in the same period can contribute more toward the performance of operations than implementing the two sequentially. They can solve issues and have restrictions on practices. The research of Huo et al. (2019) is based on the manufacturing sector of Asian Emerging Economics (AEEs) to study the interconnection between GSCM practices and organizational performance. The findings revealed the fact that apart from the better understanding of the main three parameters: economic, environmental, and social areas, the GSCM practices-performance relationships are greatly moderated by industrial facts such that their type, organization structure and size, certification related to ISO, and the export orientation. This main aim of this literature is to step in and start updating the academic field by acquiring the meta-analysis mode for confirming the GSCM practice presentation relationships in the production sector of AEE as the meta-analysis technique is not yet applied in the management of the supply chain. Moreover, this research study also motivates managers and policymakers to adopt GSCM practices for improving firm performance (Singh et al., 2020).

Haiyun et al. (2021) suggested that lean practice contributes to combating global warming as it is an asset in decreasing the international factors of production, i.e., pollution. Much research and study results have proved that lean operations and transport have successfully reduced pollution and increased efficiency. This primary environmental concern is to limit the excesses of carbon dioxide emission, and these lean practices have made it possible through higher usage of resources in a short period. Bhatia and Gangwani (2021) proposed an idea to estimate and judge the progress or development of businesses in terms of lean implementation. For this estimation, ~5 different organizations were considered for the case study related to the verification

of the conceptual framework. This conduction proved that the initiatives taken for the conduction are appropriate for the lean and green framework. These results were of higher scores, which proved a good interconnection between green production and lean production (Stekelorum et al., 2021).

Relationship Between Process and Equipment and Sustainable Performance

Some representatives have the intention of developing a regular and streamlined flow for the manufacturing process. These are the processes and equipment which show improvement capabilities, such as the usage of equipment that is "error-proof," cycle time reduction, availability, and the assurance of machines (Mathiyazhagan et al., 2021). Waste material and defects are developed as a result of incorrect processing and over-processing. False processing and over-processing in machinery result in high-risk materials, an increase in water consumption, and the depletion of energy. According to Tripathi et al. (2021), that the above-mentioned proves and equipment have a better effect as they have the focal points related to the development of a better environment and also an asset in the identification of spills and leaks and help to decrease the defects and energy usage by depletion of pollution. Many benefits have been observed as a result of the implementation of process and equipment practices (Chavez et al., 2020). The asset is the lack of water and energy usage. Along with that, they have better effects on the activities of the firm, which leads to the improvement in the environment of the firm and helps provide a healthy environment. Therefore, it is said according to the hypothesis that:

H1: Process and Equipment have a significant impact on Sustainable Performance.

Relationship Between Planning and Control and Sustainable Performance

Scheduling strategies are linked with the planning and control practices in lean manufacturing to manufacture and coordinate market demand. There are many factors that are assets to the achievement of a higher production rate (Sakthi Nagaraj and Jeyapaul, 2020). The main areas of waste are the scheduling and depletions in the initial materials and workforce usage, which are the critical concern of lean planning and control. The primary concern of effective schedules gives effective results. The smoother flow of production, which is obtained as the elimination of imbalances in the production line, is also the best result of small lot sizing (Iqbal et al., 2020). The depletion of waste from overproduction and the reduction in storage is also possible as the consequences of the methods such as Kanban and lot size depletion. The delivery time is not being affected by the implementation of lean and control practices. They help in the diminution of materials and components that are part of the manufacturing process. Jermstipparsert et al. (2020) also suggested that the pull advancement significantly reduces waste caused by the damaged products and minimizes the work process and floor space utilization. Hence, the above-mentioned statement that the implementation could minimize process waste

and fault material of planning and control practices. Accordingly, the following hypothesis is posited:

H2: Planning and Control has a significant impact on Sustainable Performance.

Relationship Between HR Practice and Sustainable Performance

The significant development of the proper work atmosphere and human capital evolution results from HR practices' best implementation (Rathore et al., 2020). The lean objectives are employees' authority, involvement, autonomous problem solving, self-directed work teams, problem-solving groups, and formal training plans. HR is the basis of quality enhancement programs that are founded as the result of lean manufacturing implementation. Kumar et al. (2020) showed that HR has a prominent effect on pollution and waste depletion. If the organization has trained and self-disciplined employees, it can have better usage of resources and efficient waste reduction. An organization's financial performance can be improved by providing the employees the authority to take action for the reduction of waste and pollution, which is only applicable by the implementation of HR. This leads to the following hypothesis:

H3: HR Practices has a significant impact on Sustainable Performance.

Relationship Between Product Design and Sustainable Performance

Multifunctional pattern teams, design for production, product modularization, and parts of some high merit are the item designs implemented in lean manufacturing (Jamil et al., 2021a). This product design's primary concern is to provide easy access for the manufacturing of product maintenance by decreasing the material usage that results in the smooth and linear manufacturing process and makes the best use of firms' resources (Sahu et al., 2020). This product design is also an asset in depressing power usage by making product design with a joined-up part of the current production process. For the best and most effective achievement of this, all waste materials must be extracted. Buer et al. (2021) invented a positive connection between the design format and firms; economic results. This leads to the following hypothesis:

H4: Product Design has a significant impact on Sustainable Performance.

Relationship Between Supplier Relationship and Sustainable Performance

Supplier Relationship is concerned with the dealings of suppliers regarding several tasks such as concerns about quality, ensuring just-in-time delivery, long term interconnection, and supplier concern about the product format and evolution proves to respond to the suppliers' performance (Naseem et al., 2020). There is importance for implementing supplier relationship practices such as face-to-face decisions and transmission related to the production, which is the primary concern of firms for solving the supplier performance issues. If these issues

are solved, then this is an asset to achieve a certain level of performance (Mellado and Lou, 2020). Best environmental, social, and financial performance is possible by developing innovative technologies, which can be possible by developing relationships with the supplier. The development of productivity and environmental performance is also possible through the implementation of supplier relationships. Less energy usage, fewer defects, and waste reduction are possible if there are supplier interconnection best practices, as mentioned by Yadav et al. (2020). This results in better and more compatible enhancement. Closer interconnection with suppliers provides a chance to increase the suppliers' accomplishments, which can assist in developing the best environmental performance through innovative practices and materials. Therefore, it is hypothesized that

H5: Supplier Relationship practices have a significant impact on Sustainable Performance.

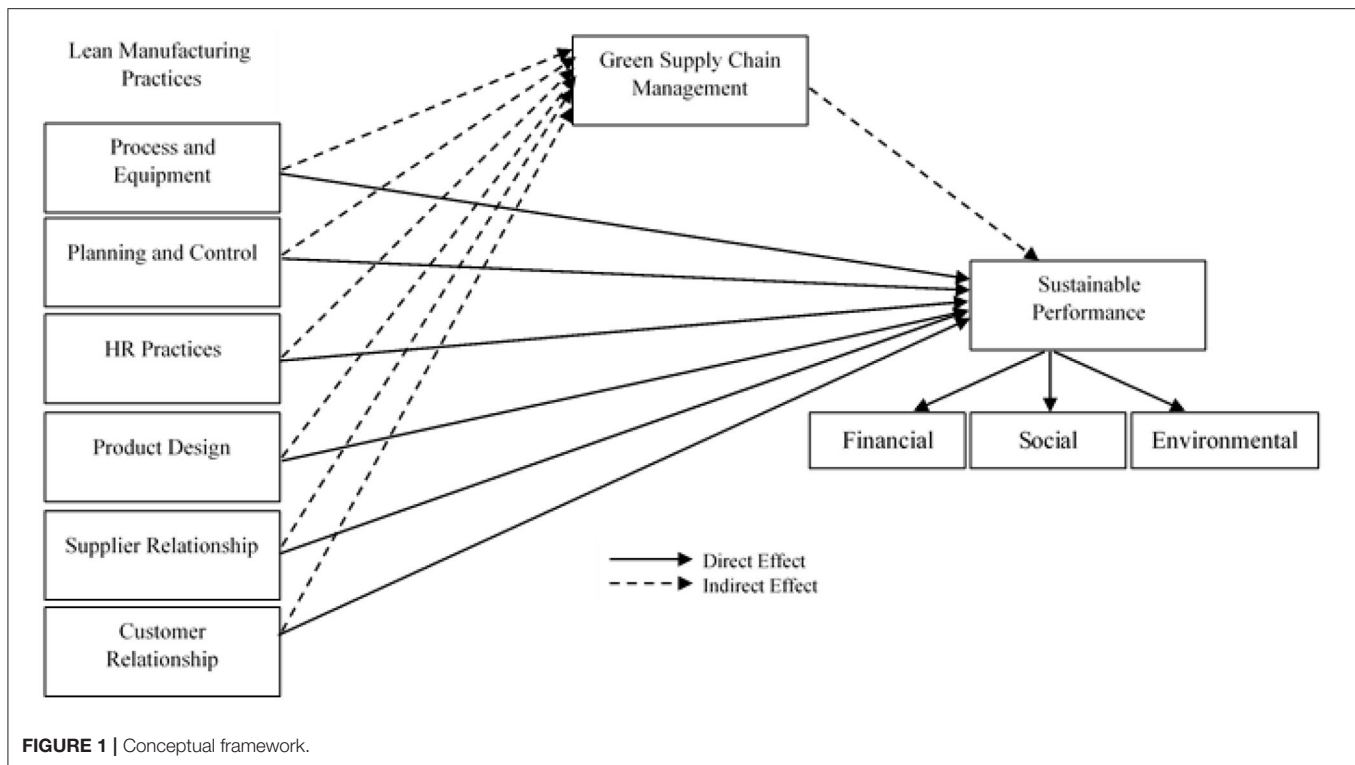
Relationship Between Customer Relationship and Sustainable Performance

The firm aims to develop long-term relationships with the customers to increase customer satisfaction and manage their complaints, and this is applicable by the implementation of effective customer relationships (Gul et al., 2021). What are the needs of the customer? And how the loyalty products, services, and the process can be provided? The answer to these issues is possible through a close relationship with the customers involving their opinions on product design and other information related to the output of the firm. Loyalty products and services mark a differentiation from other providers and thus also add value. Customers play an important and efficient role in developing innovative manufacturing systems, which led to the development of the lean manufacturing concept (Jamil et al., 2021b). Good customer relationships lead to the importance of the dissemination of environmental and social manufacturing practices that can improve social and ecological performance. The importance of social and environmental practices strategies is the need for higher accounts and is highly recommended by the customers. A closer relationship between the suppliers and customers is possible and accessible by providing clear production, as indicated by Mohsin et al. (2021). The enhancement and improvement in the social, environmental, and financial performance are possible by the interlinkage of suppliers, workers, and customers for the study, development, and partnership. As such, the following hypothesis is developed:

H6: Customer Relationship has a significant impact on Sustainable Performance.

The Mediating Role of Green Supply Chain Management

As a result of lean manufacturing and more efficient procedures, there has been a significant decrease in emissions from transportation and production activities. Carbon dioxide is a greenhouse gas, which contributes to climate change and is



a worldwide issue. Reducing the amount of carbon dioxide released into the atmosphere is one way to combat global warming and pollution (Jamil et al., 2021b). As a consequence of reducing waste, lean manufacturing may assist in reducing pollution since it reduces cycle times and increases resource utilization. To evaluate firms in terms of their supply chain implementation, Sarfraz et al. (2021) suggested an evaluation system. The conceptual framework was validated by conducting a multiple case study of five distinct manufacturing companies. The research found that organizations with high ratings have a solid relationship between green and lean implementation. According to the findings, the conceptual framework's green and lean assessment framework is well-represented by its chosen projects.

The main achievement and the goal of lean management are to provide innovative products and services useful in quality and lesser in cost. According to this lean context, waste is described as "something other than the required amount of equipment, stuff like materials, parts, resources, and time (Dunn et al., 2020). These are important parameters for adding value to the product." Transport, inventory, motion, waiting, over-processing, and overproduction are waste parameters that are included in the forms of waste. These are all non-value-adding operations that impact quality and performance, but customers are not concerned with such problems. Organizations working on lean practices have implemented these practices in different sectors to improve efficiency and competitiveness (Viles et al., 2021). The GSCM has many benefits, and there is proof in this literature regarding the benefits of lean practices. The benefits of these lean practices can be derived by spreading lean practices through lean

practices. According to Ikumapayi et al. (2020), sustainability is the next productivity stage of lean management to encourage and motivate external waste to decrease the GSCM and improve social conditions globally. Lean practice can be implemented in the industries and across the supply chain, aiming for orderly distribution and delivery (Tiwari et al., 2020). This can eliminate waste, and improve the quality and customer service at all stages of the supply chain. Hence, we proposed the following hypotheses (see Figure 1 for all relationships).

H7: GSCM significantly mediates the relationship of (a) Process equipment, (b) Manufacturing Planning, (c) Product Design, (d) Supplier Relationship, and (e) Customer Relationship on Sustainable Performance.

METHODS

Data Collection and Sample Size

The study's sampling frame includes all manufacturing units in Pakistan that have implemented lean practices within the production process. A well-structured questionnaire was delivered to the general manager, production managers, and the senior manager directly involved with the manufacturing process. They have the best knowledge and experience to respond to lean practices. As lean is a multidimensional approach, different departmental managers such as the HR department, customer care department, supply chain, logistics, and engineering department were involved in filling the questionnaire. The list of manufacturing units was obtained from the Securities and Exchange Commission of Pakistan (SECP).

By keeping in view the sample size, the study used a well-reputed and globally implemented sample size formula focusing on a finite population introduced by Krejcie and Morgan (1970). Furthermore, to improve the generalizability of the findings, questionnaires were delivered to 350 targeted respondents in different manufacturing firms, from which 250 complete and usable questionnaires were received back with a response rate of 71%.

Descriptive analysis shows that 40% of the respondents were from the textile sector, 15% were pharmaceutical, 15% were from food processing, 10% were from the chemical sector, 10% were from the automotive sector, and 10 % were from others.

Questionnaire and Measurements

A comprehensive literature review was conducted to ascertain the items observed regarding the evaluation of the relationship between latent variables. The questionnaire was developed and comprised of 72 questions in eight parts by adopting items from different studies. On a Likert scale from one to five on all item scales, respondents had to assess their viewpoint.

Lean Practices were assessed with items taken from the studies of Panizzolo (1998) on a five-point Likert scale of one (not at all) to five (Very High). The scale was made up of thirty items. Furthermore, GSCM was evaluated with items taken from the study of Singh et al. (2020) on a five-point Likert scale of one (not at all) to five (Very High). The scale was composed of 25 items. Also, sustainable performance (Environmental performance, social performance, and financial performance) was evaluated on a five-point Likert scale, one (strongly disagree) to five (strongly agree) with 17 items adopted from Zailani et al. (2015). See Appendix A for questionnaire items.

RESULTS

In AMOS 25.0, we ran structural equation modeling (SEM) to validate the proposed measurement and structural model of the study. The reason for running AMOS SEM is that AMOS is a powerful tool for data analysis that performs factor analysis and regression analysis simultaneously (Sarstedt et al., 2014). First, we conducted confirmatory factor analysis (CFA) in AMOS 25.0 to confirm the quality of fit indices of the proposed measurement model. To do so, 10 variables, including (Process and Equipment, Manufacturing Planning and Control, Product Design, Supplier Relationship, GSCM, Customer Relationship, HR Practices, and Second-Order Sustainable Performance (Environmental Performance, Financial Performance, Social Performance)) were interlinked and analyzed using CFA. The CFA results indicated that the proposed measurement model is an acceptable, excellent fit and achieved the model fitness cut-off values shown by Hair et al. (2014). For the present study, the CFA results confirm the model fit indices (see Table 1).

Reliability and Validity of the Constructs

We also adopted the guidelines for evaluating scale reliability and validity by Hair et al. (2014) and Fornell and Larcker (1981). We tested Cronbach's alpha (CA), composite reliability (CR), average extracted variance (AVE), and items loading (IL) for

TABLE 1 | Model fit indices.

Fitness indices	Measure	Measurement model	Structural model	Threshold values
Chi-square/df (CMIN/DF)	CMIN/DF	2.345	1.45	<3.00
Comparative fit index	CFI	0.939	0.999	>0.95
Standardized root mean square residual	SRMR	0.078	0.071	<0.08
Root mean-square error of approximation	RMSEA	0.068	0.061	<0.06
P-value	P-Close	0.05	0.058	>0.05

TABLE 2 | Properties of measurement model.

Latent constructs	Items Range	CA	CR	AVE	MSV	MaxR(H)
PAE	0.696–0.801	0.840	0.841	0.569	0.029	0.845
MPC	0.771–0.834	0.822	0.822	0.606	0.119	0.830
PD	0.726–0.847	0.842	0.844	0.575	0.562	0.855
HRP	0.737–0.812	0.902	0.903	0.607	0.524	0.904
CR	0.815–0.885	0.803	0.890	0.731	0.119	0.895
GSCM	0.595–0.846	0.963	0.962	0.565	0.562	0.967
SR	0.770–0.922	0.880	0.879	0.709	0.031	0.903
SAP	0.524–0.930	0.956	0.943	0.846	0.494	0.957

reliability and validity analysis. The results demonstrate that all variables achieved the threshold values for reliability and validity. The values of IL (0.524–0.930), CA (0.822–0.963), CR (0.822–0.962), and AVE (0.569–0.846) are greater than the respective cut-off threshold, which demonstrates that all measures are valid (see Table 2). Besides, the Fornell and Larcker (1981) method was used to test the discriminatory validity of the scales. The findings revealed that for each construct, the square root for AVE is higher than the values of intercorrelations of the study variables, illustrating the scales' excellent discriminant validity.

In AMOS, the validity of the instruments is measured in two ways. We determined the measurement model by testing the convergent validity by Hair et al. (2016) looking at the values of average variance obtained (>0.5) and composite reliability (>0.7). As shown in Table 2, all the deals fulfilled the suggested threshold, and therefore, convergent validity was verified.

Table 3 displays the discriminant validity assessment whereby the HTMT ratios were all below the 0.85 cut-off value. The confidence intervals do not include a zero or one, as suggested by. Thus, we can conclude that (Sarstedt et al., 2014) the measures used in this are reliable, valid, and distinct. The values that lie in off-diagonal are smaller than the average variance's square root (highlighted on the diagonal), supporting the scales' satisfactory discriminant validity.

Hypotheses Testing Results

The Confirmatory factor analysis results for the structural model revealed that the model is a good fit and achieved the cut-off

TABLE 3 | Discriminant validity.

	PAE	MPC	PD	HRP	CR	GSCM	SR	SUS
PAE	■							
MPC	0.073	■						
PD	0.000	0.126	■					
HRP	0.011	0.213	0.69	■				
CR	0.172	0.358	0.044	0.111	■			
GSCM	0.003	0.112	0.758	0.739	0.043	■		
SR	0.004	0.088	0.205	0.160	0.059	0.148	■	
SUS	0.036	0.090	0.680	0.703	0.065	0.793	0.162	■

values of model fitness, recommended by Hair et al. (2014). The Confirmatory factor analysis findings confirm the goodness of model fit indices meet the criteria (see **Table 1**). In the next step, the standardized path values were estimated after the confirmation of goodness model fit indices of the structural model using the maximum likelihood method in AMOS 25. First, we assessed the direct relationships before looking at the mediation effects. The results reveal that PAE was positively related to sustainable performance ($\beta = 0.144$, $p < 0.01$) but MPC ($\beta = -0.013$, $p = 0.803$) and HRP ($\beta = 0.025$, $p = 0.800$) were not significantly related to sustainable performance, which supports H1. In contrast, H2 and H3 are not supported. Furthermore, for H4, H5, and H6: PD ($\beta = 0.153$, $p = 0.031$), SR ($\beta = 0.216$, $p < 0.01$), and CR ($\beta = 0.265$, $p < 0.01$) were also positively related to sustainable performance giving support for H4, H5, and H6 of our study. Also, we have two endogenous constructs in our model GSCM and sustainable performance. The R^2 for GSCM was 0.640 ($Q^2 = 0.254$), and sustainable performance was 0.719 ($Q^2 = 0.374$), which indicates that their predictors can explain 64, 69.2, and 0.71.9% of the variance in the respective constructs. Q^2 values >0 indicate sufficient predictive relevance.

Similarly, to assess the mediating relations, six mediating relationships were proposed. These linkages were proposed to check the mediating effects of GSCM in the relationships among the dimensions of lean practices and sustainable performance. The estimated results from mediation testing are presented in **Table 4**. To test the mediation effect, we used the bootstrapping the indirect effect method (Preacher and Hayes, 2008) with a 5,000 resample and validate the mediation hypotheses 7a to 7f. The indirect effect of PAE \rightarrow GSCM \rightarrow sustainable performance ($\beta = -0.009$, $p = 0.525$, BCI LL = -0.043 & BCI UL = 0.020) and MPC \rightarrow GSCM \rightarrow sustainable performance ($\beta = -0.006$, $p = 0.505$, BCI LL = -0.029 & BCI UL = 0.021) indicating the indirect effect is statistically insignificant, which do not give support for H7a and H7b of this study. Furthermore, for H7c, H7d, H7e, and H7f, the results reveal that GSCM significantly mediates the relationship between HRP and sustainable performance ($\beta = 0.065$, $p = 0.019$), PD and sustainable performance ($\beta = 0.094$, $p < 0.01$), SR and sustainable performance ($\beta = 0.085$, $p < 0.01$) and, CR and sustainable performance ($\beta = 0.050$, $p < 0.01$), indicating the indirect effects

are statistically significant at the 0.01 level. This supports H7c, H7d, H7e, and H7f of this study (see **Table 4**).

DISCUSSION

The findings of the current study are in line with the investigations of Panizzolo (1998) and Dieste et al. (2020), who proved that there is a dominant impact of over-processing and the usage of old machinery also give out the depletion of energy and resources and also enhance the production of emissions. To create a uniform and streamlined flow in the production process, some practices are required. Those practices include cycle time depletion, decreasing set-up times, order and cleaning, and the usage of “error-proof” methods. The environmental advantages of lean manufacturing and production can be increased by implementing the value stream mapping through fewer problems, lower energy usage, and less wear. This proposal furnishes with the procedure for better development, cleaning, and categorizing the work environment, which moves to the fast authorization of system problems such as leaks and depletion in the chemicals and materials used (Sakthi Nagaraj and Jeyapaul, 2020). Furthermore, manufacturing firms can improve their performance by lowering their energy usage and implementing the lean process and equipment practices.

The above results of this study have made the point clear that planning and control practices have no prominent effect on sustainable performance, especially in the textile and chemical sectors because these two require more planning and control practices. This may be why there are more negative aspects to the market than positive aspects because the chemical sector requires a more controlled environment. According to the study of Mojumder and Singh (2021), the frequent changeover requires more usage of material and the high pressure on employees for lot size reduction in manufacturing and control practice. According to Haiyun et al. (2021), the side issues of planning and control practices impact the environment more than the benefits such as Kanban and visual control.

The interconnection between HR practices and sustainable performance was not proved in this study as in the chemical and food sectors there is necessarily more focus on the latest technology irrespective of human resource participation. This result does not follow the findings of Vanichchinchai (2019), which lead to the concept that HR practices can lead to lower contamination and waste production, especially in the textile sector. The team leadership and the importance of workers for preventing pollution are essential concepts provided by Ghosh (2013). According to his research, team advancement—comprising engineers, managers, and production staff—can play an important role in reducing scrap and improving environmental results. Hussain et al. (2019) contributed the evidence supporting the importance of HR agreement in his research, having found that involving the employees and granting them the best educational training can lead to a better environmental approach. Trained and experienced staff learn better and have a better capacity to solve problems that

TABLE 4 | Hypotheses testing results.

		Estimates	Std error	BCI LL	BCI UL	P-values	Decision
H1	PAE -> SAP	0.144	0.055	0.038	0.245	0.007	Accepted
H2	MPC -> SAP	-0.013	0.052	-0.115	0.092	0.803	Rejected
H3	HRP -> SAP	0.025	0.072	-0.121	0.163	0.800	Rejected
H4	PD -> SAP	0.153	0.070	0.005	0.277	0.031	Accepted
H5	SR -> SAP	0.216	0.070	0.081	0.345	0.001	Accepted
H6	CR -> SAP	0.265	0.082	0.095	0.420	0.002	Accepted
H7a	PAE -> GSCM -> SAP	-0.009	0.017	-0.043	0.020	0.525	Rejected
H7b	MPC -> GSCM -> SAP	-0.006	0.013	-0.029	0.021	0.505	Rejected
H7c	HRP -> GSCM -> SAP	0.065	0.028	0.022	0.127	0.019	Accepted
H7d	PD -> GSCM -> SAP	0.094	0.032	0.037	0.164	0.003	Accepted
H7e	SR -> GSCM -> SAP	0.085	0.030	0.033	0.149	0.005	Accepted
H7f	CR -> GSCM -> SAP	0.050	0.019	0.019	0.091	0.004	Accepted
Endogenous Constructs	GSCM	SAP					
R ²	0.640	0.719					
Q ²	0.254	0.374					

PAE, Process and Equipment; MPC, Manufacturing Planning and Control; HRP, HR Practices; PD, Product Design; SR, Supplier Relationship; CR, Customer Relationship; SAP, Sustainable Performance; GSCM, Green Supply Chain Management.

can prevent pollution and reduce materials usage. Hence both positive and negative aspects are present, which can show that there is no essential relation between HR practice and sustainable performance.

The above results have shown a positive relationship between product design and sustainable performance. The product design aims to eliminate unnecessary steps and increase the simplification of the process. Product design practices can contribute to resource usage and increase the level of supercity by decreasing or eliminating the waste from the production process. This can have a better effect on the work pressure. The main focus is to reduce waste by adequately implementing the product design practices (Pearce et al., 2018). Organizations that want better performance and wanted to minimize waste must implement the product design practices.

According to the above results, the other factor that positively impacts sustainable performance is supplier relationship practices. According to Samad et al. (2021), supply maintenance practices can extract the waste and increase inventory usage by depleting the variability in supply. There is a need to have a close working relationship with the suppliers for the early stage of development and increase process quality and waste reduction. The exchange of information and communication with the suppliers can increase the supplier's ability to learn about the requirements needed for the best products in the industry.

The above results have also proved a positive impact on customer relationships on sustainable performance. The adoption of customer relationships in the organization can lead to the implementation of the best manufacturing practices, according to Helleno et al. (2017). For a better image of the organization in society's eyes and to have the best relationship with the customers, the implementation of customer relationships is efficiently needed in the organization. To satisfy

the customers and increase the level of satisfaction, there is a need to meet the customer's social and environmental demands.

As discussed earlier by Singh et al. (2020), if a firm wants to get significant results from lean practices, then it should adopt GSCM, which helps to get sustainable performance. So, in the present study, GSCM proposed a mediator to increase lean practices, leading to enhanced sustainability performance (Kamble et al., 2020). This study shows that GSCM mediates the relationship between HR practices, product design, supplier relationships, customer relationships, and sustainable performance. The results express that lean practices such as HR practices, product design, supplier relationship, and customer relationship significantly impact sustainable performance if a firm uses GSCM and the reason of having no mediation role of GSCM between process and equipment, manufacturing planning and control, and sustainable performance that the concept of lean and GSCM within Pakistani manufacturing firms is at an initial stage. According to Mojumder and Singh (2021), lean practices take a long time to take part in the firm's sustainable performance.

The primary demand of this research was to indicate the interconnection between lean manufacturing practices and the sustainable performance of the production companies of Pakistan by having a GSCM as a mediator. The above results have proved that product design, supplier design, and customer relationships have tremendous impacts on sustainable performance. The positive effects of GSCM on sustainable performance are because of the impact of process and supplier relationships (Stekelorum et al., 2021).

Working toward GSCM as a potential tool to improve the sustainability of organizations, the results showed a small incremental difference but a considerable improvement in organizations' sustainability indicators (Orji and Liu, 2020). To sustain a business, it is necessary to properly utilize

human resources, produce better designed products, and improve customer relations. Different aspects of the lean and green strategies have been studied as they can be used to support organizational sustainability (Kovilage, 2021). The study highlights the significance of the GSCM in organizational sustainability through environmental performance, economic performance, and social performance in Pakistan. Thinking Lean can increase exceptional performance in the organization only when a negligent focus is placed on waste identification and elimination.

PRACTICAL IMPLICATIONS

The findings of this study provided the best endowment for managers. These findings will enable the managers and decision-makers of manufacturing companies to increase sustainable efficiency and reduce waste through the use of lean manufacturing and GSCM implementation. The managers have to understand different terms related to the progress of the organization. This can help the managers take a step to add a significant contribution toward the progress of the firm by implementing the manufacturing model practices. There are positive effects of process and equipment, product design, and supplier relationship on the sustainable performance of the company; hence, these practices must be implemented by managers for their positive effect. To increase the impact of process and equipment, there must be the implementation of GSCM development by managers of the organization. This literature has emphasized lean manufacturing practices from the research view and has highlighted the interconnection between GSCM and sustainable performance.

Readers will come to know the practical significance of small incremental improvements and innovative activities that consider green supply chain management and that relate to better manufacturing and service turns into a mediator. Besides, the significance of lean and green strategies in real manufacturing

environments can be relatively well-studied, as the present studies suggest.

LIMITATIONS AND FUTURE RESEARCH

Although the study has achieved its objectives, certain limitations need to be considered to generalize its findings. First of all, the study's nature is cross-sectional, which cannot show the dynamic nature of sustainable performance. There is a need for a longitudinal study that can present a clear picture of lean manufacturing practices and their impact on sustainable performance. The samples were also limited to Pakistan only, and there is a need to implement this model in other countries before it can be generalized.

DATA AVAILABILITY STATEMENT

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

AUTHOR CONTRIBUTIONS

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

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Eminence of Leader Humility for Follower Creativity During COVID-19: The Role of Self-Efficacy and Proactive Personality

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The purpose of this study is to understand how leader humility effectively stimulates follower creativity in the workplace during the coronavirus disease 2019 (COVID-19) scenario. Relying on social cognitive and social information processing theories, this study investigates how leader humility cultivates follower self-efficacy and follower creativity. Furthermore, it explores an intervening mechanism of follower self-efficacy and examines a moderating role of leader proactive personality. The hypothesized model is empirically tested by collecting the data from 405 employees and 87 managers working in the banking sector of Pakistan. The results indicate that leader humility is positively related to follower self-efficacy and follower creativity, which improve the organization's innovation climate and an environment for social sustainability. Follower self-efficacy is also significantly related to follower creativity. The mediation analysis shows that follower self-efficacy mediates the relationship between leader humility and follower creativity. Additionally, leader proactive personality moderates the relation between follower self-efficacy and follower creativity. This study highlights the importance of leader humility for creativity and extends the literature by explaining the role of self-efficacy. Furthermore, the findings may assist the policymakers in how a humble leader heightens employee creativity and social sustainability in COVID-19.

Keywords: leader humility, follower creativity, social sustainability, COVID-19, self-efficacy, proactive personality

INTRODUCTION

In a dynamic environment, organizations have to deal with several challenges for their survival and maintaining a competitive advantage over their rivals. However, coronavirus disease 2019 (COVID-19) has been proven to be an infuriating global challenge (Khan et al., 2021). Initially, the COVID-19 pandemic seriously influenced the economy of different countries rapidly. Although many countries took different steps to control this uncertain situation, still COVID-19 spread drastically and affected human life. Management and policymakers have paid considerable attention to the COVID situation. This virus develops anxiety and a depressed environment that adversely affect the employees' health. Leaders can control the anxiety and depression of employees

as they directly interact with them. In this situation, a leader can play a positive role. Leader behavior can motivate employees for new and valuable ideas, which lead to creativity, innovation, and social sustainability.

There is a need to find and implement innovative solutions to mental health (Kapoor and Kaufman, 2020). Although organizational literature has witnessed the emerging interest of scholars in exploring the relation between leader behavior and employee creativity (Gu et al., 2020; Song et al., 2020). Although researchers have focused on different leadership styles that may influence creativity, but little attention has been paid to leader humility. Researchers argued that how humble leaders augmented follower creativity. Empirical evidence demonstrated that leader humility positively influences firm and team performance (Chiu et al., 2016). Even though humble leaders exert positive and motivational behavior, this study mainly focuses on how humble leaders' positive attributes influence creativity in COVID-19 anxiety.

It becomes more critical for organizations to focus on leadership styles to control this dynamic situation like COVID-19. COVID-19 influences personal life as well as global organizations. It also increases the need for effective leadership during COVID-19 (Sergeant and Stajkovic, 2020). Leader humility is a leadership style that positively influences employees in pandemics (Septiandari et al., 2021). It is also found that leader humility positively influences followers' job satisfaction and work engagement (Owens et al., 2013). Leadership styles influence the creativity in an organization, such as transformational leadership, empowering leadership, and humility leadership (Wang et al., 2017). The social information processing theory suggests that leader humility increases employees' creativity (Wang et al., 2017). Recently, it is articulated that more research is required to examine the effect of leader humility in enhancing follower creativity (Wang et al., 2017; Mao et al., 2019).

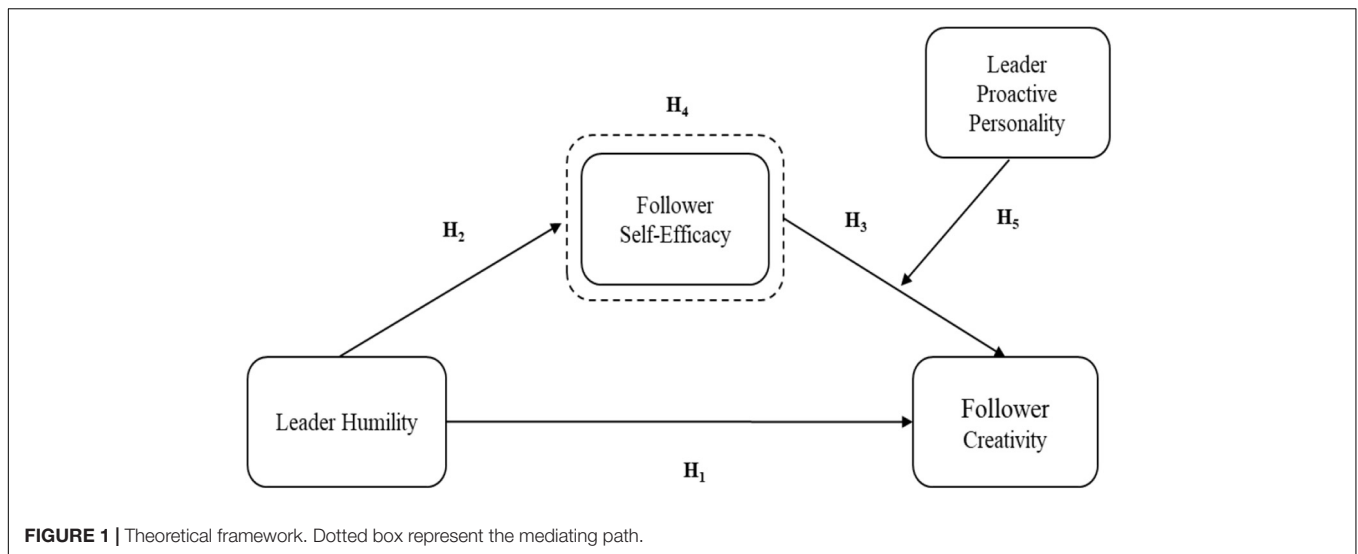
In a dynamic environment, *creativity* also plays a vital role in the survival of an organization. Innovation arises from creative ideas (Amabile et al., 1996). Academia and practitioners are interested in identifying the factors that enhance creativity (Bogilović et al., 2017). Leadership is one of the crucial factors concerning creativity. For instance, recent studies show a significant influence of leadership styles on employee creativity and team creativity (Gu et al., 2020; He et al., 2020). Follower creativity produces unique, novel, and helpful procedures, products, and services (Amabile et al., 1996). Researchers have devoted substantial attention to creativity and its antecedents and the factors influencing follower creativity. Researchers have extensively focused on the individual factors that affect creativity, such as psychological states, traits, thinking styles, self-concepts and identity, values, knowledge, and abilities for creativity (Anderson et al., 2014). Moreover, followers who perceive the workplace novel events and critical events are more likely to be improvised and creative (Chen et al., 2020). Although events play a vital role in stimulating creativity, but motivational factors are also important, especially in COVID-19 crises. Motivation-oriented factors provoke followers to employ in creative endeavors by incorporating their attributes, abilities, and skills (Cai et al., 2020).

Based on the social cognitive theory, human beings have the capability for observational learning, which enables them to develop their skills and knowledge under the influence of modeling (Bandura, 2001). Modeling gives cues about the rules for innovative and generative behavior (Bandura, 2001). An individual who observes their creative coworker's behavior learns creative skills and strategies (Zhou, 2003). Employees can observe and learn either from a leader or a coworker, or a team member. Further, scholars suggested that wellbeing can be improved by continuously engaging in creative activities during the pandemic (Kapoor and Kaufman, 2020). However, there is a lack of intervening mechanisms that may strengthen the impact of leader humility on followers' behavior (Mao et al., 2019).

Extensive studies has been focused on self-efficacy as an intervening mechanism (Chen et al., 2001; Mao et al., 2019). Self-efficacy is the trust of one person in the other persons' abilities and skills to successfully organize and implement the work-related tasks to achieve organizational goals (Bandura, 1997). The social cognitive theory explains it as the confidence of an individual in their coworkers to perform a task successfully (Bandura, 2001). Individuals believe that they are competent and see more opportunities in risk decisions and tasks (Krueger and Dickson, 1994). Self-efficacy beliefs play an integral role in motivation, such as self-regulation (Bandura, 2001). It can be noted that COVID-19 causes mental distress. However, self-efficacy is still proven to be an intervening mechanism under the COVID-19 situation (AlZgool et al., 2020).

However, scholars claimed that leader humility augments follower creativity and follower self-efficacy. However, it is also essential how actively leaders respond to a dynamic environment. Proactive people engage in behavior beyond their direct requirements (Yang et al., 2020). They can assist their organization other than the assigned duties and exert a high-level effort for the organization in a vibrant situation. They also scan the opportunities and change the organization's work environment (Bateman and Crant, 1993). In this regard, researchers have paid considerable attention to proactive behavior. For instance, they develop a climate that supports innovation (Xu et al., 2019). Creativity and innovation have been considered as vital components for the effectiveness and success of organizations (Anderson et al., 2014). Followers can emulate leader behavior as leaders are role models for them. Taking together, the proactive personalities of leader and follower enhance job satisfaction (Zhang et al., 2012). Proactive personality is positively related to motivational resources even in COVID-19 crises (Yi-Feng Chen et al., 2021). Prior studies have recommended that a leader's proactive personality can be a boundary condition (Chiu et al., 2016; Wang and Liang, 2020).

Based on social cognitive and social information processing theories, we investigate the impact of leader humility on creativity and response to the recent calls (Mao et al., 2019). This empirical study attempts to test a theoretical framework (**Figure 1**). We aimed to examine the interrelationship between leader humility, follower self-efficacy, and follower creativity. Moreover, the study examines an intervening mechanism of follower self-efficacy and the moderating role of a leader's proactive personality.



THEORETICAL BACKGROUND AND HYPOTHESES

According to the social cognitive theory, personal factors (i.e., cognitive and behavioral patterns) influence one another. The social cognitive theory is embedded in triadic reciprocal causation in cognitive processes (Bandura, 2001). Mutual causation in the workplace gives opportunities to learn for both the leader and follower. A humble leader also shows a willingness to learn and enhances the role of the follower and capability beyond one-self. It allows followers to exhibit their efficacy as a humble leader appreciates others' strength. Cognitive processes are about brain activities and exercise a determinative influence (Bandura, 2001). Leaders try to influence their followers by integrating the strengths and weaknesses of the followers. Specifically, leader humility enhances follower self-efficacy (Mao et al., 2019).

The social information processing theory proposes that supervisors and coworkers are the leading providers of social cues (Griffin, 1983). Social cues from leaders have a positive impact on the follower behavior and perception. This theory also stated that the employee perception and responses about work-related tasks were affected by the changes in task objectives and information cues by leaders. Based on this theory, we posit that the link between leader humility and employee creativity depends on the social cues from the leader. Social cues motivate followers to be more creative and innovative. This theory also supports our proposed hypothesized model as social cues can cause followers to perceive the workplace more favorable (Griffin, 1983). Scholars argue that social information influences perceptions, attitudes, and behaviors in the workplace (Salancik and Pfeffer, 1978). Likewise, social cues can cause followers to perceive the workplace more favorable (Griffin, 1983). We argue that humble leader cues influence the outcomes of followers, such as leader humility enhances follower creativity (Wang et al., 2017). We expect that social cues allow the follower to show his capability to perform a different task during COVID-19. The

follower's confidence in performing a different task may lead to being more creative and unique.

Leader Humility and Follower Creativity

Leader humility is an interpersonal characteristic that helps leaders cope with others in a social context by showing self-awareness (interaction with others), appreciating others' contribution, strength, and teaching ability, i.e., unique ideas and feedback (Owens et al., 2013). A humble leader influences the group performance through constructive interpersonal processes in collective humility and collective regulatory focus (Owens and Hekman, 2016). Contextual, cultural, and personal factors affect creativity (Liu et al., 2016; Zhou et al., 2017). Creativity is a unique and productive idea. The novel idea depends upon the context that cues either good or bad being novel (Zhou et al., 2017). Indeed, individual creativity has been mainly focused. In recent years, team creativity has also received considerable attention (He et al., 2020). Specific leader behaviors significantly affect the subordinate perceptions of leader support that improve subordinate creativity (Amabile et al., 2004). Shared leadership and transformational leadership promote team creativity (Song et al., 2020). Supportive leader promotes creativity among followers due to the incorporation of intrinsic motivation and positive behavior (Gu et al., 2020). Moreover, task complexity is also associated with creativity (Sia and Appu, 2015).

Many empirical findings stated that leaders amplify follower creativity through intrinsic motivation. Extant research explored that a leader significantly affects the behavior of a follower behavior. As a particular leader's behavior strongly influences the perception and reactions of subordinates, which affects subordinates' creativity (Amabile et al., 2004). Different leadership styles can enhance creativity in the organization, such as transformational leadership (Shin and Zhou, 2007), humility leadership (Wang et al., 2017), and shared leadership (He et al., 2020; Song et al., 2020). Although we argue that different factors influence creativity, it leads to innovation, high performance, and suitability of organization. Nevertheless, some contingent

factors limit this favorable effect of creativity. For instance, Gong et al. (2013) contend that a positive relation between creativity and firm performance is contingent on riskiness orientation, organization size, and realized absorptive capacity.

According to the social information processing theory, leader social cues can affect the follower motivation toward creativity (Griffin, 1983). We examine leader humility through the perspective of the social information processing theory. Leader humility is an interpersonal characteristic that helps leaders cope with others in a social context by showing self-awareness (an interaction with others), appreciating others' contribution and strength, and teaching ability, i.e., unique ideas and feedback (Owens et al., 2013). A leader's modeling of teachability allows the follower to be creative. Due to teachability in a humble leader, the follower can give a novel and unique idea. The environment is dynamic; for survival, there is a need for creativity. There is vast advancement in technology and increasing specialization. We argue that a humble leader can enhance follower creativity through teachability in the pandemic. Moreover, followers with humble leaders are more inclined to give valuable and new ideas. Shreds of evidence have shown that a humble leader positively affects follower creativity (Wang et al., 2017).

This study focuses on creativity by integrating social context as leader humility pays attention to teaching ability and self-enhancement of others. It also enriches the follower creativity (Wang et al., 2017). Drawing on social information processing theory, scholars argue that leader humility increases employees' creativity (Wang et al., 2017). Leader humility positively influences employee accountability during COVID-19 (Septiandari et al., 2021). However, research is required to identify a new mechanism of the relationship between leader humility and follower creativity (Wang et al., 2017; Mao et al., 2019). Based on the abovementioned discussion, we expect that leader humility will positively influence follower creativity in COVID-19.

H₁: Leader humility is positively related to follower creativity.

Leader Humility and Follower Self-Efficacy

Self-efficacy plays a motivational role in self-regulation (Bandura, 2001). Efficacy indicated the individual's confidence in utilizing the cognitive resources, motivation, and courses of action to perform a specific task (Stajkovic and Luthans, 1998). People who are convinced in their efficacy figure out the opportunities rather than focus on risky new ventures (Krueger and Dickson, 1994). Self-efficacy is about one's belief in shaping and executing a necessary course of action (Bandura, 1997). People with high self-efficacy erect opportunities and try to find out how to surmount institutional impediments (Bandura, 2012). The effect of goal assignment on performance is strengthened when individuals have high self-efficacy (Sue-Chan and Ong, 2002). More perniciously, ability and skill increase the self-efficacy that influences performance goals (Brown et al., 2011).

Individuals with high self-efficacy are more likely to establish higher goals and anticipate actions that lead to performance attainment through intrinsic motivation

(Bandura and Locke, 2003; Sitzmann and Yeo, 2013). The social cognitive theory predicts behavior and explains the mechanisms of learning and change (Bandura, 2012). High self-efficacy permits individuals to learn strategies to overcome new challenges and attain challenging goals (Seibert et al., 2017). More preciously, leadership climate predicts individual self-efficacy and group efficacy (Chen and Bliese, 2002). For instance, researchers claimed that leadership styles affect the member self-efficacy on an individual level (Choi et al., 2003).

Efficacy beliefs affect the work-related activities and influence the other functional activities, i.e., decision-making. Implementing a strategy or decision is associated with the decision-making process and self-efficacy (Bandura, 1997). When there is team decision-making, team members show a high level of efficacy as they feel competent (Phillips, 2001). They feel their opinions and skills are valuable for others. So, they exert high-level efficacy, which can influence their decision-making. A leader who allows followers to take part in decision-making may enhance follower self-efficacy. Humble leaders appreciate others and demonstrate open learning and ideas from others (Owens et al., 2013). Hence, leader humility is manifested by exhibiting others' development and willingness for advice and help. Thus, we expect that leader humility arguments follower self-efficacy.

H₂: Leader humility is positively related to follower self-efficacy.

Follower Self-Efficacy and Follower Creativity

Personal self-efficacy is related to a person's positive attitude and capability to perform a different task successfully. The influence of self-efficacy on performance diverges in different circumstances (Stirin Tzur et al., 2016). The literature suggested that self-efficacy can explain why and how there is a relation between cognitive ability and performance (Chen et al., 2001). Furthermore, an external coach affects the participant effectiveness than one's self or a peer (Sue-Chan and Latham, 2004). Generally, self-efficacy positively influences task performance through the motivational state (Chen et al., 2004) as one's belief about efficacy regulates cognitive, motivational, and affective function, which enables people to build a productive environment (Bandura, 2001). Researchers recommend a conditional view about self-efficacy; when rewards are high (low), the self-efficacy positively (negatively) influences performance (Stirin Tzur et al., 2016). Ambiguity is a component of negative self-efficacy (Schmidt and DeShon, 2010). The relationship between self-efficacy and performance is contingent on the level of ambiguity (Schmidt and DeShon, 2010). Ambiguity can be reduced by incorporating information at the right time. Timely and exact responses from leaders foster follower self-efficacy.

The social cognitive theory suggests that people with high efficacy anticipate success, which assists as guides for performance (Bandura, 2001). Self-efficacy is a significant predictor of employee performance (Judge and Bono, 2001). Psychological capital contributes toward organizational

commitment (Sahoo and Sia, 2015). Self-efficacy is a psychological capital that assists in performing different tasks (Peterson et al., 2011). Individuals having confidence in their abilities accept challenging tasks without concerning uncertainty. Scholars contend that in COVID-19, self-efficacy is positively related to employee performance (Mujeeb et al., 2021). When employees have a high level of self-efficacy, they are more likely to be creative. Self-efficacy contributes to workplace creativity (Appu and Sia, 2017). Further, creative self-efficacy is positively related to employee creativity (Gong et al., 2009). Moreover, creative self-efficacy stimulates the creative process, which helps to develop new and valuable ideas (Bandura, 1997). Accordingly, we propose that follower self-efficacy is positively related to follower creativity.

H₃: Follower self-efficacy is positively related to follower creativity.

Mediating Role of Follower Self-Efficacy

Generally, researchers have focused on individual creativity and creative efficacy. A workplace event provides viable and indispensable opportunities for creativity. Employee improvisation mediates the relation between the workplace event novelty and creativity (Chen et al., 2020). Drawing on the social cognitive theory, knowledge structure provide a channel that guides how a sub-skill should be integrated, selected, and used for a specific purpose (Bandura, 2001). According to Richter et al. (2012), creative self-efficacy positively impacts creativity when team members have greater shared knowledge of who knows what.

Previous studies have claimed that the influence of leadership styles on followers will be strengthened through an intervening mechanism. Creative self-efficacy mediates the relationship between leadership styles and employee creativity (He et al., 2020). Self-efficacy is a global trait, and it contributes to the operation (Bandura, 2012). However, COVID-19 drastically influences every aspect of life and organization all over the world. We argue that how self-efficacy can be an intervening mechanism during a pandemic. Although previous literature studies provided suggestive evidence that several intervening variables influence leader behavior with creativity. A humble leader gives psychological freedom to the follower to enhances self-efficacy to allow him to be more creative. More recently, self-efficacy mediates the relationship between servant leadership and employee performance under pandemics (Mujeeb et al., 2021). So, based on the abovementioned discussion, we proposed that follower self-efficacy mediates a positive relationship between leader humility and follower creativity.

H₄: Follower self-efficacy mediates the relationship between leader humility and follower creativity.

Moderating Role of Leader Proactive Personality

A proactive personality secures the psychological resources under stressful COVID-19 conditions (Yi-Feng Chen et al., 2021). Proactive personality is a process by which individual

influences the environment (Bateman and Crant, 1993). Proactive personality has been associated with career success (Seibert et al., 1999), and this is a better way by which proactive persons achieve a high level of success (Seibert et al., 2001). People learn what action would be suitable in a specific situation by observing positive and negative outcomes (Bandura, 2001). Similarly, proactive people analyze the situation and take steps to more advantage, which lead to favorable outcomes (i.e., performance). Personality characteristics (i.e., proactive personality) can predict directly and indirectly work engagement, job performance, and mental health (Altura et al., 2020). Though leaders who are proactive supports others proactive behavior as leaders feel the responsibility for construction change and motivate employees to be proactive (Fuller et al., 2015). For instance, proactive personality motivates leader member exchange and voice behavior (Wijaya, 2019).

The social cognitive theory explains that the human mind is proactive and creative (Bandura, 2001). It is more appropriate to say that people think about what action should be taken with changing the situation regardless of whatever alterations may be required. Motivation strengthens the relationship between proactive personality and individual creativity (Farooq et al., 2020). While team members' proactive personality provides a climate for the innovation that leads to individual creative performance (Xu et al., 2019). The literature provides suggestive evidence that leader behavior could be a boundary condition for leader and follower outcomes. Transformational leadership (i.e., motivation and intellectual stimulation) moderates the relation between educational specialization heterogeneity and team creativity (Shin and Zhou, 2007). Moreover, proactive leader moderates between leaders' positive behavior and teams for individual creative role identification or individual creative self-efficacy (Wang and Liang, 2020). Yet, the previous literature described a positive relationship between proactive behavior and innovation (Seibert et al., 2001). Even in COVID-19, proactive personality is also associated with performance (Yi-Feng Chen et al., 2021). We proposed that a proactive leader moderates the relation between follower self-efficacy and follower creativity based on extant literature.

H₅: Leader proactive personality will moderate the relationship between follower self-efficacy and follower creativity, such that the relationship of follower self-efficacy on follower creativity will be stronger in the presence of high (vs. low) leader proactive personality.

MATERIALS AND METHODS

Participants and Procedures

To empirically test the hypothesized model, primary data were collected from the followers (i.e., employees) and their immediate supervisor/manager (leader) working in both public and private banks of Pakistan (during COVID-19). The State bank of Pakistan regulate both private and public banks; thus, we targeted these banks. We used convenience sampling for data collection. For collecting the data, we used two questionnaires. The first

questionnaire was for followers, and the second one was for leaders. Bank managers were considered as a leader because they overlooked the activities of employees working in the branch. Employees were considered as a follower as they followed the instruction of managers. English language is used to develop both questionnaires, which is easily understandable by the respondents working in the banks of Pakistan. A pilot study was conducted to evaluate the effectiveness of both questionnaires and find out the measures, which are not understandable by respondents. We take consent from all banks' HR departments to collect the data, especially working in the Punjab province of Pakistan. Then, we emailed questionnaires with a covering letter to those branches, which gave consent to participate in the survey. After 2 weeks, we received a few responses and sent a second email as a reminder and made phone calls to those who did not reply.

Finally, we physically visited the branches to obtain the data. During the COVID-19 period, this study was conducted. We followed standard operating procedures (SOPs), and maintained social distancing and mask wearing. We did not directly interact with each employee. Questionnaires were given to one branch manager; the manager further distributed these questionnaires to the branch's remaining employees. We targeted 62 branches of different banks and distributed 450 questionnaires among followers and 110 questionnaires among leaders. Finally, 405 useable questionnaires were received from the followers and 87 useable questionnaires from the leaders. It yields a follower's response rate of 90% and a leader's response rate of 79%. Concerning followers, the sample data indicate that 73.3% of the respondents are men. Furthermore, the majority of the managers are men in the banking sector (96.5% men). It is noted that employees, as well as managers, are highly educated (Table 1). Around 18% of the data were collected from the first line manager and 82% from non-managerial employees.

Measurement and Scales

To overcome method biases (Podsakoff et al., 2003), the survey data are obtained from two separate sources (followers and their immediate leader). In addition, a neutral scale point is also avoided. The measurement scales and sample items of all variables are provided as follows.

Follower creativity is measured by using a 13-item scale adapted from Zhou and George (2001). Employees responded to the 13 items on a 5-point Likert scale ranging from "Never"

to "Always." We adopted a 9-item scale developed by Owens et al. (2013) to measure *leader humility*. Followers responded to the 9 items on a 6-point Likert scale ranging from "strongly disagree" to "strongly agree." *Self-efficacy* is measured with an 8-item scale developed by Chen et al. (2001). Followers responded to the 8 items on a 5-point scale ranging from "strongly disagree" to "strongly agree." We measured *leader proactive personality* with a 10-item scale developed by Seibert et al. (1999). Leaders responded on a 6-point Likert scale ranging from "strongly disagree" to "strongly agree." Keeping in view of extant research, we consider demographic factors as control variables, such as job designation, gender, age, and educational level, tenures in branch and bank.

RESULTS

To empirically test the hypothesized model, the study utilizes the SPSS and AMOS software. Initially, data cleaning and screening, correlation matrix, and descriptive statistics analyses are conducted. The explanatory factor analysis (EFA) and confirmatory factor analysis (CFA) are performed to confirm the model fitness. Furthermore, Process Macros are used to test the direct, mediating, and moderating relationships. We test the normality of data by using the Kolmogorov-Smirnov test (One-Sample K-S test). Tabachnick and Fidell (2007) suggested that the value of the Kaiser-Meyer-Olkin (KMO) index should be 0.6 or more (ranging from 0 to 1). In the current study, the KMO value is 0.749, and Bartlett's test is significant as its value of $p = 0.000$. After that, Mahalanobis D^2 test is conducted to find out outliers. Further, reliability is tested through Cronbach's alpha and composite reliability.

The EFA is conducted to explore the factors that measure the constructs. Further, the items that have poor loading (i.e., loading less than 0.30) are removed. Small coefficient factors are considered to be insignificant (Fabrigar et al., 1999). CFA is conducted to find the best model among different alternate models using AMOS 20. We also run alternate models to find the best model, i.e., 3 factors, 2 factors, and 1 factor. The fit indices reveal that the hypothesized model is the best as compared to alternative models. Model fit indices of the hypothesized model are within acceptable range as well as compared to alternate models [chi-square fit statistics (CMIN)/df = 1.935, goodness-of-fit index (GFI) = 0.853; comparative fit index (CFI) = 0.894; Tucker-Lewis index (TLI) = 0.888, root mean square error of approximation (RMSEA) = 0.048].

The properties of the study variables are normally distributed as the values of SD are less than 1. The average values of all variables are more than 4 (Table 2). Cronbach's alpha values indicate that scales are reliable and the items in a construct are strongly correlated. The reliabilities of all variables are incredible as the scale coefficients are more than 0.80. The values of Composite reliability of all variables are in the acceptable range (more than 0.70). The alpha and CR values are given in Table 2.

The correlation results (Table 3) reveal that leader humility is significantly related to follower creativity ($r = 0.433$, $p < 0.01$) and follower self-efficacy ($r = 0.335$, $p < 0.01$). Follower self-efficacy

TABLE 1 | Education level of participants.

Education (years)	% of Employees Education	% of Managers Education
12	2	–
14	20	14
15	0.5	1.2
16	67.7	66.3
17	0.5	2.3
18	9.2	15
20	–	1.2
Total	100	100

TABLE 2 | Descriptive statistics and reliability analysis.

Variables	Mean	SD	α	CR
Leader humility	4.61	0.93	0.90	0.90
Follower self-efficacy	4.00	0.64	0.82	0.73
Follower creativity	4.06	0.61	0.89	0.75
Leader proactive personality	4.92	0.75	0.88	0.88

SD, Standard deviation; α , Cronbach's alpha; CR, Composite reliability.

is significantly related to follower creativity ($r = 0.401, p < 0.01$). The results also indicate that follower self-efficacy has no significant relationship with a leader's proactive personality. Moreover, follower creativity and leader proactive personality have an insignificance relation ($r = 0.037$).

Moreover, we used process Macros models (Hayes, 2013) to test our hypothesized model. We used models 1 and 4 to test the mediation and moderation effect (see **Table 4**). The result reveals that leader humility has a positive significant effect on follower creativity [$\beta = 0.221, p < 0.001$ (LLCI = 0.162, ULCI = 0.280)]. Further, there is a significant direct effect of leader humility on follower self-efficacy [$\beta = 0.230, p < 0.001$ (LLCI = 0.166, ULCI = 0.294)]. Thus, Hypotheses 1 and 2 are supported. The findings also exhibit that follower self-efficacy has a positive effect on follower creativity [$\beta = 0.276, p < 0.001$ (LLCI = 0.190, ULCI = 0.362)]. Therefore, Hypothesis 3 is supported.

By using model 4, we tested the mediation effect of follower self-efficacy. The findings support the proposed mediation relation. Follower self-efficacy mediates the relationship between leader humility and follower creativity [$\beta = 0.063$, (LLCI = 0.033,

ULCI = 0.099)]. Hypothesis 5 depicts that a leader's proactive personality moderates the relationship between follower self-efficacy and follower creativity. The positive effect of follower self-efficacy on follower creativity is strengthened when leader proactive personality is high [$\beta = 0.141$, (LLCI = 0.013, ULCI = 0.269)]. We plotted moderation effects of a leader's proactive personality in **Figure 2**.

DISCUSSION

In the current study, we investigated how humble leadership influenced follower behavior, i.e., follower self-efficacy and follower creativity in the workplace when COVID-19 is at the peak position. We theoretically contend and empirically test that leader humility magnifies follower self-efficacy, which positively affects follower outcomes. This study also attempts to determine a mediating role of follower self-efficacy between leader humility and follower creativity. Furthermore, it is also found that a leader's proactive personality moderates the effect of follower self-efficacy on follower creativity. The findings of present research support our hypothesized model, demonstrating that humble leaders, directly and indirectly, influence follower behavior. This study analyses the psychological behavior styles such as follower self-efficacy and follower creativity. The findings reveal that leaders are the main component of the social system that influences follower behavior.

Based on the social information theory, we investigated that how leader humility promotes follower creativity. Prior research

TABLE 3 | Correlations matrix.

Variables	1	2	3	4	5	6	7	8
1. Employee gender	1							
2. Employee age	0.221**	1						
3. Formal education	-0.014	-0.306**	1					
4. Tenure branch	0.046	0.242**	-0.085	1				
5. Tenure bank	0.131**	0.658**	-0.289**	0.368**	1			
6. Leader humility	0.007	0.091	0.055	-0.010	0.019	1		
7. Follower self-efficacy	0.021	0.013	0.069	0.029	-0.051	0.335**	1	
8. Follower creativity	0.078	0.031	0.047	0.005	0.022	0.433**	0.401**	1
9. Leader proactive personality	-0.167**	-0.058	-0.036	-0.093	-0.026	0.049	0.039	0.037

** $p < 0.01$.

TABLE 4 | Process macros results.

Hypotheses	Path	Direct effect			Indirect effect		
		Beta	LLCI	ULCI	Beta	LLCI	ULCI
H ₁	LH → FCR	0.221***	0.162	0.280			
H ₂	LH → FSE	0.230***	0.166	0.294			
H ₃	FSE → FCR	0.276***	0.190	0.362			
H ₄	LH → FCR via FSE				0.063	0.033	0.099
H ₅	FSE → FCR Interaction effect of LPP	0.141**	0.013	0.269			

LH, Leader Humility; FCR, Follower Creativity; FSE, Follower Self-efficacy; LPP, Leader Proactive Personality.

** $p < 0.01$; *** $p < 0.001$.

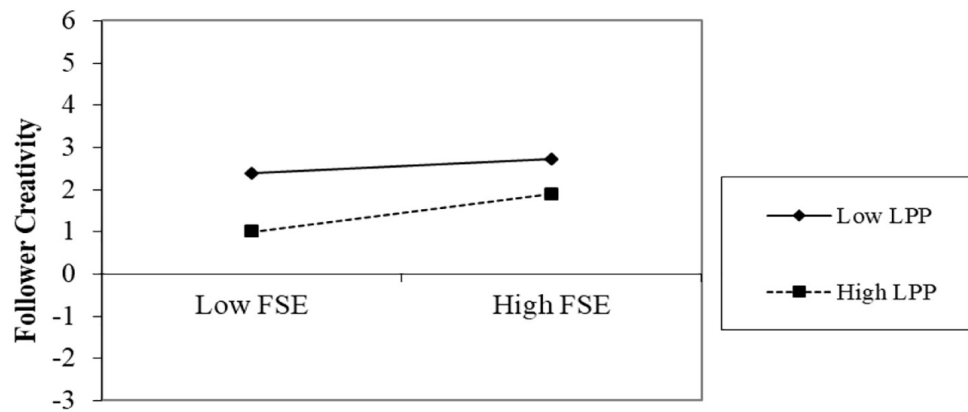


FIGURE 2 | Moderation effect of leader proactive personality.

has identified a positive relation between leader humility and follower creativity, specifically in the healthcare system, i.e., hospital (Wang et al., 2017). We can expect that leaders in other sectors will be humble as doctors. We explore the impact of leader humility on follower creativity in the banking sector. Because the findings represent a positive effect of leader humility on follower creativity, in alignment with previous research (Wang et al., 2017), scholars also reveal that engaging in creativity can buffer depressed situations in COVID-19 (Kapoor and Kaufman, 2020). It should be taken into account for the organization as well as managers for survival.

We explore the relationship between leader humility and follower self-efficacy. Scholars have discussed self-efficacy and its predictors. A humble leader enhances a role of the follower and promotes other expertise. This study empirically proves that leader humility have a positively influence on follower self-efficacy. A humble leader encourages followers to take risks and respond to challenging situations. The findings confirm that bank leaders are humble. Moreover, followers in banks have high self-efficacy. Hence, leader humility is a proven predictor of follower self-efficacy. Findings provide support to the theory (Bandura, 2001). In addition, we predicted that follower self-efficacy could bolster follower creativity. The followers who take the risk and have the confidence to perform a specific task are more likely to be creative. Our findings reveal that follower self-efficacy is positively related to follower creativity in alignment with previous studies (Gong et al., 2009). Hence, it is proven that follower self-efficacy is also a predictor of follower creativity. Moreover, this study tests that follower self-efficacy mediates the relationship between leader humility and follower creativity. Humble leaders enlarge the confidence of their followers to perform challenging tasks. Followers with high efficacy display cognitive resourcefulness, which lead to creativity. It underscores an essential intervening mechanism that describes the association of leader humility with follower creativity. The findings consist of past research showing that efficacy is a valuable intervening mechanism for the relation of a leader with followers (He et al., 2020). It is noted that self-efficacy is an intervening mechanism under COVID-19 (AlZgool et al., 2020).

Finally, we explore a leader's proactive personality as a critical moderator and empirically find that a leader's proactive personality positively moderates the relationship between follower self-efficacy and follower creativity. Nevertheless, researchers pay attention to a leader's proactive personality as a moderator for leader humility and leadership styles (Chiu et al., 2016). We found that leader proactive personality is a boundary condition between the relation of follower self-efficacy and follower creativity. Nowadays, a proactive personality has become more critical for every organization. Proactive people can best analyze the environment in the best way. A proactive person can control COVID-19 crises by focusing on motivation resources (Yi-Feng Chen et al., 2021).

The study contributes to the literature in several ways. This study responds to a recent call for further investigating the relation between leader humility and follower creativity (Mao et al., 2019). It is an extension of the literature on leader humility by explaining the role of self-efficacy. The present study provides a motivational mechanism and empirically supports that a humble leader enhances follower creativity through self-efficacy even in the COVID-19 pandemic. Furthermore, several studies were conducted on the concept of leader humility and leader proactive behavior. This study finds out how a leader's proactive personality positively moderates the relationship between follower self-efficacy and follower creativity. This study provides insights that humble leaders and proactive leaders are beneficial for the organization and try to identify opportunities and influence the environment through an innovation. The study highlights the importance of leader humility for creativity during COVID-19. Humble leaders express open learning and new and unique ideas from others (Owens et al., 2013). In that way, a humble leader cultivates follower creativity, which may articulate the innovation culture in the services industry (i.e., banking sector).

Implications of This Study

Theoretically, the current study describes new insights toward the literature on leader humility and its boundless favorable influences on follower behavior during COVID-19. This

study is an extension of the literature on leadership that leaders may enhance follower creativity based on social information processing. Furthermore, it advances the literature on leader humility by focusing on individuals, improving organizational outcomes, and leading toward innovation and social sustainability. Based on the social cognitive theory, humble leaders build interpersonal relations and appreciate others, enhancing follower outcomes. For instance, leader humility augments follower self-efficacy. Moreover, it pays attention to follower behavior instead of focusing on organizational outcomes. This research can be fruitful for scholars to further explore the unrevealed aspect of leader humility. This study also contributes to investigation of the intervening mechanism of follower self-efficacy. However, creative self-efficacy is proven to be a motivational mechanism for leader and follower relationships (He et al., 2020).

We empirically proved that follower self-efficacy strengthens the relation between leader humility and follower creativity. This study again proves that self-efficacy is an intervening mechanism during COVID-19. In a stressful situation, self-efficacy works as a motivational factor. It also shows the importance of leader humility how humble leaders maintain their followers' capability and confidence to perform a task in a pandemic. COVID-19 creates a depressing environment everywhere and causes mental health issues. Leader humility can deal with such a depressing situation. When leaders are proactive, the relation between follower self-efficacy and follower creativity is stronger. It extends the literature by incorporating that a proactive person not only controls the dynamic environment but also help others to cope with uncertainty, such as proactive person shapes the climate, which encourages follower self-efficacy, which in turn influence follower creativity. Hence, it is proven that a leader's proactive personality influences his personality and improves his followers.

According to the social cognitive theory, proactive people can control the environment. In COVID-19, it is a big challenge for every organization how to deal with this uncertain environment. This study reveals that a proactive person can control business activities in a pandemic situation. A proactive person can secure the psychological resources and their strength. Practically, this study has various implications for practitioners and policymakers of the service sector, particularly the banking sector. The humble leader can achieve pecuniary advantages and human, social, and ethical outcomes as humility is a moral issue. In the vivacious environment, the main objective is to gain a financial advantage and consider ethical matters as humble leaders promote them. The organization should embrace an environment, which encourages leader humility and leader proactive behavior. Leaders or managers should support an environment that allows the follower to give unique and novel ideas. This study embarks that managers should promote leader-follower self-efficacy.

No doubt, leader humility has a positive impact on creativity. However, there is a need to take advantage of leader humility using different tools. Organizations should arrange a training program for a leader for promoting leader humility and proactive personality. The human mind is proactive and creative; when organizations give proper training, they will take advantage

of proactive and humble leaders at the right time. Global competition stimulates organizations to be innovative and socially sustainable. In a vibrant environment, policymakers should pay attention to competition for survival. Furthermore, the COVID-19 pandemic drastically affects the organizations, and employees are critical for survival in the work environment. When followers have the confidence to perform a specific task and have the authority to take a risk, this leads to follower creativity. In the workplace, the organization should promote creativity for dealing with an uncertain business environment. A humble leader endorses follower self-efficacy, which leads to follower creativity. Hence, the findings emphasize that the management should develop a recruitment policy that promotes employee creativity, innovation, and social sustainability regardless of the restrictions (i.e., lockdowns and social distancing).

CONCLUSION

By adopting the social cognitive and social information processing theory, this study provides evidence that leader humility, directly and indirectly, influences follower behavior during the coronavirus pandemic, such as leader humility has a positive impact on follower self-efficacy and creativity. This research also demonstrated a relation of follower self-efficacy with follower creativity. We explore the intervening mechanism of follower self-efficacy. Further, we describe that a leader's proactive personality moderates the relationship between follower self-efficacy and follower creativity. We empirically provide evidence that leader humility and a leader's proactive personality positively impact followers and organizations in panic environments (the COVID-19 pandemic). These findings highlight the importance of leader humility and a leader's proactive behavior for creativity at the workplace. Organizations need to focus not only on the leader but also on the follower to gain a competitive advantage in a dynamic situation.

Limitations and Research Directions

Regardless of several implications, strengths, and contributions to the literature, there are also some limitations. *First*, this study focused on the service sector (i.e., banking sector) only. Hence, the results cannot be generalized for the manufacturing industry. More specifically, the banking sector cannot measure creativity as measured in the high-tech industry. However, future research may be conducted in the industries that are highly dynamic and innovative (i.e., technology industry). *Second*, in this study, many aspects remained unexplained (i.e., hierarchical levels). For instance, the CEO may impose a strategy that limits the leader power. Researchers are unable to rule out the probability of the influence of organization hierarchical levels. Future research can consider the effect of the hierarchical level on follower behavior, i.e., visionary leadership. *Third*, we collected the data at once (i.e., cross-sectional design). However, a cross-sectional design may not support casual relations between leader humility and follower creativity *via* follower self-efficacy. In the future, researchers can explore the causal effect of leader humility on followers' behavior

and a moderating effect of proactive behavior using a longitudinal design. *Finally*, in this study, follower self-efficacy is used as a mediator. We focused on the humility leadership influences and creativity *via* follower self-efficacy. The result indicates that a mediation path is partially supported. Future research can use creative self-efficacy as a mediator that may attenuate or accentuate the effect of leader humility on follower creativity.

DATA AVAILABILITY STATEMENT

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

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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

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

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Impact of COVID-19 and Consortium Factors on Mental Health: Role of Emotional Labor Strategies in Achieving Sustainable Development Goals

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The COVID-19 pandemic that began in 2019 has created an acute fear of economic crisis, and people have experienced the state of perceived job insecurity. Several measures were taken to control this deadly pandemic, but it still affected the majority of global operational activities. This study addresses the United Nation's Sustainable Development Goal (SDG) number 8 that relates to decent work and economic growth. This quantitative study examines the impact of fear associated with economic crisis and perceived job insecurity on mental health with the moderating effect of surface and deep acting. Surface acting is displaying fake emotions, and deep acting is modifying inner feelings according to the required emotions. This study used sample data from private-sector employees and applied SmartPLS for structural model assessment. As many organizations took more challenging decisions to sustain their business operations, the study therefore analyzes the impact of the pandemic on private sector employees. The two main findings of the study are: (i) surface acting moderates the relationships of fear of economic crisis and perceived job insecurity with mental health and declines the impact of both on mental health, (ii) while deep acting negatively moderates the relationships of fear of economic crisis and perceived job insecurity with mental health and improved mental health even in the presence of both. The study highlighted the importance of deep acting at workplaces to sustain employees' mental and psychological stability. Organizations could introduce emotional labor strategies and strengthen the mental health of their employees against the underlying fear of economic crisis and perceived job insecurity.

Keywords: COVID-19, SDG 8, mental health, fear of economic crisis, perceived job insecurity, surface acting, deep acting

INTRODUCTION

At the end of 2019, an unknown pneumonia was detected in Wuhan, Hubei province of China, that was caused by a microbial pathogen. Subsequently, a new virus was identified and named coronavirus or COVID-19. Globally, this infectious virus has become a threat to the general public and consequently other countries cut themselves off from China. After that,

on January 30, 2020, the World Health Organization (WHO) declared the occurrence of the new coronavirus as an epidemic and imposed a public health emergency of international concern (Gao and Liu, 2020). The new coronavirus spread in a drastic and unpredictable manner not seen before in recent history. Serrano-Ripoll et al. (2020) highlighted the impact of epidemic outbreaks on mental and psychological health through the consortium effect of factors like lack of social support, stigmatization, working in a high-risk environment, and specific occupational roles. In addition, Nicola et al. (2020) stated that due to the new coronavirus, billions of people were facing financial crisis in the form of loss of income and sustained social isolation in the form of full or partial lockdowns, which affected their mental health.

To respond to such a huge challenge, governments in each country organized awareness programs, i.e., public service messages about precautionary measures to spread information about the possible effects of such a contagious pandemics on a large scale (Lu et al., 2020). Different studies have demonstrated that people who directly suffered from this infectious virus retained a higher rate of depression, anxiety, and other psychological problems (James et al., 2020; Wilson et al., 2020). These psychological problems are caused by fear of potential exposure to infection on one hand and fear of financial instability on the other. In both cases, the mental health of people is at danger and authorities seem to be compromising on or ignoring these facts. Perceived job insecurity and fear of economic crisis are significant psychological reasons for the increased mental anguish from which the majority of the world's population experienced during the pandemic (Gardner and Moallef, 2015; James et al., 2020; Serrano-Ripoll et al., 2020). In April 2020, an increase of 14.7% in the unemployment rate was observed, which is higher than ever before in history (Xue and Li, 2020). Due to false perceptions and acceptance of unknown fears, people either lost their jobs or job compensations like benefits, promotions, and incremental advantages (Margerison-Zilko et al., 2016; Forbes and Krueger, 2019).

During this stressful period, people took additional jobs to meet their household expenses (Forbes and Krueger, 2019). Such circumstances caused anxiety and depression. Over time, COVID-19 has contributed to mental and psychological instability and society's distress. Earlier research proved that pandemics directed the general public toward experiencing stress disorders closely related to depression and anxiety (Liang et al., 2020). More often, globally, it was acknowledged that top-level organizational managers must understand their employee's mental well-being status. As employees' mental and psychological stability fluctuates under unusual conditions, the management of these circumstances is an essential ingredient of organizational performance. Therefore, managers have to work diligently and devise strategies to manage emotional labor and prevent employees from being mentally exhausted.

The United Nations outlined 17 SDGs to provide decent healthy lives for everyone on the planet by 2030. The major challenge is to achieve these development goals in their entirety. The challenges are harder for developing economies (Population Matters, 2021). SDG 8 deals with decent work and economic growth; the goal's scope is so broad that it deals with the economic

growth potential of developing economies. SDG 8 requires an improved, healthy, and innovative working environment that contributes significantly to economic growth. It entails workforces' demographics, which provide growth potential for the economy. Mental health is the critical determinant of workforce well-being. COVID-19 with the additional effect of fear of economic crisis and perceived job insecurity has affected people's mental health. However, emotional labor strategies provide implications for the workforces' mental health, leading to the impediment of achieving the decent work objective of SDG 8. Emotional labor strategies are emotions that employees can display at work to affect emotions. Both emotional labor strategies require you to exhibit a smile on your face or display friendly behavior to retain customers. Both can be improved by training the employees (Rehman et al., 2021). Therefore, both can significantly impact mental health due to their moderating nature. Deep acting is the display of desired emotions by changing inner emotions, and it includes feelings and expressions, reducing the negative impact on mental health. Comparatively, employees modify their facial expressions in surface acting without changing their inner feelings. It is about faking positive emotions and suppressing negative emotions (Chi and Grandey, 2019). Although it seems complicated to achieve the world development goals by 2030 during a pandemic, this study provides ways to curb these impediments. The study aims to devise a model to test the impact of fear of economic crisis and perceived job insecurity on mental health with the moderating effect of emotional labor strategies.

This pandemic is unique in nature. However, people have to account for depression and anxiety to tackle such circumstances, as the cure for this contagious disease is still in progress by health practitioners. Evidence proved that pandemics affected mental and psychological health unsympathetically, leading people toward stress, anxiety, and depression as each organization seemed to be victimized by the influential impact of COVID-19 (Khanchel, 2021). In this regard, organizations took corrective measures to sustain their business operations and switched to cost-cutting formats like reduction in administrative expenses, cutting off existing employees' pay, and termination of employees from both temporary and permanent positions. Prior studies showed that such circumstances affect the performance and mental stability of employees.

This pandemic caused severe fear of the economic crisis faced globally. Whenever crises are spread, evidence shows that people face reduction in income due to cut-offs in their earnings, and with the extended existence of pandemics, these reductions led people to different kinds of psychological fears like fear of an economic crisis.

The primary purpose of conducting this quantitative study is to document the theoretical as well as empirical gap between fear of economic crisis and perceived job insecurity on mental health via moderation of emotional labor strategies, i.e., surface acting and deep acting, and the entire conceptual model is done in the context of COVID-19. Deep acting is the display of desired emotions by changing inner emotions, and in surface acting, employees modify their facial expressions without changing their feelings. In the guidance of the research gap, this study attempted

to address the following research questions: (i) Does the fear of economic crisis and perceived job insecurity impact employees' mental health during COVID-19? and (ii) Do emotional labor strategies play a role in mitigating the impact of fear of economic crisis and perceived job insecurity on employees' mental health? The study's findings may likely contribute to the development of organizational strategies, programs, and policies, and promote equitable access by helping managers prevent their employees from worrying about perceived job insecurity and fear of economic crisis, especially in times of crises or unusual circumstances. Secondly, this study will contribute a comprehensive addition to the body of existing literature as corporate and service sectors are never studied by the researchers from the emotional labor strategies' viewpoint in the context of COVID-19.

This quantitative study will give ample evidence to account for the significant impacts of a pandemic on corporate and service sectors to analyze the people's financial, mental, and psychological sufferings under unusual circumstances. The research was carried out in the contextual framework of Pakistan, where the people are in a state of perceived job insecurity and fear of economic crisis due to the global pandemic. As most countries are facing the same crisis, this study will also set useful parameters for other developing countries. The research will help people sustain their current jobs without engaging with stress or any further mental instability. This study is proposed to set a newer perspective on how people's mental and psychological stability can be sustained under unusual and unpredictable circumstances, which is an essential ingredient for organizations' best performance.

Studying this model will extend the literature by directly highlighting the components affecting mental and psychological stability under unusual circumstances. Furthermore, this study provides evidence to understand the factors influencing the mental and psychological sufferings of the private sector. There is a need to deploy strategies to better help employees in pandemics to perform better by diminishing the undue fears and false perceptions.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Perceived job insecurity is an issue that prevails at the societal level and individual level in difficult times. Employees become more sensitive to their jobs if they perceive that organizations are carrying out lay-offs due to the prevailing situation. This phenomenon has been explained in uncertainty management theory as a guiding principle (Lind and Van den Bos, 2002). This theory explains that employees become more vulnerable and sensitive during uncertain times; therefore, organizations need to be more thoughtful and considerate. Aneshensel (1992) explained the reaction of individuals and their linked families when they face stress, and that those periods of stress and anxiety could badly affect their psychological and mental health. Crises affect everyone in society, and people tackle and respond in varied ways, but the organizations handling difficult conditions should be mature and structured in terms of strategies.

Fear of Economic Crisis and Mental Health

One of the major threats to people's general health is the fear of economic crisis (Odone et al., 2018). Over the last couple of years, an extreme increase in mental and psychological suffering has been recorded. As the current ongoing pandemic started in 2019, it continues to be inflated in different countries. At time of the commencement of pandemic, past experiences were being followed; later on, experts concluded that the contemporary pandemic is unique in nature and there is no such precedence available in the literature (Spinelli et al., 2020).

Since it is the most severe fear of economic crisis that has been faced globally in recent history, generally, it is assessed that the consequences of fear of economic crisis are different in nature. Whenever crises are spread abruptly, evidence shows that people face reduction in income, cut-offs to their earnings, and have interruptions in their service delivery places (Glonti et al., 2015). Reduction in income leads people to unemployment and different kinds of mental and psychological sufferings through their congested or low-income budgets. Consequently, people start compromising their internal sufferings at the cost of managing their household expenses (Van Bortel et al., 2016).

Youth unemployment has become an emergent challenge (Elder and Rosas, 2015). According to statistics from the World Bank, the unemployment rate of developing countries was 5.373 in 2019, while it became 6.471 at the end of 2020 with an increase of 1.098 (The World Bank, 2021). Research evidence says that employees' mental health can adversely be affected by the economic crisis prevailing in the country (Frasquilho et al., 2015; Silove et al., 2017; Wang et al., 2021). Many studies also linked income loss, lack of finances, and unemployment with employees' mental health (Warr, 1987; Taris, 2002; Paul and Moser, 2009). Thus, a hypothesis with a positive relationship has been proposed based on the above arguments.

H1: There is a positive relationship between fear of economic crisis and mental health.

Perceived Job Insecurity and Mental Health

Over the last few years, globalization has put a strain on the labor market. The ongoing pandemic has triggered an abrupt crisis in all industries; these industries include finance and insurance, health care, social assistance, construction, art, entertainment, tourism, industrial production, and manufacturing units (Chang et al., 2020). During the pandemic, such industries were affected entirely or partially by lower demands, lower production, and higher cost of raw materials. As a result, organizations were compelled to take retributive decisions by cutting off their expenses for future standings; such decisions directly concerned the lower and middle-income level employees. Therefore, these decisions resulted in job loss or increased perceived job insecurity among the workers (Griep et al., 2016; Chapman et al., 2020; Blanuša et al., 2021).

Job insecurity is connected with stress and negative emotions (Ashford et al., 1989; Lim, 1996). Therefore, enough evidence is

available to demonstrate that a person's perceived job insecurity is linked to stress and anxiety (Schaufeli, 2016; Menéndez-Espina et al., 2019; Zhang et al., 2020). Furthermore, it has become worse for those who were working with industries those are highly affected by complete or partial shutdowns (Wilson et al., 2020). Thus, a hypothesis with a positive relationship has been proposed based on the above arguments.

H2: There is a positive relationship between perceived job insecurity and mental health.

The Moderating Role of Emotional Labor Strategies

Emotional labor strategy is associated with the control of feelings to generate both facial and bodily displays that can be observed visibly. The conceptual framework of emotional labor has been segregated into three major categories: (i) surface acting, (ii) deep acting, and (iii) genuine acting (Diefendorff et al., 2005). Emotional labor strategies are the variety of employees' emotions that employees can display at work to change emotions. Both emotional labor strategies require exhibiting a smile on the face or displaying friendly behavior to retain customers. Both can be improved by training the employees (Rehman et al., 2021). Therefore, both can significantly impact in upgrading mental health due to their moderating nature.

Nowadays, employees' mental health management is a challenge for organizations (Odone et al., 2018). The last 2 years were challenging, as the world was passing through the state of such a pandemic whose outcomes were unique and diverted many times to date. Despite the availability of numerous studies on viral infections, there was a substantial deficiency in classifying the virus at its commencement phase (Glonti et al., 2015). While the consequences of the pandemic affect all sectors, private sectors were most affected in terms of remunerations, incomes, and benefits. Subsequently, employees have undergone a state of perceived job insecurity and got stress, anxiety, and depression (Wilson et al., 2020).

Surface acting describes how an individual can manipulate or fake emotion according to the required standards set by the organization. If the emotions are genuinely displayed by an individual and can be confirmed by the observer, then it can be said that the set standards are being followed in actual letter and spirit, while the surface acting designates the extent to which one should hide emotions while dealing with the customers (Chi and Grandey, 2019; Rehman et al., 2021). Such fake display of emotions does not alter the inner feelings adequately but used to meet the display rules in organization's context.

However, available literature and studies or theories have no prescribed evidence of genuine acting, the third category of emotional labor strategies (Diefendorff et al., 2005). In our current study, the first two strategies holding theoretical bases are considered for their valuable impact on mental and psychological suffering.

Deep acting designates the extent to which one keeps trying to improve his mood and deals with the inner-self or emotions (Chi and Grandey, 2019). An individual displays their inner feeling purely while dealing with customers (Lee and Chelladurai,

2018; Rehman et al., 2021). It is experiential that individuals' positive emotions have been overlapping with the negative ones so that they may not be able to approach the standards set by the organization (Grandey, 2000). Thus, based on the above arguments, the following hypotheses are stated:

H3a: Surface acting moderates the relationship between fear of economic crisis and mental health.

H3b: Surface acting moderates the relationship between perceived job insecurity and mental health.

H4a: Deep acting moderates the relationship between fear of economic crisis and mental health.

H4b: Deep acting moderates the relationship between perceived job insecurity and mental health.

In light of the above literature review and development of proposed hypotheses, a conceptual model (**Figure 1**) has been framed out.

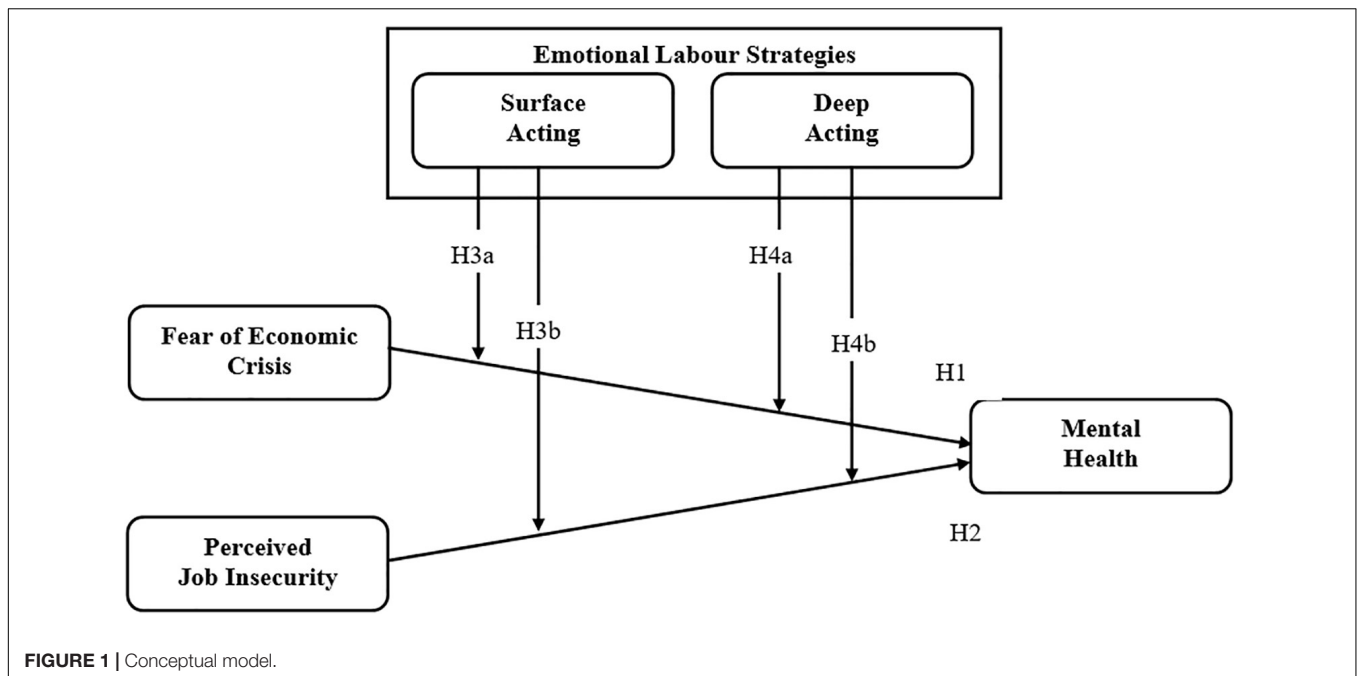
MATERIALS AND METHODS

Participants

Primary data is collected through a questionnaire survey technique and data is collected from classified staff and administrative professionals of the underlying private sector. These professionals are rendering their services in the banking sector, call centers, educational institutions, and the paramedical institution. All the staff and administrative professionals have responded as per their appreciable cooperation through online questionnaires where the condition of anonymity has been assured. The Google questionnaire was also sent directly to potential respondents for participation in the study. Some of the respondents were associated with service call centers, whose jobs are linked with specific weekly, monthly, quarterly, and annual sales-based targets, and decline in their net sales have raised job insecurity. This economic class stratum is more vulnerable to the ongoing pandemic because most potential customers were turned into cautious ones. Generally, the future is still unpredictable under updated circumstances.

Procedure

To determine the required number of respondents of the data set, two methods were used. Firstly, the response rate is calculated by "G*power" of version (3.1.9.2) with 99% power, Multiple Correlation (R) with 0.30, and at the two-tailed significant levels of 0.05. In this way, the figure of 110 responses was determined. The purpose of using this software is to assure the suitable predictable power of the constructs of the underlying population. Second, the response rate is also calculated by the 10:1 criterion (Hair, 2010). By adopting this strategy, the numbers of items of all the constructs are multiplied by 10. This current study has four variables holding 32 items ($32 \times 10 = 320$), which were acknowledgeable for precise and smooth analysis. The data for this quantitative study is collected through a simple random sampling technique of the underlying population. All the private service sector population had an equal chance to contribute their valuable participation to establish the authenticity of



the study. Using simple random sampling technique is cost-effective and accommodates the researcher from all possible time constraints. Four hundred seventy staff members and administrative professionals were supposed to participate. Based on these respondents, 320 participants responded, and the response rate was 68%, whereas the remaining 32% did not contribute to the study.

Survey Development

Respondents were requested to record their responses to the English language survey questionnaire. The online “Google Form” survey technique was carried out by considering the severe third wave of COVID-19. In the current and ongoing scenarios, where people are getting exposed to this viral infection more rapidly, Google Forms is an excellent and comprehensive tool that enables researchers to access the respondent in a more precise manner.

The questionnaire was prepared through Google Form and circulated online. To make the questionnaire more precise, an introductory paragraph at the commencement of the questionnaire was mentioned to motivate participants and give them assurance regarding the anonymity of provided data. Online modes were taken to circulate the information regarding participation in the study, such as Facebook, Messenger, and WhatsApp groups; upon receipt of consent by probable participants, the questionnaire link was shared. The questionnaire survey was conducted in April 2021.

Furthermore, it was mandatory to answer all the items of contributed latent constructs; by taking this initiative, the prepared database was free from missing values. Data was input to Excel and imported on Statistical Package for Social Sciences (SPSS) of version 24 for screening. Using SPSS, missing values, outliers, skewness and kurtosis, and standard data distribution

were tested. After that, the retrieved database was imported into SmartPLS of version (3.2) for measurement and structural model assessments.

The entire questionnaire was segregated into five sections; the first section holds the data related to demographical measures, including gender, age, qualification, and individual job level. Its assessment is carried out on a nominal scale. In the rest of the sections, respondents were asked about the constructs of the study, i.e., fear of economic crisis, perceived job insecurity, emotional labor strategies, and mental health carried out through their respective number of items of 4, 7, 8, and 12. The established 5-point Likert scale was used for four latent constructs to measure their intensity. In the online data collection, respondents were free to rate the extent of their own feelings and emotions. There were no missing values or responses, as the respondent needed to answer all the given questions to proceed further.

Most of the time, collected data from a single source causes common method biases. To precisely control the common method bias, the questionnaire was evaluated by applying the different methods to ensure inconspicuousness and that the answers are in the form of their respective demographical category and respondents are free to choose purely according to their feelings (Podsakoff et al., 2003; Hao and Lirong, 2004).

Fear of Economic Crisis

Fear of economic crisis was measured using a four-item scale [by Giorgi et al. (2015)] on a 5-point Likert scale from strongly disagree (1) to strongly agree (5).

Perceived Job Insecurity

Perceived job insecurity was measured using a seven-item scale [by Kinnunen et al. (1999)] on 5-point Likert scale from strongly disagree (1) to strongly agree (5).

Mental Health

Mental health was measured using a 12-items scale taken from the General Health Questionnaire (GHQ-12), which was designed to diagnose the psychiatric disorder among people [by Montazeri et al. (2003)] on a five-point Likert scale from strongly disagree (1) to strongly agree (5).

Surface Acting

Surface acting was measured using a four-item scale [by Diefendorff et al. (2005)] on a five-point Likert scale from strongly disagree (1) to strongly agree (5).

Deep Acting

Deep acting was measured using a four-item scale [by Diefendorff et al. (2005)] on a 5-point Likert scale from strongly disagree (1) to strongly agree (5).

Data Analysis

Approximately 470 people were reached and 320 contributed to the study and filled out the survey. As shown in **Table 1**, majority of the respondents of the study were male, at 73% ($n = 320$), while females held the percentage of 27 ($n = 86$). According to age, 75% of respondents belong to the age group of (25–30) while a significant portion of respondents held Bachelor's degrees and provided their services in middle-level jobs (40 and 83%, respectively).

This study was conducted by considering the four measures which made up the model. The fear of economic crisis is an exogenous variable measured by four items (e.g., my organization is solid, although there is a fear of economic crisis). Adjustment of factor analysis, values of factor loadings, Average Variance Extracted, and constructs' reliability values were obtained by running the PLS algorithm (Hair, 2010). The outcome (**Table 2**) represents that all the values fall under the recommended criterion of having the Cronbach's alpha value higher than 0.7 while the consistent reliability is higher than the recommended

criterion of greater than 0.7. The value of the average variance extracted also falls under the suggested criterion of higher than 0.5 (Nunnally and Bernstein, 1994).

The second construct is perceived job insecurity, measured by putting its seven items under evaluation (e.g., the thought of getting fired rarely scares me). These items enable the respondent to analyze the possible and upcoming uncertainties regarding their prescribed jobs. These items were assessed by a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). Respondents were asked to rate the insecurities of their jobs under this recommended criterion. Output table constitutes that loadings are above 0.7, the value of AVE is greater than 0.5, while construct reliability is above 0.7 (Fornell and Larcker, 1981); all these mentioned values fall as per the suggested criteria.

Emotional labor strategies play a moderating role in the study; this strategy comprises of surface acting and deep acting. Surface acting assessed how people modified their moods and feelings within an organization. This modification aims to achieve the actual standards developed by the organization. Deep acting was introduced to assess an individual's inner feelings and thoughts separate to requirements while performing. Output table constitutes that loadings are above 0.7, the value of AVE is more significant than 0.5, while construct reliability is above 0.7 (Fornell and Larcker, 1981); all these mentioned values fall under the suggested criteria.

Mental health was measured by putting the general health questionnaire comprised of 12 items (e.g., I am unable to concentrate on my work). Assessment of concentration, pressure, depression, anxiety, loss of confidence, loss of sleep, and considering oneself as worthless was taken. Respondents were free to rate their mental and psychological sufferings at their optimal level. Output table constitutes that loadings are above 0.7, the value of AVE is more significant than 0.5, while construct reliability is above 0.7 (Fornell and Larcker, 1981); all these mentioned values fall under the proposed criteria.

RESULTS

In an adjusted model, discriminant validity is used to differentiate the measures of each construct from each other (Urbach and Ahlemann, 2010). According to Fornell and Larcker (1981), discriminant validity can be examined by comparing the potential overlapping of the constructs possible to assess by cross loading method (Chin and Newsted, 1999). Its implementation can be carried out by comparing indicators' outer loadings with their associated underlying constructs. According to the outcome (**Table 3**), the diagonal values are higher than their underlying constructs as per its recommended criterion.

According to Kline (2011), the threshold value for Heterotrait-Monotrait (HTMT) should be less than 0.85, and the outcome (**Table 4**) falls under this recommended criterion. Despite HTMT, a confidence interval is also required to assess where the upper and lower confidence interval should not include the digit of 1 (Henseler et al., 2015), also used to confirm discriminant validity.

Table 5 shows structural estimates and hypotheses status by defining Beta values, T statistics and p values where values

TABLE 1 | Respondents' profile.

Demographic characteristics		%
Gender	Male	72.8
	Female	27.2
Age	25–30	75.3
	31–35	3
	36–40	16.7
	41–45	4
	Above 46	1
Academic qualification	Intermediate	0
	Bachelor's	50
	Masters	40.1
	MPhil	9.3
Job level	Diploma	0.6
	Low level	8
	Middle level	83.3
	Higher level	8.6

TABLE 2 | Validity and reliability for constructs.

Constructs	Items	Loadings	CA	AVE	CR
Fear of economic crisis	I am scared that my organization is affected by the economic crisis	0.886	0.801	0.716	0.883
	I am scared that my organization, because of the economic crisis, is subjected to downsizing	0.849			
	The organizational future is unstable (unknown) because of the economic crisis	0.801			
	My organization is solid, although there is an economic crisis	0.115			
Perceived job insecurity	The thought of getting fired really scares me	0.808	0.817	0.646	0.879
	I am worried about the possibility of being fired.	0.890			
	Working hard would keep me from getting fired	0.456			
	If I get fired, I will not know how to tell people	0.711			
	If I do good work, my job will be safe.	0.674			
	I am so worried that I would do almost anything to keep my job	0.777			
	I am worried about the disgrace of being fired	0.731			
Surface acting	I fake a good mood when interacting with customers	0.840	0.806	0.628	0.871
	I put on a “show” or “performance” when interacting with customers	0.785			
	I pretend to have the emotions I need to display for my job	0.811			
Deep acting	I show feelings to the customers that are different from what I feel inside	0.730	0.880	0.731	0.916
	I try to actually experience emotions that I must show to customers	0.813			
	I make an effort to actually feel emotions that I need to show to the customers	0.870			
	I work at developing feelings inside of me that I need to show to the customers	0.906			
Mental health	I work hard to feel emotions that I need to show to the customers	0.828	0.945	0.644	0.952
	I am unable to concentrate on my work	0.778			
	I lost sleep over worry	0.741			
	I felt I am not playing a useful part in things	0.661			
	I felt incapable of making decisions	0.778			
	I felt constantly under strain and stress	0.828			
	I felt that I could not overcome difficulties	0.856			
	I am unable to enjoy day-to-day activities	0.766			
	I am not able to face problems	0.804			
	I am feeling unhappy and depressed	0.847			
	I have been losing confidence in myself	0.831			
	I have been thinking of myself as worthless	0.775			
	I am feeling reasonably unhappy	0.818			

TABLE 3 | Discriminant validity.

Constructs	DA	EC	MH	PJI	SA
DA	0.855				
EC	0.261	0.718			
MH	0.193	0.420	0.791		
PJI	0.267	0.532	0.550	0.71	
SA	0.368	0.334	0.318	0.369	0.793

TABLE 4 | Heterotrait-Monotrait (HTMT).

Constructs	DA	EC	MH	PJI	SA
DA					
EC	0.333				
MH	0.192	0.5			
PJI	0.309	0.632	0.585		
SA	0.456	0.438	0.345	0.435	

interlinked with H1 ($\beta = 0.415$, $p < 0.01$) and H2 ($\beta = 0.352$, $p < 0.001$) showed that the first two hypotheses are true as both fear of economic crisis and perceived job insecurity have a significant positive impact on mental health.

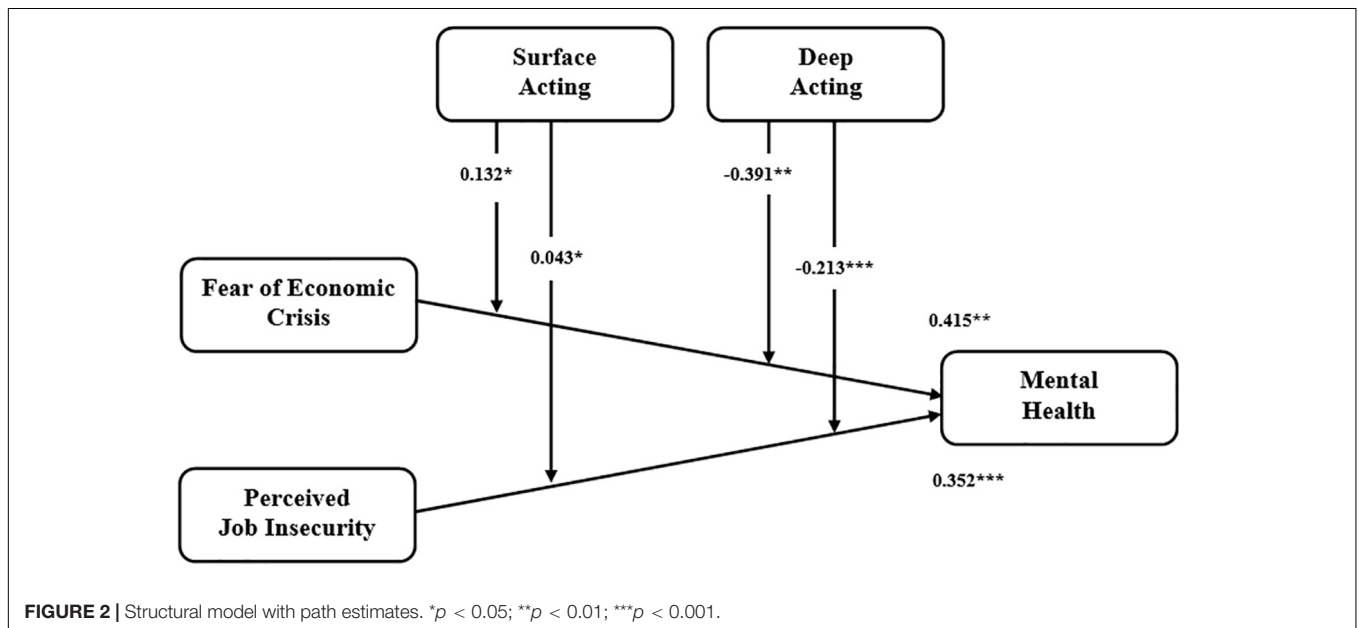
Next, hypotheses are developed under consideration of the moderating impact of surface acting and deep acting, respectively. H3a ($\beta = 0.043$, $p < 0.05$) showed that surface acting moderates the relation between fear of economic crisis and mental health, and H3b described that surface acting moderates the relation between perceived job insecurity and mental health ($\beta = 0.0132$, $p < 0.05$), so the proposed hypotheses are accepted. Results showed that surface acting reduced the effect of economic crisis and perceived job insecurity on mental health. As a result, a considerable fall in mental health values seem to be noted. To examine the moderating role of deep acting on the economic crisis and perceived job insecurity to mental health, H4a and H4b were designed. Results showed ($\beta = -0.213$, $p < 0.001$) that deep acting negatively moderates the relationship of economic crisis and mental health, and deep acting strategy converted the negative feeling into positive feelings. At the same time, H4b also displayed the same results and described that ($\beta = -0.391$, $p < 0.01$) deep acting negatively moderates the relationship of perceived job insecurity and mental health. A positive increase in mental health has been observed by moderating emotional labor strategies.

According to Urbach and Ahlemann (2010), the value of R-square should be high enough to get the minimum level of

TABLE 5 | Structural estimates.

Hypotheses	Beta	T statistics	P-values	Decision
H1: Fear of economic crisis->Mental health	0.415	2.495	0.01**	Accepted
H2: Perceived job insecurity->Mental health	0.352	4.606	0.001***	Accepted
H3a: Fear of economic crisis × Surface acting->Mental health	0.043	1.980	0.05*	Accepted
H3b: Perceived job insecurity × Surface acting->Mental health	0.132	3.570	0.05*	Accepted
H4a: Fear of economic crisis × Deep acting->Mental health	(0.213)	2.213	0.001***	Accepted
H4b: Perceived job insecurity × Deep acting->Mental health	(0.391)	3.903	0.01**	Accepted

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.



explanatory power. Mental health is influenced by economic crises and perceived job insecurity and presents the value of 0.358 and 0.324 of R -square and adjusted R -square, respectively (Figure 2). The value of t -statistics must be greater than 1.96 at the 95% confidence level; all the proposed hypotheses followed this threshold value. The obtained figure for f -square is 0.174 which falls at the moderate level of behavior of each construct within the adjusted model. The recommended benchmarks are 0.02, 0.15, and 0.35, considered as small, medium, and large, respectively (Hair et al., 2014). The obtained figure of Q -square is 0.198, which should be greater than 0 from the threshold criterion and measures predictive relevance for a specific construct within the model (Fornell and Larcker, 1981; Chin, 2010; Hair et al., 2013). SRMR showed the value of 0.079 while its NFI value is 0.91 as per a criterion of greater than 0.90.

DISCUSSION

The available studies are insufficient to assess the secondary impact of COVID-19 in its multiple inflows of waves. Many studies have focused on the consequences of isolation, mental health, shortcomings, and financial instabilities (Douglas et al., 2020; Marsden et al., 2020). As people are facing the threat of

job loss or drastic changes at their workplaces, evidence from China has shown that people are directed toward new kinds of addictions such as excessive use of the internet. Statistical measures described that an increase of 46.8% in the usage of internet has been observed while 23% of people have severe internet addictions. Furthermore, people started to abruptly take other injurious materials like alcohol, and alcohol relapse was noted among ex-drinks (Sun et al., 2020).

Despite numerous studies on the combination of fear of economic crisis and perceived job insecurity, this study has proposed a model on recent influential bearings of COVID-19. Firstly, the study described the origin of COVID-19 and showed the pandemic transmission under the consequences of lockdowns and imposed barriers. Due to ongoing pandemics, the study demonstrated that people experienced stress, depression, and anxiety under unusual circumstances. As a result, their attention started to revolve around whether their current positions were safe or not. People often neglect this factor to sustain their current and available opportunities, jobs, and incomes. The conducted study contributes to the body of knowledge on mental instability of working people. Due to the pandemic, these working conditions downgraded people's mental health and hurt the working environment of the overall workforce (SDG 8).

The study persisted in answering the research questions by highlighting the factors that affected fear of economic crisis and perceived job insecurity, which silently impact the mental and psychological health of an employee (Lind and Van den Bos, 2002), and how emotional labor strategies (surface acting and deep acting) moderate the relationship of fear of economic crisis and perceived job insecurity with mental health (Rehman et al., 2021). The study fulfilled its objective by examining its impact in the context of COVID-19. The purpose of the study is to provide a roadmap about the ongoing pandemic and its resulting fear of economic crisis and perception of job insecurity for senior management to strengthen and revise their policies in the context of emotional labor strategies that can enhance the mental health of organizational members.

This study sustained the results of earlier studies that showed fear of economic crisis can badly damage an employee's mental health (Frasquilho et al., 2015; Silove et al., 2017; Wang et al., 2021). Similarly, the findings of this study are also in line with the literature about the relationship between perceived job insecurity and mental health (Menéndez-Espina et al., 2019; Zhang et al., 2020). The current study also successfully highlighted the positive impact of emotional labor strategies as per the literature studies (Chi and Grandey, 2019; Rehman et al., 2021). The study's findings filled the research gap and highlighted the moderating role of emotional labor strategies, which is the main contribution of the study. This moderation impact was never before studied in the literature on COVID-19 and achieving UN SDG 8. The current study has increased the responsibility of policymakers and senior managers' in designing strategies that constructively improve employees' behaviors to have a decent work environment. A healthier workforce can be achieved by adopting adequate measures of social protection systems, as employees' mental health is an asset of each organization, which is the critical determinant of a decent working environment. In this way, organizations should provide training to their concerned managers; managers must provide optimum confidence to their respective employees about the constancy of the existence of their current positions. Upper management should keenly monitor their emotions and expressions to make employees confident enough that their jobs are also secured in the situation of a crisis. Therefore, employees should develop a common practice of putting aside their inner feelings and personal emotions and trying to mitigate the gap between their inner and apparent emotions because their remunerations and continuation of the jobs are highly dependent on the emotional labor strategies.

Professionals like cashiers, call center employees, receptionists, bus drivers, actors, nurses, and teachers, where the employees directly interact with customers and strangers, often need emotional labor strategies for better social interactions. Humans cannot interact with an anonymous audience and put aside their disturbances, inner feelings, and emotions because inner expressions are naturally displayed in facial expressions and body language. Therefore, in uncertain situations, employees are to be confident enough and ready to accept the circumstances as a challenge and try their best to improve their mental health on the way for sustainability. The support and policies at a governmental level can also reduce fears and job insecurities and

boost the workforce's confidence to work effectively. It ultimately creates a decent working environment and leads toward economic growth to achieve the United Nations Sustainable Development Goals.

Limitations and Future Research Directions

The conducted study has some limitations. Firstly, a small sample and random sampling technique were used due to dependence on social media channels. Second, the imbalanced distribution of gender may cause gender discrimination biases because a significant portion of the respondents was comprised of males (73%). There is the possibility of a change in statistical values with the changing proportion of gender. The limitation of gender discrimination bias can be used as the future direction of the study.

The study narrowed down one aspect of decent work and economic growth of SDG 8 to mental health, job insecurity, and fear of economic crisis. This research opens avenues to research in various aspects of mental health and job insecurities to enhance the well-being of the workplace, such as SDG 8 regarding gender inequality in the workforce discussed by Rai et al. (2019). This could be discussed and analyzed in future research.

Future researchers have an opportunity of evaluating the subject as a whole. Moreover, the current model has the flexibility to be tested and adjusted to analyze variable constructs like moderating impact of motivation.

CONCLUSION

COVID-19 was a worldwide crisis that led to the declaration by WHO of a global emergency. The infectious virus is perilous and unique in nature. Several barriers were imposed to control the further dispersion of the virus. People, organizations, institutions, and statutory bodies are suffering various kinds of challenges as a consequence of these barriers. Subsequently, people have undergone various kinds of mental and psychological disorders that have severe impacts. We have concluded the significant negative impact of COVID-19 with the consortium effect of economic crises and job insecurity on mental health. It posits important implications for SDG 8 to consider these variables in order to achieve workers well-being goals by 2030. This study reports the labor strategies as the solution for the adverse effects of COVID-19, economic crises, and job insecurity on mental health. The study proves that deep acting strategies create positive mental health in COVID-19 situations in fear of economic crisis and job insecurities. Surface acting has a minor impact and reduces the severity of independent variables, but deep acting is the significant variable to consider because it affects workers' mental health and alters the negative impact of adverse circumstances into positive.

Implications of Study

This study provides solid practical implications for sustainable development goals that are to be achieved by 2030 and theoretical

implications by making an addition to the body of existing literature as corporate and service sectors are never studied by the researchers from an emotional labor strategies viewpoint in the perspective COVID-19. SDG 8 deals with decent work and economic growth, and a healthy workforce is imperative to achieve these goals. The study's results show that governments in underdeveloped countries should develop deep acting strategies to have a mentally strong workforce. In the pandemic, a high rate of job insecurity could be counteracted by deep acting strategy which provide a significantly positive effect on mental health. A mentally strong workforce creates decent work and contributes significantly to economic growth. The policymakers and governmental and international bodies should consider deep acting strategies in workforce policies and to cope with the adverse pandemic and economic situations.

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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/s.

AUTHOR CONTRIBUTIONS

SR contributed to writing, conceptualizing, and analyzing the data. MH performed the literature review and research design. AN contributed to correspondence, discussion, and methodology. AU contributed to defining and writing implications, and overall proofreading. NA performed data collection, analysis, and references. All authors contributed to the article and approved the submitted version.

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Linkages Between Knowledge Management Process and Corporate Sustainable Performance of Chinese Small and Medium Enterprises: Mediating Role of Frugal Innovation

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In the contemporary world, frugal innovation (FI) is the most discussed area to enhance corporate sustainable performance (CSP) in manufacturing firms. The knowledge management process (KMP) is also a key determinant of FI. Existing literature is limited to knowledge management (KM) and its impact on CSP. This study aims to determine the effect of the KMP (acquisition, dissemination, and application) on sustainable corporate performance with the association of FI. The survey method was used to collect data from 356 small and medium enterprises (SMEs) in China. Structure equation modeling was applied to obtain the results of collected data. Results show that all three dimensions of KM have a significant impact on CSP. Furthermore, FI also has a significant and positive impact on CSP. Results further show that FI partially mediates the relationship of the knowledge dissemination, knowledge application and sustainable corporate performance but no mediation role FI was found between knowledge acquisition and CSP. The findings of this study will provide useful insights for experts and manufacturers. It will help to understand the role of KM in their organizational behavior by being an economical manufacturing process. This study underscored the importance of the KMP to policymakers. In countries such as China that have global orders, KM is an essential determinant of FI. KM is a tool used to achieve CSP goals inside and outside of an enterprise, thus the development firms need to focus on KM.

Keywords: corporate sustainable performance, frugal innovation, knowledge management, SMEs, China

INTRODUCTION

A company's success or failure depends on its knowledge. Knowledge is an intangible asset. Organizations taking the dynamic approach use it as a tool to enhance customer satisfaction and effectively compete against their competitors (Areed et al., 2021). As a result of its growing popularity in recent decades in the business world, knowledge management (KM) has been recognized as a vital element in the development of strategy, products, and services, as well as managing organizational processes. Innovation and effectiveness are enhanced by effective KM. Due to this advantage, KM has become a strategic resource for many organizations, enabling them to surpass their competitors (Lam et al., 2021). A significant component of knowledge management

processes' (KMP's) design and development of new products and services is its management of operational processes in the current business environment. KM strategies are being adopted by organizations to achieve sustainable goals. A successful and sustainable economy relies largely on the contribution of human intellectual capital (Mohsin et al., 2021; Patel et al., 2021). In addition to helping organizations build up the capabilities required for frugal innovation (FI), KMP also assists organizations in developing a culture of corporate sustainable performance (CSP). In the development of economical products, KMP has contributed to the development of FI. KMP can, therefore, prove crucial to achieving CSP. Firms' ability to innovate sustainably depends on their knowledge resources and capabilities (Chopra et al., 2021).

Globalization has significantly increased the demand for corporate sustainability. Environmental concerns and economic benefits are currently being focused on by organizations, but maintaining competitive edge has become a difficult task (Ayatollahi and Zeraatkar, 2020; Shahzad et al., 2020). Companies become more dynamic and agile by adopting a variety of strategies, including implementing a knowledge management process (KMP) to bolster CSP. A key component of organizational success is knowledge (Teixeira et al., 2018). Acquiring, sharing, and utilizing knowledge is being used to improve customer satisfaction and gain competitive advantages. By responding to changes with KMP, organizations improve their operations' sustainability and competitive advantage, allowing their shareholders to feel more confident about their operations and their customers to trust them (Ceptureanu et al., 2018; Mohsin et al., 2021).

It is common to use the terms knowledge and innovation interchangeably. Studies investigating innovative processes to use knowledge as an outcome are quite common, as are studies looking at innovative processes to use knowledge as an antecedent (Durmuş-Özdemir and Abdulkhoshimov, 2018). In light of this, there is a need to clarify the issue of which kind of knowledge and what kind of spill overs are more appropriate for the exact nature of innovation? The growing democratic nature of innovation has led to many of the best ideas for new products and services originating outside of well-funded corporate and government laboratories (Mirzaie et al., 2019). Ideas can originate anywhere and from anyone. In the literature, it can be found that knowledge generally originates both inside and outside a firm. Identifying, managing, sharing, leveraging, and transferring the knowledge developed internally and/or externally will support firms' competitiveness if they adopt proper organizational and managerial practices (Brahmi and Matta, 2018; Jamil et al., 2021).

Knowledge-based innovation and organizational performance are core concepts that have been studied by previous researchers to understand KMP. Although KMP and CSP have been widely discussed in the industrial world, very few studies have actually examined this relationship (Velásquez and Lara, 2021). Recently, researchers have discovered that KM and FI are connected. In their analysis of sustainable development (SD), Dost et al. (2019) cited an impact of the environmental dimension on FI. Shahzad et al. (2020) considered KM to be a powerful tool

for achieving corporate SD; however, the effect of FI on KMP-CSP relationships has not been studied. Further, Nwankpa et al. (2021) emphasize the need for more research on KMP, FI, and sustainable performance.

The study findings provide manufacturers and experts with useful insights. KM plays an important role in the behavior of eco-innovative organizations because they are ecological, economic, and social corporations. KMP (acquisition, dissemination, and application) workforce growth can improve FI and CSP significantly. Providing managers with a forum for exchanging knowledge and interacting with their employees can boost their performance. The technologically advanced countries often take practical steps and invest in promoting eco-friendly technology through collaboration with other countries, who are promoting environmental concerns and CSP priorities.

The current research contributes to existing literature in numerous ways. The first contribution of this study is to fill the research gap between KMP and CSP by assessing their relationship through structural equation modeling (SEM). Furthermore, the results of this study will enable managers and experts within the organization to better integrate KM into the operations to make FI more effective. The second major contribution of this work is to shed light on a concept that is understudied in FI, augmenting CSP. In addition, this study examines Chinese industrial development, which has been less discussed in the literature. In light of CSP's association with three primary practices, namely economic, environmental, and social sustainability, it is a good time to investigate the effects of KMPs and FIs in the workplace.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Resource-Based View

The Resource-Based View (RBV) is a strategic management perspective originally developed with the idea of examining the relationship between organizational vulnerabilities and internal strengths and their effect on competitiveness or productivity, following a series of studies focused exclusively on industry factors determining corporate performance. Barney (2001) provides further insight into the development of sustainable competition from the perspective of company physiognomies. Physiognomies such as these are unique, inimitable, exceptional, and non-substitutive. Corporate plans and goals are significantly impacted by these tools. External resources such as these assist organizations in achieving success (Gul et al., 2021a).

In knowledge-based economies, FI and CSP are centered on KMP. In today's fast-paced world, businesses must specialize in creativity and innovation in order to build a product that is environmentally sustainable and continuously meets clients' and players' demands (Velásquez and Lara, 2021). The KMP is a planned and organized initiative designed to make the most of the organization's expertise and optimize operations. This provides mechanisms for acquiring, distributing, and efficiently utilizing organizational expertise, some of the key drivers of innovation (Abd Rahman et al., 2021; Awan et al., 2021a).

Knowledge dissemination (KD), knowledge acquisition (KA), and knowledge application (KAP) were deemed important resources for enhancing FI and CSP after popular goals (Khoa and Hoa, 2021; Naseem et al., 2022). Taking into account the ever-changing complexity of today's market, KA is a key factor of FI in which companies learn from their interactions with various stakeholders to make sure that they advance continuously, better understanding consumer needs. In addition, the spread of awareness should be a regular practice for workers to achieve excellence (Ayatollahi and Zeraatkar, 2020; Areed et al., 2021).

Moreover, organizations use the knowledge they acquire to improve their overall processes and final products (Di Vaio et al., 2021; Gul et al., 2021b). Organizations that are knowledge-driven encourage their employees to participate in company decisions and provide dynamic solutions to organizational problems. As well as this, environmentalists and social scientists believe poor air quality and pollution are due to unsustainable product consumption. In RBV, it can be demonstrated that a company that possesses high KMPs and agile capabilities is more likely and competent to create green and sustainable products (Cheng, 2021). In addition, research shows that FI in conjunction with the KMP generates a sustainable product and has a reduced environmental, social, and ecological impact, which in turn enhances CSP (Teixeira et al., 2018; Muhammad et al., 2019).

Knowledge Management Process and Corporate Sustainable Performance

In this study, we aim to determine if KMP specifically impacts CSP, and whether FI mediates this relationship. KM is one of the most effective ways of improving organizational innovation, which also helps discover new CSP opportunities (Awan et al., 2021b; Farza et al., 2021). A number of researchers have offered literature on the direct relationship between KMPs and innovation outputs (Gul et al., 2021c; Lam et al., 2021). Mirzaie et al. (2019) discussed that KM and varied capital are essential for creating a distinctive form of creativity. Throughout the organization, KMP and CSP work together to leverage the expertise and skills of the workforce to use green innovation tools. Research has shown that KA plays a crucial role in achieving corporate sustainability. The impact of KM on sustainable business results has also been demonstrated in recent studies (Al Mansoori et al., 2021; Areed et al., 2021). Additionally, SD has a positive effect on GI as well due to its environmental dimension. Also, FI plays an important role in corporate sustainability because the new technology and KM processes provide more versatility and improved efficiency (Gul et al., 2021d; Shahzadi et al., 2021). In addition to reducing energy demand, preventing emissions, recycling waste, and controlling the environment, advanced technologies are used to continue to enhance development. Further implementation of digital production technology contributes to the enhancement of operational productivity, which in turn impacts corporate creativity. According to Patel et al. (2021), KMP positively impacts company results through business innovation. There is no doubt that creativity and corporate sustainability are directly related, but the purpose of this study is to show that the CSP

is directly influenced by KMP. In this partnership, FI, however, would have a greater impact on CSP, and it would enhance the KMP, thus making it more effective. Hence, we proposed following hypotheses:

H1a: Knowledge Acquisition has significant impact on corporate sustainable performance.

H1b: Knowledge Dissemination has significant impact on corporate sustainable performance.

H1c: Knowledge Application has significant impact on corporate sustainable performance.

Knowledge Management Process and Frugal Innovation

Knowledge management process aims to provide public services and improve performance through an organized and planned approach. Chopra et al. (2021) contend that "knowledge is an intangible asset." In fact, it can be construed as a characteristic of a company or individual that cannot be imitated. KMP also refers to the acquisition, dissemination, and implementation of business information resources in an effective manner. The use of FI as one of the key methods and experiences to achieve sustainable results is an important way to improve the system (Di Vaio et al., 2021; Zaman et al., 2022). Using existing expertise is an essential part of boosting productivity and creativity. The growth of KMP and FI is based on investing in green and natural capital. This leads to innovation based on worker skills and experience. This concept of organizational learning emphasizes the integration of corporate strategies and KM strategies to achieve FI targets (Brahmi and Matta, 2018; Abbas and Kumari, 2021).

Understanding and developing new skills necessary for an organization's productivity is the essence of learning. Most employees receive new information from their peers and co-workers within the organization. In order to assist workers in solving company problems and enhancing productivity for corporations, KAP collects information from multiple reliable sources (Sapta et al., 2021; Velásquez and Lara, 2021; Wang et al., 2021a). The previous literature on KA-FI in developed countries produced mixed findings. The relationship between KA and innovation from external markets and multiple stakeholders has been observed to be interesting. These same researchers have suggested, however, that investments in research and development can lead to more innovative performance, even if some studies find a negative correlation between KA and its performance (Rasool et al., 2019; Migdadi, 2021). There is evidence that KA has a considerable impact on developing innovative behaviors and incrementally improving performance. Khalil et al. (2021) showed that stakeholders' collaborators' information can influence the organizational KAP process, thereby increasing the creative output of the organization. There is little doubt that professionals and researchers around the world are interested in how information acquisition could serve as a means to achieving FI.

The dissemination of knowledge involves receiving, distributing, and transmitting knowledge among workers to boost production. The main function of it is to exchange

information and to gather knowledge. Providing knowledge is the goal of sharing, whereas obtaining knowledge is the goal of collecting. By means of meetings, conferences, social networking and collaboration, these mechanisms can be shaped. Creating opportunities for learning and sharing knowledge requires intensive collaboration. A variety of studies have demonstrated how KD enhances access to information and impacts innovation. By improving operational processes and forecasts, partnerships and collaboration, corporate sustainability goals can be achieved. Despite Darroch (2005) finding that information correlates with company innovation, he showed that KD is not associated with market innovation or success in New Zealand. In addition, Zhao et al. (2022) stated that in the Chinese electronics industry, an exchange of know-how led to major advancements in FI and innovation. Based on this study, we suggest that in order to increase success rates, companies should begin by changing their information sharing behavior as their first step in making some changes. Knowledge is disbursed more widely across divisions and hierarchical levels of the company as a result of the information stream within the organization (Xu et al., 2018; Wang et al., 2021b).

Its main objective is to improve knowledge and make the company more competitive and meet consumer expectations. According to Darroch (2005), KAP is doing just that. Awareness responsiveness refers to how quickly you respond and discuss issues or potential advancements in your process or product when you are aware of consumer demands and market developments. Customer satisfaction is inextricably linked to improved consistency of service and shorter response times. Several impacts have been observed by combining KAP and GI, as shown in the previous literature. KAP has been defined by Darroch (2005) as a crucial element of organizational innovation. Another study carried out by Rezaei et al. (2020) showed that KAP is extremely important for accelerating technological advancement and efficiency. KAP and innovative green solutions are positively correlated, according to the researchers. Companies need a KAP to remain competitive in these changing times. Abubakar et al. (2019) results indicate KAP is a powerful tool for translating an organization's knowledge into new products and processes. Furthermore, productive KAP forges a more sustainable future through creative manufacturing technologies in the interest of shareholders. There is no doubt that there is a strong connection between KAP and creativity, but it is also obvious that KAP is related to FI. Hence, we proposed following hypotheses:

H2a: Knowledge Acquisition has significant impact on frugal innovation.

H2b: Knowledge Dissemination has significant impact on frugal innovation.

H2c: Knowledge Application has significant impact on frugal innovation.

Frugal Innovation and Corporate Sustainable Performance

Frugal innovation is a major way in which organizations try to minimize costs by reducing or removing the burden

of large raw material inventories. The term FI refers to the technology, goods, processes, and management systems that promote environmental conservation by reducing waste, pollution, and resource consumption (Shibin et al., 2018; Awan et al., 2021c). The isolation of method and product innovation from FI was found by Iqbal et al. (2021). New goods or procedures are improved or invented, and harmful market practices are eliminated. CSP's new technologies and information capabilities also contribute to greater stability and efficiency, which is a key success driver. In the manufacturing of eco-friendly goods, the use of environmentally friendly technologies is advantageous to industry in two ways: first, it is economically beneficial, and second, it is competitive (Albert, 2019; Rasool et al., 2021a). In order to reduce energy consumption, emissions, waste disposal, and ecological impact, advanced technologies are being applied. A study in the past has shown that businesses need FI to use environmentally sustainable capital strategies as activities in the environment change (Shibin et al., 2018).

Rosca et al. (2018) mentioned two perspectives on economic sustainability, the first relating to financial efficiency and the second to social well-being. Due to the global economic downturn, companies and societies throughout the world are confronted with the threat of insolvency, bankruptcy, desorption, and other fiscal threats. The least expensive processes, commodities, and management can be reduced through eco-innovation, as well as R&D investment in environmental matters (Hossain, 2018; Hossain et al., 2021; Usman Shehzad et al., 2022). A number of supply-side factors are crucial to the economy and to industry efficiency, including energy cost, raw material usage, and raw material utilization. Additionally, green commodities and a healthy world have seen significant declines in manufacturing costs; however, there is no information on companies involved with green commodity innovation (Leliveld and Knorringer, 2018; Rasool et al., 2020). By minimizing industrial waste production, businesses make use of FI to increase efficiency. Researchers have also documented a positive economic impact of FI. According to the literature review, frugality innovation is critical for corporate profitability, while it does not make sense to innovate in green processes. Hence, we proposed following hypothesis:

H3: Frugal innovation has significant impact on corporate sustainable performance.

Mediating Role of Frugal Innovation

When you have knowledge of technical, technological, and customer factors, it is possible to become innovative. Firms were forced to expand their innovation capabilities by fierce market competition. Innovative ideas can help businesses conduct innovation and boost their overall performance (Santos et al., 2020). ICs and knowledge can be developed through these ideas. Many companies focus solely on internal knowledge-based strategies for achieving competitive advantage in this context. Among the most important sources of internal knowledge are research and development activities, knowledge exchange and employee ideas (Dressler and Bucher, 2018). ICs can be made more effective by combining input from internal and external sources. Companies with innovative capabilities can conduct FI

or make frugal products using these sources, which are more beneficial (AlMulhim, 2021).

Small and medium enterprises' (SMEs) diverse factors can stimulate growth of FI in emerging markets. Numerous studies have shown that implementing open innovation may have a beneficial impact on encouraging FIs, especially in healthcare. Developing comprehensive knowledge of frugality is important in some regions (Gulf) and countries (e.g., Saudi Arabia) (AlMulhim, 2021). Despite the fact that there are many successful cases of small and medium Saudi Arabian businesses in anecdotal evidence, the literature rarely addresses them. The importance of innovation capabilities has been acknowledged by numerous renowned researchers. External knowledge search is defined by Dost et al. (2019) as the accessing and utilizing of external information as derived from proper sources. Innovations may be conducted by firms cooperating with external sources of knowledge to gain knowledge external to the organization (Shibin et al., 2018; Andriani et al., 2019). Academic researchers noted that collaboration patterns depend on how open a firm is to its external environment, and that different types of interaction with their external environment can produce different patterns of collaboration (Iqbal et al., 2021).

Innovating on a budget not only guarantees a strategic advantage, but also social and environmental benefits. Different core innovations concepts were developed for various market segments including environmental innovations, eco-innovations, financial innovations, and sustainable innovations (Fernandes, 2018). There are some differences between these concepts that need to be understood. Previous studies have found that sustainable engineering can be interchanged with eco-innovation, environmental innovation, and FI. Environmental innovation combines the social and eco aspects (Lei et al., 2021). However, eco-innovation considers both economic and environmental aspects. Comparatively, sustainable innovation has a strong social and moral component, and management and competition have a well-established goal. Fischer et al. (2021) suggested that we could refer to green goods and renewable processes as eco-innovation. Le (2021) described the FI as "hardware or software advancement in association with green processes and products, including advanced technology involved in saving energy, avoidance of emissions, composting, green products development, organizational environment management. Innovative application at all levels." Innovative technologies, environmental pollution control, recycling, green product design, and ecological management are key FI priorities (AlMulhim, 2021; Hossain et al., 2021).

In order for organizations to succeed, value and sustainability must be maximized through FI. For SD to succeed, it is crucial that new concepts, products, processes, procedures, or administration systems be developed for managing environmental problems (Fischer et al., 2021). In recent years, numerous scholars have identified major factors that impact FI, such as stakeholder expectations, competitive forces and consumer desires, business ethics, and environmental awareness. In order for a company to survive, FI assessment and its aspects are considered essential (Shibin et al., 2018; Zhao et al., 2021). A competitive advantage is not the only advantage

FI offers today. Legitimacy is also a precondition. Basically, "innovation" means that new products, materials, processes, administrations, and authoritative systems are more likely to give them a competitive advantage. Hence, we proposed following hypotheses:

H4a: Frugal Innovation mediates the relationship between knowledge acquisition and corporate sustainable performance.

H4b: Frugal Innovation mediates the relationship between knowledge dissemination and corporate sustainable performance.

H4c: Frugal Innovation mediates the relationship between knowledge application and corporate sustainable performance.

Figure 1 elaborates all the relationships.

RESEARCH METHODOLOGY

Research Approach

Questionnaire survey method was applied in this study. To handle a large sample of a specific population this method is very appropriate and cost effective. Rasool et al. (2021b) reported that authors develop a questionnaire before the collection of data for analysis for analysis. This study also started with the development of questionnaire to collect data from respondents.

Data Collection

We gathered data from SMEs of five Chinese largest industrial cities. A convenient sampling approach was employed (Kothari, 2004). Questionnaire was developed in English language and translation in Chinese language was also presented on questionnaire for better understanding of the responding employees. The overall sample size of this research was 356 medium and upper level management of enterprises. A total of 530 questionnaires were distributed through emails, and 370 responses were received. There were 356 appropriate replies for the final analysis, with a response rate of 67%. Valid questionnaires are selected following the survey data cleaning procedure, which involves finding and eliminating responses from respondents who either do not meet our target requirements or did not react cautiously to the questionnaire survey, such as respondents only address part of our survey; respondents provide ambiguous answers or/and select the same answer option repetitively, and respondents provide incomprehensible suggestions for open-ended questions. We employed Armstrong and Overton's (1977) approach to determine perceived anti-reaction bias. Independent sample and Chi-square *T*-tests were conducted to analyze the initial 45 and the final 45 respondents *via* demographic factors, i.e., age and gender. The findings revealed no major variations between the two response classes ($p > 0.05$).

Measures

The study used items established from prior research to confirm the reliability and validity of the measures. All items

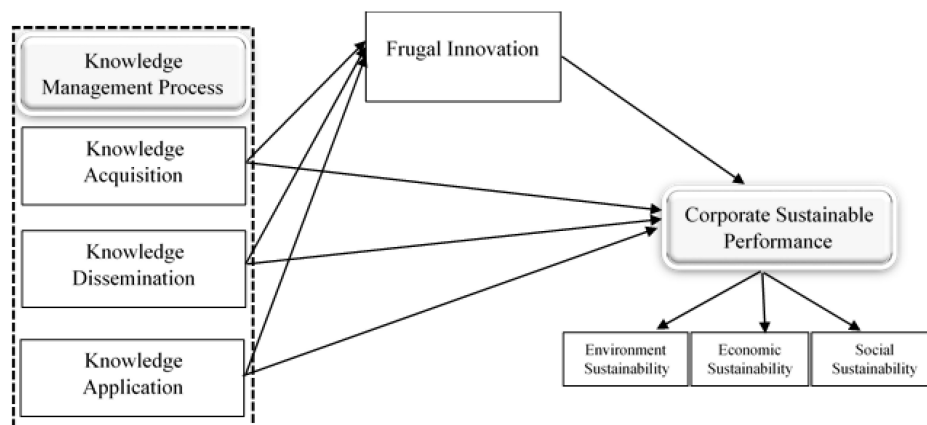


FIGURE 1 | Conceptual framework.

are evaluated through five-point Likert-type scales where “1” (strongly disagree), “3” (neutral), and “5” (strongly agree).

Dependent Variable

To get response about CSP we used twelve items adopted from the prior study of Bansal (2005).

Independent Variable

To analyze the three dimensions of KMP we used 18 items adopted from prior study of Darroch (2005). Detail of items are following:

1. Knowledge Acquisition is determined by six-items and the sample item is, “We encourage employees to take time to think about our business.”
2. Knowledge Dissemination is determined by six-items and the sample item is, “We encourage people with similar interests to work together to solve a problem.”
3. Knowledge Application is determined by six-items and the sample item is, “Information about new technological developments that might affect our business is circulated quickly.”

Mediating Variable

Frugal Innovation was used as mediating variable and measured with seven items adopted from the prior study of Rossetto et al. (2017) and sample item is, “We regularly search for new solutions that offer ease of use of products/services.”

Sample Description

The demographic profile of 356 respondents, such as ownership form of the respondents, age of the organization and size of the organization, are shown in **Table 1**.

Common Method Variance

Bias due to common method variance (CMV) is a significant issue in a survey sample. This issue occurs when data is obtained from a single source (Podsakoff et al., 2003). As Harman (1976) recommends, a single-factor test was employed to determine the

presence of CMV among constructs. The findings indicated that all model elements were grouped into seven constructs, with the first accounting for 34.123 percent of the total variance, less than the suggested threshold of 50% (Hair et al., 2016). Additionally, we employed Smart PLS to conduct a comprehensive collinearity investigation. According to Kock (2015) and a number of other social scientists, it is a very efficient and accurate strategy (Zafar et al., 2021). All VIF values are less than the critical limit of 5, indicating that our model does not include typical process bias (Kock, 2015).

RESULTS

This study employed PLS-SEM since it is the most suggested approach when the research objective is to predict and explore the dependent variables to explain the most significant variation. As a result, PLS-SEM is the most suitable predictive technique (Nitzl et al., 2016). Additionally, it can concurrently analyze measurement and structural models, making it an appropriate technique for studying complicated path model types (Hair

TABLE 1 | Characteristics of the respondents.

Characteristics	Range	Frequency	Percentage (%)
Gender	Male	258	72.47
	Female	98	27.53
	Total	356	100.00
Age	<30 years	58	16.29
	31–35 years	85	23.87
	36–40 years	77	21.62
	41–45 years	79	22.19
	>45 years	55	15.44
	Total	356	100.00
Qualification	Bachelor	91	25.56
	Masters	81	22.75
	Post-graduate	99	27.80
	Others	85	23.87
	Total	356	100.00

TABLE 2 | Reliability and validity analysis.

Constructs	Items	Loadings	VIF	T statistics	C α	CR	AVE
Frugal innovation	FI1	0.785***	2.391	27.888	0.848	0.888	0.569
	FI2	0.777***	2.834	26.224			
	FI3	0.721***	2.130	18.889			
	FI5	0.816***	2.487	38.540			
	FI6	0.692***	1.877	17.208			
	FI7	0.728***	2.027	21.526			
	KA1	0.794***	1.915	24.862			
Knowledge acquisition	KA2	0.847***	2.356	36.379	0.841	0.893	0.677
	KA3	0.850***	2.153	40.858			
	KA4	0.799***	1.700	26.985			
	KAP1	0.601***	1.391	12.075			
Knowledge application	KAP2	0.651***	1.616	13.768	0.805	0.858	0.503
	KAP3	0.778***	1.812	27.166			
	KAP4	0.694***	1.524	20.990			
	KAP5	0.767***	1.722	34.531			
	KAP6	0.749***	1.711	24.318			
	KD1	0.690***	1.870	20.247			
Knowledge dissemination	KD2	0.637***	1.738	18.090	0.852	0.890	0.577
	KD3	0.739***	1.703	21.894			
	KD4	0.825***	2.266	34.206			
	KD5	0.814***	2.175	38.386			
	KD6	0.830***	2.403	38.588			
	ECS	0.867***	1.874	51.892			
Corporate sustainable performance (second-order reflective construct)	ENS	0.812***	1.602	29.805	0.800	0.882	0.715
	SS	0.856***	1.740	50.711			
	ECS1	0.859***	2.253	37.532			
Economic sustainability (first-order reflective construct)	ECS2	0.816***	1.972	32.119	0.884	0.920	0.742
	ECS3	0.898***	3.043	56.416			
	ECS4	0.871***	2.689	46.954			
	ENS1	0.713***	1.273	15.658			
Environmental sustainability (first-order reflective construct)	ENS2	0.823***	1.692	31.964	0.725	0.829	0.549
	ENS3	0.756***	1.526	19.990			
	ENS4	0.663***	1.271	12.441			
	SS1	0.809***	1.546	40.487			
Social sustainability (first-order reflective construct)	SS2	0.807***	2.035	28.722	0.801	0.869	0.624
	SS3	0.794***	2.005	27.940			
	SS4	0.748***	1.427	21.353			

***Significant.

TABLE 3 | Heterotrait-monotrait ratio (first order reflective measures).

	ECS	ENS	FRI	KA	KAP	KD	SS
ECS							
ENS	0.705						
FRI	0.623	0.651					
KA	0.513	0.533	0.573				
KAP	0.677	0.631	0.794	0.677			
KD	0.718	0.702	0.815	0.655	0.844		
SS	0.712	0.660	0.774	0.543	0.714	0.692	

FI, frugal innovation; KA, knowledge acquisition; KAP, knowledge application; KD, knowledge dissemination; ECS, economic sustainability; ENS, environmental sustainability; SS, social sustainability.

et al., 2016). Finally, the PLS-SEM method can be used with small sample sizes yet provide reliable findings. As a result, PLS-SEM seems to be the most acceptable method for this investigation. As Cepeda-Carrion et al. (2019) has noted, the

PLS-SEM approach is gaining popularity due to the potential advantages in management science (Elrehail et al., 2018). PLS-SEM seems to be adequate for this investigation in light of these arguments.

Measurement Model Estimation

Four kinds of tests are used to validate the measurement model's reflective constructs, including individual item reliability, internal consistency reliability, and convergent and discriminant validity. Moreover, since the research included one second-order reflective construct, namely corporate sustainable performance, the reliability, and validity of the second-order construct were also investigated. As shown in **Table 2**, the minimum items loading is 0.601, and the maximum is 0.898, greater than the standardized value of 0.5 (Hair et al., 2014). Internal consistency reliability was assessed through computing composite reliability (CR) and Cronbach's alpha (Chin, 1998; Jamil et al., 2022). The researchers observed that CR is better suited for PLS-SEM. The CR value and Cronbach's alpha values for all first and one higher order latent constructs are higher than 0.70, indicating that the measurement model was internally consistent and robust. Convergent and discriminant validity were used to determine the variable validity of the reflective measurement model. Convergent validity indicates that the degree to observe variable items assesses the same variable. The literature demonstrated that convergent validity is determined using average variance extracted (AVE) and that the AVE value for each construct must be equal to or higher than 0.50 (Hair et al., 2014). The AVE value for all first and second order construct is greater than the suggested threshold. The reliability and validity results for first and second order constructs are presented in **Table 2**.

Discriminant validity relates to how one construct differs statistically from another construct. Henseler et al. (2015) suggested a novel approach for assessing discriminant validity. They suggested that although the Fornell-Larcker criterion can evaluate discriminant validity efficiently, it could be unable to identify the absence of discriminant validity. Therefore, discriminant validity was analyzed using the HTMT ratio. The values of HTMT for the variables used in this study are presented in **Tables 3, 4** for first and second-order constructs, respectively. According to the criteria, all variables' HTMT values must be smaller than 0.85 (Hair et al., 2016). The results show that HTMT values for all reflective first and second-order constructs are less than 0.85, indicating the discriminant validity is established.

Structural Model

The structural model assessment phase is the second stage of PLS-SEM evaluation. The structural path model is evaluated by analyzing the model's multicollinearity [variance inflation factor (VIF)], coefficient of determination (R^2) predictive

relevance (Q^2), effect size (f^2) and empirical significance of path coefficients, as well as the level of confidence (Hair et al., 2020). The current investigation followed the suggestions by Hair et al. (2014) for assessing the structural model and interpreting the results. Moreover, specific suggestions from Preacher and Hayes (2008) study were incorporated for mediation analysis (see **Table 5**).

The VIF values were analyzed in this research before the hypothesis testing to ascertain the model's collinearity problems. According to Hair et al. (2014), if the VIF values are less than 5, there are no collinearity issues with the data. The present study's results indicate that the components for the inner VIF have values that are much less than the suggested criterion (0.5). It demonstrates no collinearity in the data utilized in this research, confirming the model's resilience. Additionally, our model has two endogenous components as shown in **Figure 2**. The R^2 for FI was 0.572 ($Q^2 = 0.319$), and CSP was 0.604 ($Q^2 = 0.424$), which indicates that their predictors can explain 57.2 and 60.4% of the variance in the respective constructs. Moreover, the Q^2 values greater than 0 indicate sufficient predictive relevance, as shown in **Table 4**. According to Henseler et al. (2009), an effect size of latent construct varying from 0.02, 0.15, and 0.35 is deemed minor, medium, and high, respectively. As seen in **Table 5**, the effect size for this study varies from small to medium, which is another evidence of the model's robustness (Hair et al., 2016).

We next ran a bootstrapping of 5,000 subsamples to examine the proposed hypothesis. Before examining the mediation effects, we analyzed the direct relationships. **Table 5** and **Figure 2** illustrate the results of the direct effects. For H1a to H1c, findings reveal that KA ($\beta = 0.103$; $p = 0.019$), KD ($\beta = 0.327$; $p < 0.001$), and KAP ($\beta = 0.223$; $p < 0.001$) was significantly associated with sustainable corporate performance, which supports H1a, H1b, and H1c. Similarly, For H2a to H2c results showed that KA was insignificantly associated with FI ($\beta = 0.061$; $p = 0.233$), whereas KD ($\beta = 0.364$; $p < 0.001$) and KAP ($\beta = 0.413$; $p < 0.001$) was significantly associated with FI, indicting H2a was rejected, but H2b and H2c were accepted. Moreover, H3 results revealed that FI is positively and significantly associated with sustainable performance ($\beta = 0.235$; $p < 0.001$).

We ran the mediation analysis in Smart-PLS using the Hayes and Preacher (2010) bias-corrected bootstrapping technique with a 95% confidence interval to assess the three proposed mediating hypotheses. The results revealed that FI does

TABLE 4 | Heterotrait-monotrait ratio (second order reflective measures).

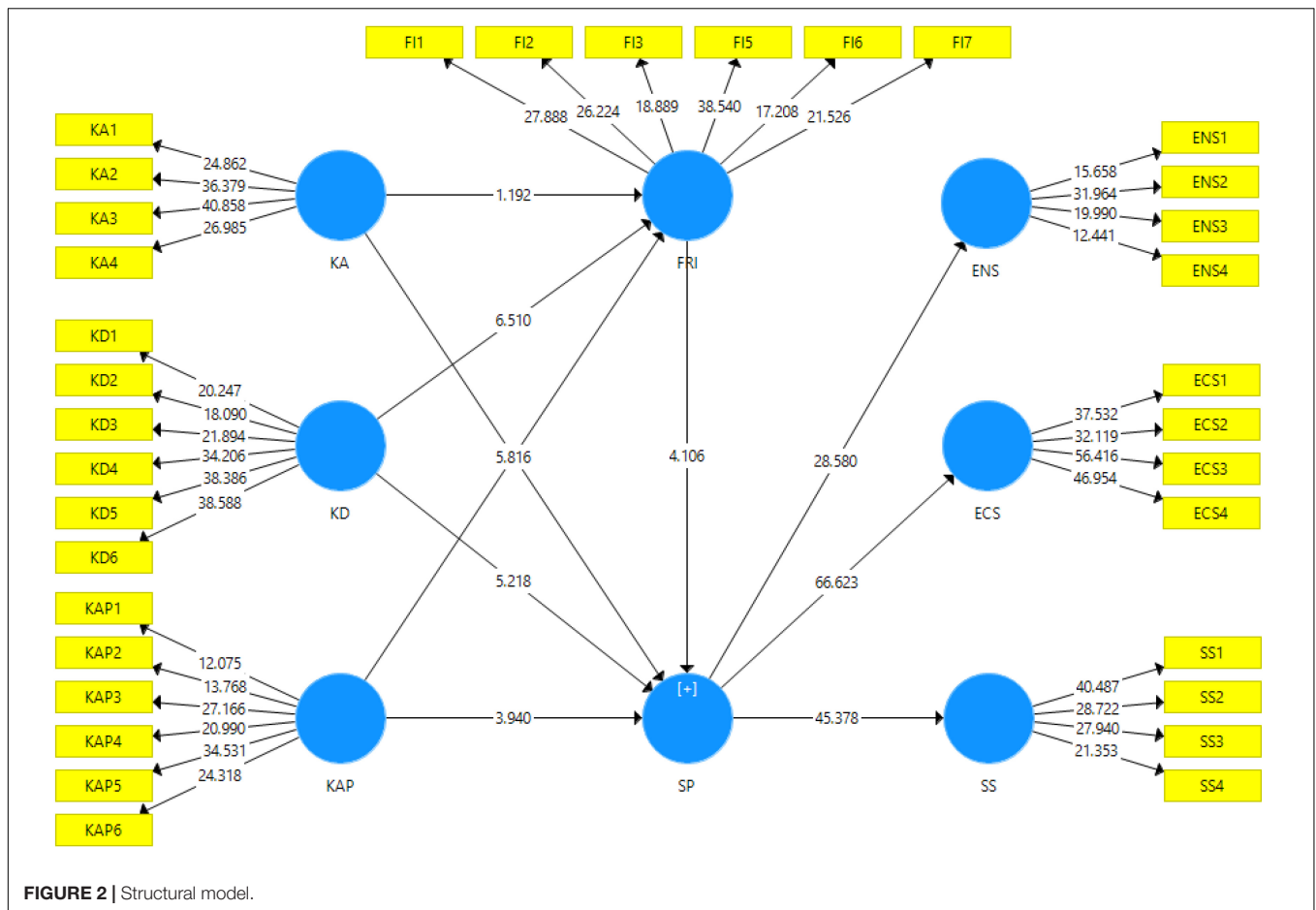
	FRI	KA	KAP	KD	SP
FRI					
KA	0.654				
KAP	0.794	0.744			
KD	0.815	0.732	0.844		
SP	0.810	0.744	0.808	0.844	

FI, frugal innovation; KA, knowledge acquisition; KAP, knowledge application; KD, knowledge dissemination; SP, corporate sustainable performance.

TABLE 5 | Effect size, coefficient of determination, and predictive relevance.

	f^2		R^2		Q^2	
	FRI	SP	Endogenous constructs	Endogenous constructs	Endogenous constructs	Endogenous constructs
SP			0.604		0.424	
FRI		0.058	0.572		0.319	
KA	0.013	0.047				
KAP	0.127	0.038				
KD	0.169	0.087				

FI, frugal innovation; KA, knowledge acquisition; KAP, knowledge application; KD, knowledge dissemination; SP, corporate sustainable performance.

**TABLE 6 |** Hypotheses results.

Hypotheses	Statistical paths	Path coefficient	T statistics (P-values)	2.5–97.5%	Conclusion
Hypothesis 1a	KA → SP	0.103	2.337 (0.019)	(0.016–0.190)	Supported
Hypothesis 1b	KD → SP	0.327	5.218 (0.000)	(0.203–0.452)	Supported
Hypothesis 1c	KAP → SP	0.223	3.940 (0.000)	(0.114–0.332)	Supported
Hypothesis 2a	KA → FRI	0.061	1.192 (0.233)	(–0.040 to 0.159)	Not supported
Hypothesis 2b	KAP → FRI	0.364	5.816 (0.000)	(0.243–0.490)	Supported
Hypothesis 2c	KD → FRI	0.413	6.510 (0.000)	(0.290–0.541)	Supported
Hypothesis 3a	FRI → SP	0.235	4.106 (0.000)	(0.120–0.342)	Supported
Hypothesis 4a	KA → FRI → SP	0.014	1.088 (0.277)	(–0.009 to 0.042)	Not supported
Hypothesis 4b	KD → FRI → SP	0.097	3.946 (0.000)	(0.049–0.146)	Supported
Hypothesis 4c	KAP → FRI → SP	0.086	3.067 (0.002)	(0.036–0.145)	Supported

FI, frugal innovation; KA, knowledge acquisition; KAP, knowledge application; KD, knowledge dissemination; SP, corporate sustainable performance.

TABLE 7 | Mediation results.

Mediation paths	Indirect effects	Total effects	VAF (%)	Results
KA → FRI → SP	0.014	0.117	12.221	No meditation
KD → FRI → SP	0.097	0.424	22.913	Partial meditation
KAP → FRI → SP	0.086	0.309	27.697	Partial meditation

not mediate the relationship between KA and sustainable corporate performance ($\beta = 0.014$; $p < 0.277$), whereas results revealed that FI significantly mediate the relationship

between KD ($\beta = 0.097$; $p < 0.001$), KAP ($\beta = 0.086$; $p < 0.002$) and sustainable corporate performance (see **Tables 6, 7**).

Moreover, the variance accounted for (VAF) method was employed to assess the mediation effect of FI in mediating the relationship between KA, KD, KAP, and CSP. As a general rule, VAF values more than 80, 20–80%, and less than 20% are termed full mediation, partial mediation, and no mediation, respectively. **Table 6** shows that the VAF value is 12.221, 22.913, and 27.697%, respectively. These results reveal that FI does not mediate the relationship between KA and sustainable corporate performance, but partially mediates the relationship between KD, KAP, and sustainable performance.

DISCUSSION AND CONCLUSION

In order to determine what role FI plays in overall process improvements for RBV (Barney, 2001) manufacturers, this study examined how KMP strengthens FI. The innovation process has led to a drop in competitiveness in these industries. According to the current study, KMP contributes to FI, and FI contributes to CSP. Furthermore, the KMP dimensions (KA, KD, and KAP) confirmed the original study's findings across a broader range of variables, demonstrating a beneficial interaction with FI. By using specialized expertise, any problem can be viewed differently, and, for instance, financial capability growth, employee capabilities, and customer demands can be considered.

Nwankpa et al. (2021) argued that there was no relationship between KA and performance of organizations in their previous study. This research contradicts their findings. The results of previous research indicate that KD is positively related to FI. Let's say that organizations are able to exchange expertise amongst all employees. Thus, they improve performance, including operational, financial, and non-economic aspects, while coordinating multiple stakeholders to achieve eco-innovation. Additionally, creative success and expertise can be enhanced through KD. In contrast to Darroch (2005) prior research, our findings indicate that KD is positively correlated with firm success. We found that introverted workers disseminate less knowledge. Recently, several studies have found similar results (Mirzaie et al., 2019; Shahzad et al., 2020; Areed et al., 2021). In addition, KAP and FI appear to be strongly linked. The companies must be able to adapt already acquired information quickly and easily to achieve full customer loyalty. As a result of advanced technologies and products reliant on KAP, Darroch (2005) suggests that business operations could produce green goods more easily. The FI is seen as one of the major drivers of corporate sustainability, culminating in the CSP, according to previous research (Di Vaio et al., 2021). Corporate sustainability is largely driven by FI, which is viewed as a key driver of CSP, ultimately resulting in corporate sustainability. This study reveals that the effect of FI on CSP measurements is both significant and optimistic.

Knowledge management process/corporate sustainable performance interact *via* FI according to results of the mediation analysis. It is essential to better understand FI's critical role in mediating KMP and CSP based on research in the past. Therefore, the current study's findings strengthened FI's mediating position and established the possibility that CSP and KMP are partly mediated (Migdadi, 2021). A mild relationship

between FI and CSP was also examined and it was found that the relationship is positive. The interactions with FI and CSP with KMP were, however, remarkably negligible. This study is unique, and an important contribution to literature.

Practical Implications

Firstly, the study findings provide manufacturers and experts with useful insights. KM plays an important role in the behavior of eco-innovative organizations because they are ecological, economic, and social corporations. KMP (acquisition, dissemination, and application) workforce growth can improve FI and CSP significantly.

In addition, this study underscored the importance of the KMP to policymakers. Companies should take an active role in training their managers and building a successful organization. In countries such as China that have global orders, KM is an essential determinant of FI. KM is a tool used to achieve CSP goals inside and outside of an enterprise, thus the development firms need to focus on KM. Providing managers with a forum for exchanging knowledge and interacting with their employees can boost their performance. The technologically advanced countries often take practical steps and invest in promoting eco-friendly technology through collaboration with other countries, who are promoting environmental concerns and CSP priorities.

Limitations and Future Research Direction

A limited time and budget limit this study, which could hamper potential researchers. In addition, the study was limited to one country and the manufacturing sector. A more detailed study should be conducted by extending the scope of this research to many regions. Other areas may also be considered when comparing the findings of this research. This study could also be applied to a specific business sector, which will make it more generalizable. Although this study offers a roadmap for uncertified businesses, future research will also provide knowledge-based insight into uncertified organizations on an organizational and industry level. Prospective or experimental research is also recommended for obtaining more conclusive results in the future. Further, employees' personality attributes, such as their complex and absorbent qualities, may be considered as moderating factors. In the successful KM phase, absorbent capacity and personality characteristics (extraverted versus introverted) are necessary for the acquisition and sharing of information.

DATA AVAILABILITY STATEMENT

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

AUTHOR CONTRIBUTIONS

The author confirms being the sole contributor of this work and has approved it for publication.

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APPENDIX

APPENDIX 1 | Questionnaire.

Knowledge management process

Knowledge acquisition

We survey employees regularly to access their attitude toward work
 Managers frequently try to find out employees "true feelings about job"
 We have regular staff appraisals in which we discuss the needs of our employees
 Employees are encouraged to attend training seminars and conferences
 We encourage employees to take time to think about our business
 We have regular meetings with employees

Knowledge dissemination

Marketing people in our organization frequently spend their time discussing customer's future needs with people in technical department
 We encourage people with similar interests to work together to solve a problem
 We frequently use techniques such as quality circles in our organization
 We often use video conferencing within our organization
 We frequently update policy and procedure manuals
 Our organization actively encourages mentoring or coaching

Knowledge application

We usually respond to changes in our customer's product or service need
 We are quick to respond customer's complaints
 Our organization seems to be able to implement marketing plans effectively
 Information about new technological developments that might affect our business is circulated quickly
 When something important happens to a competitor the whole organization knows about it quickly
 We frequently change our technical strategies

Frugal innovation

We regularly search for new solutions that offer ease of use of products/services
 We use the fewest amount of materials to comprise the product for conducting the product development or design
 We would circumspectly deliberate whether the product is easy to recycle, reuse, and decompose for conducting the product development or design
 The manufacturing process of the company reduces the consumption of water, electricity, coal, or oil
 We regularly improve the durability of the products/services
 The manufacturing process of the company effectively reduces the emission of hazardous substances or waste
 The manufacturing process of the company reduces the use of raw materials

Corporate sustainable performance

Environmental sustainability

Mined/manufactured products that have a less environmentally harmful impact than in previous years or than its competitors
 Chose inputs from sources that are remediated or replenished
 Reduced waste by streamlining processes
 Handled or stored toxic waste responsibly

Economic sustainability

Worked with government officials to protect the company's interests
 Reduced costs of inputs for same level of outputs
 Reduced costs for waste management for same level of outputs
 Solid waste product for revenue

Social sustainability

Considered interests of stakeholders in investment decisions by creating a formal dialogue
 Improved employee or community health and safety
 Protected claims and rights of aboriginal peoples or local community
 Showed concern for the visual aspects of the firm's facilities and operations



Fostering Advocacy Behavior of Employees: A Corporate Social Responsibility Perspective From the Hospitality Sector

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Considering the stiff competitiveness situation in every sector, promoting the advocacy behavior of employees is of seminal importance for an organization. With this regard, the hospitality sector has no exceptions, however, a review of the prior literature uncovers that most of the prior studies on advocacy behavior were conducted from the standpoint of consumers, and the role of employees' advocacy behavior, especially in the context of the hospitality sector, remained an understudied area. Research also shows that the corporate social responsibility (CSR) efforts of an organization can significantly influence employees' behavior but the relationship of CSR to spur employees' advocacy behavior was not discussed earlier. Against this knowledge gap, the current work aims to investigate the relationship between CSR and employees' advocacy behavior in the hotel sector of a developing economy with the mediating effect of employees' engagement. A hypothesized model was developed, which was validated by collecting data from different hotel employees through a self-administered questionnaire. The findings offer different theoretical and practical implications. Theoretically, one important implication was that the CSR perceptions of hotel employees can drive their advocacy behavior. Practically, the study implicates that hotels can improve their reputation significantly by converting their employees into advocates, as the personal information source is preferred over company-generated information sources. Moreover, the CSR commitment of a hotel can lead the employees to a higher level of engagement, which then motivates them to act as advocates.

Keywords: corporate social responsibility, advocacy behavior, engagement, hotel sector, sustainability

INTRODUCTION

With the rise of globalization and information technology, the competitive landscape is changing continuously in every sector than ever before. In the current era of stiff competition, contemporary organizations are searching for different ways to survive and outperform their rivals. In this aspect, the behavior of employees in an organization has been reported as a critical enabler

for the success of a business (Imamoglu et al., 2019; Clack, 2020). Generally, it is established that professional behavior develops a collaborative work environment, which boosts the business operations, and concurrently leads an organization toward success. Perhaps, this is why employees' role in the workplace has become a contemporary topic of academic debate (Siyal et al., 2020). Given that the role of employees is seminal for the success of an organization, irrespective of its size and sector, employee advocacy behavior has been receiving mounting importance recently (Men and Yue, 2019; Thelen, 2020). The underlying reason for organizational interest in employee advocacy behavior lies in the fact of high level of trust that individuals confer to personal sources of information rather than relying on the organizational sources of communication like an advertisement and others (Murray, 1991). Buttressing this, a report by The Nielsen Group indicated that 83% of respondents from 60 countries trust the information and recommendations they receive from personal sources (McCaskill, 2015). Moreover, research shows that the interest of organizations to foster employee advocacy has raised significantly during the past years (Terpening et al., 2015). Responding to this, Jason Frank, the CEO of MSL-Group, posited that the employees have been emerging as the ultimate reputation builders for an organization, where an organization sells its experiences instead of product or services, and where the truth is shared by the insiders (the employees; Frank, 2015). In spite of the mounting importance of employee advocacy behavior, research in this area is still limited (Men, 2014). Given that the prior research studies have primarily focused on the advocacy behavior of consumers (Chelminski and Coulter, 2011; Jayasimha and Billore, 2016), there is a need to carry out more research in this area from the perspective of employees. Moreover, what could be the factors that can spur the advocacy behavior of employees is also a less explored terrain.

In this regard, research shows that employees' corporate social responsibility (CSR) perceptions can be positively linked with their attitudinal and behavioral intentions (Farooq et al., 2014; Mi et al., 2018). For example, it was mentioned in the prior literature that CSR could foster employees' pro-environmental behavior (Molnár et al., 2021; Yu et al., 2021), innovative behavior (Ahmad et al., 2021), citizenship behavior (Zhao and Zhou, 2021), and job crafting (Hur et al., 2021). Despite these recent contributions, little is known about the relationship between CSR and employees' advocacy behavior. There have been some recent contributions in this vein (Castro-González et al., 2019; Xie et al., 2019), these researches were conducted from a consumer perspective and neglected employees' perspective. Therefore, one of the prime objectives of the current work is to investigate the relationship between CSR and employees' advocacy behavior.

When it comes to employees' behavior, it was found that organizational and personal factors shape behavior. Where, at the level of organization, CSR can influence the positive psychology of employees, at a personal level, employees engagement is attributed to guiding the behavior of employees in a workplace (Kang and Sung, 2017; Sun and Bunchapattanasakda, 2019). At the same time, different studies

also reported that CSR is an enabler of employee engagement (Duthler and Dhanesh, 2018). Specifically, in a plethora of studies, the mediating role of employee engagement, as an outcome of CSR, was reported (Chaudhary and Akhouri, 2018b; Ali et al., 2020). However, such mediating role of employee engagement between CSR and employees' advocacy behavior was barely explored previously. Therefore, another objective of this analysis is to test the mediating effect of employee engagement between CSR and employees' advocacy behavior relationship.

The current work tends to fill the following knowledge gaps. First, the current work aims to test the association of CSR and employee advocacy behavior with the mediating role of employees' engagement in a unified model. Second, the current work attempts to advance the field of organizational management by promoting advocacy behavior among employees as an outcome of CSR. As mentioned earlier in this draft, the topic of advocacy behavior largely remained an area of investigation for consumer behavior research. Third, the current work offers a unique contribution to the literature of hospitality management, especially the hotel sector. Given that this sector has been largely reported for its high employee turnover (Glenn, 2016; Erica, 2019; Amanda, 2020), and stiff rivalry, the current work attempts to help this sector by proposing CSR for a win-win strategy by fostering employees' engagement and advocacy behavior. Last, the current work aims to advance the literature from a developing economy perspective (Pakistan). In this regard, most CSR and employee management research, especially in the hospitality sector, was carried out in developed countries (Appiah, 2019; Kim et al., 2020). The rest of the current draft is divided into different sections for the convenience of the readers. For instance, the upcoming section deals with theoretical underpinning and related literature to formulate the hypotheses. The next section describes the methodology, where the authors provide the information about population, sample, and the data collection process. The fourth section deals with results and analysis to validate the hypotheses. Lastly, in the discussion section, the authors provide a discussion of their results in relevance to previous studies. Moreover, this section also includes implications, limitations, and conclusions.

LITERATURE REVIEW

The hypothesized framework of the current analysis is underpinned in the theory of social identity. Originally proposed by Tajfel (1978), this theory has largely been employed in several behavioral studies (Shen et al., 2018; Cruwys et al., 2020). Indeed, the theory of social identity posits that an individual's behavior (the employees in the current context) is largely influenced by his self-concept about a social group (here, social group means an organization) to which he identifies himself. To elucidate further, based on some social characteristics, which are in congruence with an individual's personal values, of a social group, the individuals strongly identify with that group. Thus, the process of social identification builds a strong social bond between a social group and its members. Buttressing this to the current context, the CSR philosophy of an organization is perceived by

employees as a social benefit for all stakeholders (consumers, employees, community, and even creditors), thus this social character of a socially responsible organization is expected to build a social bond between employees and the organization. Once social bonding is created as an outcome of CSR, each group member is self-motivated to put forth every effort that can benefit the group's overall performance. Thus, in response to the CSR efforts of an organization, the employees are expected to become the advocates, who then consider the organization as their own organization. All this process improves their engagement with the organization and urges them to make every effort to enhance the organization's overall performance. Therefore, the authors of the current draft feel this theory provides a logical explanation for the hypothesized framework of the current study.

Defining Employee Advocacy and Relating It With CSR

Given that the field of employee advocacy is still in its formative stages, there is no available universal definition of this concept. The work of Božac et al. (2017) relates it with the promotion of an organization by the employees. In like vein, Schweitzer and Lyons (2008) define employee advocacy as an act of employees to work as part-time marketers to promote the organization to potential consumers and employees. Another definition of employee advocacy (which is applied here too) was provided by Men (2014) who argued that "it is a behavioral construct that is entirely voluntary in its nature and the employees under this philosophy act not only as of the promoters but also as defenders for their organization, its product and services and its brand to the external community." When linked to the current work's context, as employee advocacy behavior is a voluntary commitment of employees with their organization, such volunteer commitment can be well linked with the CSR orientation (a voluntary organizational commitment) of an organization. This viewpoint can be seen in the seminal work of Dewhurst et al. (2009) and Kremer et al. (2019) who documented that CSR perception of employees can be well linked with their extra-role (voluntary) performance rather than to foster their bottom line performance. Moreover, the literature also states that the act of employee advocacy has several similarities with the concept of organizational citizenship behavior (OCB), which is also voluntary and is not assumed to be rewarded by the organization explicitly (Walden and Westerman, 2018). When looked from this perspective, the link between employees' CSR perception and OCB is well-documented in the prior literature (Ko et al., 2018; Oo et al., 2018). Further, in line with the work of Sen and Bhattacharya (2001) and Castro-González et al. (2019), the authors feel here that employees also evaluated their organization based upon its CSR engagement. When employees see their socially responsible organization shows an extra-commitment (voluntary) for the elevation of all stakeholders, they are self-motivated to support their organization. Thus, as an outcome of CSR, their advocacy behavior is formed.

Moreover, with regard to the theory of social identity, the advocacy behavior of employees is formed due to a social

exchange mechanism with an organization as a social group. In this vein, CSR activities are attributed for a greater social benefit, thus employees may feel motivated to support their socially responsible organization. Buttressing this Rupp et al. (2013) acknowledged that CSR has every potential to meet the psychological needs of employees, driven by a social exchange mechanism. Thus a positive link between CSR and employee advocacy may be proposed:

H1: Theoretically, there may exist a positive association between CSR and employees' advocacy behavior.

Employee Engagement and CSR

Employee engagement has received significant attention in the prior literature to spur the extra-role performance of employees. For example, it was mentioned earlier in a plethora of studies that employee engagement is critical to foster the OCB of employees in an organization (Prabasari et al., 2018; Sugianingrat et al., 2019; Shams et al., 2020). At the same time, several other extra roles of employees including scouting behavior (Shore et al., 2006) and employee creativity (Mubarak and Noor, 2018). Given that an engaged employee is expected to show extra commitment to his organization, such employees willfully make extra efforts for the betterment of the organization. Moreover, engaged workers consider the organization not a place to provide them with paychecks and promotions, but they are emotionally associated with an organization (Saks, 2006). Considering the seminal importance of employee engagement, Kang and Sung (2017) showed that employee engagement can drive the positive communicating behavior, which is similar to advocacy behavior, of employees. More specifically, building on their work, recently, Lee (2021b) found a positive link between employee engagement and their advocacy behavior. Characterized by a deep level of enthusiasm and connectivity with the work, an engaged employee shows an extraordinary commitment to promoting his organization to the external community and acts as a defender (Men and Bowen, 2016). Stretching this, the work of Tsarenko et al. (2018) acknowledged engaged employees could show better advocacy behavior for their organizations. Therefore, it can be suggested that:

H2: Employees' engagement with an organization can be positively linked with their advocacy behavior.

CSR, Employee Engagement, and Advocacy Behavior

Considering the seminal importance of employees' engagement for the success of an organization, it has been receiving considerable importance from contemporary scholars (Kaliannan and Adjovu, 2015). For example, Cesário and Chambel (2017) were convinced to realize the potential role of engaged employees for the success of an organization. At the same time, the studies have also reported that in a workplace with disengaged employees is hard to see any significant progress (Kim and Park, 2017; Kodden, 2020).

Buttressing this, Chaudhary and Akhouri (2018a) posited that an engaged workforce shows an extra level of commitment to the success of an organization. Different factors drive employee engagement in a workplace. With this regard, the literature acknowledges CSR as a significant enabler to foster employee engagement (Gao et al., 2018). Specifically, it was reported in a study that CSR engagement of an organization was the third most preferred enabler to inculcate employees' engagement (Perrin, 2007). The social exchange mechanism between employees and an organization due to CSR can significantly enhance their level of engagement (Gao et al., 2018; Nazir and Islam, 2020). The CSR engagement of a socially responsible organization helps employees to build a strong emotional bond on the part of employees. This strong emotional bond enhances their engagement with work (Mory et al., 2016). Responding to this, the study of Mirvis (2012) established a clear link between the CSR efforts of an organization and employees' engagement. Moreover, referring to the theory of social identity, when employees feel trust and obligations with their ethical organization, such feelings spur their engagement. At the same time, the mediating role of employee engagement as an outcome of CSR is well recognized in the prior literature (Tian and Robertson, 2019; Raza et al., 2021; Wei et al., 2021). As engaged employees show better commitment to perform different extra roles in an organization, and CSR orientation of an organization has the potential to influence employees' engagement, which can ultimately motivate employees to become advocates. Thus, the following hypotheses may be suggested.

H3: CSR commitment of an organization can positively induce employees' engagement.

H4: Employees' engagement mediates between CSR and employees' advocacy behavior.

METHODOLOGY

Data Collection Process

The current work has selected the hotel sector of Pakistan. In this vein, it is to be noted that the hotel business in the country has a long history, as this sector has been operating in Pakistan for many decades. Currently, the hotel sector in the country represents a mixture of different national and international hotel chains. From the standpoint of the economy, the hotel sector has been contributing significantly to the gross domestic product (GDP) of Pakistan (more than 7% of total GDP), with almost a workforce of 4 million (Hadi, 2019). With the advancement in the country's infrastructure and a special focus of the current government to promote tourism, the hotel sector in Pakistan has witnessed significant growth in recent years. It is also forecasted that the hotel business in Pakistan will likely receive an even better growth pace in the future.

The current study has focused on this sector for two reasons. First, as it was identified at the onset of this document

that the hotel business is globally known for its out-sized turn-over, implying that the employees in this sector face a stressful situation (McNamara et al., 2011), which lowers their morale at work (Hotel Tech Report, 2020), thus it will be worthwhile to see whether CSR engagement of a hotel can raise the employees' morale by enhancing their engagement. Second, with the rising competition in this sector, investigating employees' advocacy behavior is also important because the information from a personal source is more trustworthy than the marketing-related communications provided by a hotel through different advertising media. Therefore, considering the importance of the above factors in this sector, the relevance of the current work with the hotel sector is not without logic.

Most of the large cities in Pakistan are famous for the hotel business. Currently, Avari, Marriot, Carlton, Regent, Pearl Continental, and Ramada Plaza international are some major international hotel chains operating in Pakistan. The authors targeted two large Pakistan cities, including Lahore and Islamabad, to collect the data for the current work. Given that both of these cities have a multi-million population and are famous for different tourist locations, almost all national and international hotel players operate in these cities. Prior to approaching a hotel with a request to participate in the current survey, different hotels were scrutinized by the authors to see if they were engaged in CSR activities or not. This scrutiny helped authors to identify a suitable list of hotels for the current survey. With this regard, it was realized that all large hotels were engaged in different CSR activities; however, only four hotels showed positive consent to facilitate the authors in the data collection activity.

The unit of analysis of the current survey were the individual employees serving in different hotels in Lahore and Islamabad. Specifically, employees from different departments and positions (managerial and non-managers) voluntarily participated in this survey. More specifically, given that Pakistan is a younger population with a mean age of 22.8 years, a representative sample between the ages of 18–40 and above was included in the survey. For more details, one can see **Table 1**.

The data collection tool of the current survey was an adapted questionnaire which was finalized by including scales from different sources. The authors also requested the professionals from the field to assess the questionnaire before providing the questionnaire to the respondents. This expert opinion helped to verify the appropriateness of the questionnaires to serve the purpose of the current work (Gjersing et al., 2010; Fernández-Gómez et al., 2020). In general, the outlay of the questionnaire comprised two sections. The demographic information was requested in the first section, whereas, in the second section, the information related to the study's constructs was obtained from the respondents. A total of 500 questionnaires (self-administered) were initially distributed among the employees of different hotels, who responded positively with a response rate of 78% ($n = 389$). Lastly, to maintain the ethical standards, the authors observed the ethical guidelines of the Helsinki Declaration.

TABLE 1 | Demographic detail.

Demographic	Frequency	Percentage
Gender		
Male	247	67.67
Female	142	32.33
Age		
18–25	67	17.42
26–30	86	24.49
31–35	98	29.80
36–40	82	16.67
Above 40	56	11.62
Experience		
1–3	81	19.44
4–6	142	38.38
7–9	94	25.01
Above 10	72	17.17
Category		
Manager/supervisor	103	24.50
Non-manager	286	75.50

Measures

The constructs of the current work were operationalized by employing the scales from different sources. For example, the CSR scale was taken from the seminal work of *Turker (2009)*. The original scale consisted of 17 items, however, the first 12 items were related to general CSR engagement and employee-related CSR activities of an organization. Generally, the literature suggests that employees' behavior, especially their extra-role behavior is influenced by general CSR activities of an organization and employees' related CSR policies. Under the domain of general CSR activities, the studies of *Jahanshahi et al. (2021)* and *Ahmad et al. (2022)* can be referred. These authors found that general CSR-related activities of an organization can boost the extra-role behavior of employees (advocacy is also an extra-role). Specifically, a recent research by *Liu et al. (2022)* indicates that employees' CSR perceptions can drive their advocacy behavior. Similarly, under the domain of employees' specific CSR the work of *Hu et al. (2019)* and *Ahmad et al. (2021)* can be cited. More specifically, the study of *Lee (2021a)* mentioned that internal CSR activities of an organization can urge employees to act as advocate for their organization. Thus the current study considered these 12 items to be included in the current survey to record the employees' CSR perceptions. One sample item from general CSR engagement was "Our hotel participates to the activities which aim to protect and improve the quality of the natural environment," whereas a sample item relevant to employees related CSR was "The management of our hotel primarily concerns with employees' needs and wants." The reliability value (α) of this scale was 0.948. In like vein, the construct of employees' engagement—E.E was operationalized by employing the scale of *Schaufeli et al. (2006)*. This is also a famous scale to record the employees' perceptions of their work engagement. The scale contained nine items among which a sample item was, "I am proud of the work that I do." The reliability value (α) of this scale was 0.931. Lastly, the construct of employees' advocacy behavior—ADB was adapted from the

work of *Van Dyne et al. (1994)*. There were three items to capture the extent to which employees were willing to promote their hotel to the external community. One sample item from this scale was "I say positive things about my hotel to other people." The reliability value (α) of this scale was 0.819. The responses were taken on a five-point Likert scale.

Common Method Variance

The authors took different theoretical and empirical steps to address the potential issue of common method variance (CMV). Theoretically, the items of each construct were scattered on the questionnaire randomly. This step was helpful to mitigate any potential effort to build a sequence in answering the questions from a respondent. Additionally, the anonymity of each respondent was highly maintained as no such question was included, through which the identification of a respondent may be put at stake. Empirically, the authors carried out Harman's single-factor test. To do this, SPSS software (version 23) was considered. In this vein, Principal Axis Factoring (PAF) was employed without using any rotation method. Further, the number of factors was set to "1." Generally, the guideline to assess the result of single-factor lies in detecting a single factor that could explain 50% or more of the total variance. If such a factor exists, it implies that the data suffer from the issue of CMV. However, in the current case (**Table 2**), no such dominant single factor emerged, implying that the issue of CMV is not critical in the dataset of the current survey. At the same time, the authors also considered the technique of common latent factor (CLF) to cross verify the outcomes of Harman's single factor. For this purpose, a measurement model was initially developed in AMOS software, which was then contrasted by introducing a CLF in the measurement model. The results again showed the CLF was not explaining any sheer amount of total variance.

Moreover, the standardized regression weights of both measured models were also compared to detect any significant difference (a difference > 0.2). Such results have been reported in **Table 3** for the readers. As it is evident from the result, the factor loadings of all the items did not change significantly in both cases (models with and without the CLF). All these results indicated that CMV if it existed in the current dataset, was not a critical issue.

RESULTS

Construct Evaluation

To evaluate the constructs of the current survey (CSR, E.E, and ADB), different statistical tests were employed. For example, the factor loadings (standardized) of each construct were assessed, and it was found that no factor loading was less than 0.7, which shows each item's factor loading (λ) was significant (**Table 4**). Moreover, the cases of cross-loadings were also non-evident in the dataset. Similarly, the convergent validity was also assessed for each construct. The authors calculated the average variance extracted (AVE) for all constructs separately in this vein. Usually, it is considered if the value of AVE for a construct is larger than 0.5, then it is assumed that the convergent validity is established (*Fornell and Larcker, 1981*).

TABLE 2 | Results of single-factor analysis.

Factor	Initial Eigenvalues			Extraction sums of squared loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.595	44.145	44.145	10.173	42.387	42.387
2	1.890	7.875	52.020			
3	1.673	6.970	58.990			
4	1.384	5.767	64.757			
5	1.271	5.294	70.051			
6	1.185	4.937	74.988			
7	0.983	4.097	79.085			
8	0.774	3.224	82.309			
9	0.667	2.778	85.087			
10	0.585	2.439	87.526			
11	0.499	2.080	89.606			
12	0.427	1.778	91.384			
13	0.390	1.624	93.009			
14	0.298	1.242	94.250			
15	0.280	1.168	95.419			
16	0.237	0.987	96.406			
17	0.175	0.728	97.134			
18	0.160	0.667	97.801			
19	0.147	0.614	98.415			
20	0.105	0.437	98.852			
21	0.094	0.390	99.242			
22	0.086	0.358	99.600			
23	0.069	0.288	99.888			
24	0.027	0.112	100.000			

Factoring method = Principal Axis Factoring.

TABLE 3 | Common latent factor (CLF) results.

Item	Actual model	CLF model	Difference
CSR1←CSR	0.823	0.842	0.019
CSR2←CSR	0.817	0.829	0.012
CSR3←CSR	0.792	0.813	0.021
CSR4←CSR	0.733	0.762	0.029
CSR5←CSR	0.764	0.769	0.005
CSR6←CSR	0.729	0.741	0.012
ECP1←CSR	0.832	0.856	0.024
ECP2←CSR	0.811	0.822	0.011
ECP3←CSR	0.873	0.898	0.025
ECP4←CSR	0.914	0.916	0.002
ECP5←CSR	0.719	0.743	0.024
ECP6←CSR	0.728	0.751	0.023
E.E1←E.E	0.733	0.739	0.006
E.E2←E.E	0.749	0.758	0.009
E.E3←E.E	0.716	0.722	0.006
E.E4←E.E	0.893	0.898	0.005
E.E5←E.E	0.836	0.855	0.019
E.E6←E.E	0.712	0.741	0.029
E.E7←E.E	0.738	0.745	0.007
E.E8←E.E	0.846	0.862	0.016
E.E9←E.E	0.881	0.899	0.018
ADB1←ADB	0.868	0.872	0.004
ADB2←ADB	0.722	0.753	0.031
ADB3←ADB	0.844	0.856	0.012

With this regard, all AVE values were found beyond 0.5 (CSR—0.635, E.E—0.628, and ADB—0.662). Therefore, it was assumed that all constructs qualified the condition of convergent

validity. Lastly, the composite reliability (CR) was also calculated in each case, and it was revealed that the CR values for all constructs were significant (>0.7). For example, CR values for CSR, E.E, and ADB were 0.954, 0.938, and 0.854, respectively.

Correlations

The results of correlation analysis have been reported in **Table 5**. According to these results, the correlation values (r) were all positive in each case. For instance, the values of r for CSR \leftrightarrow E.E, and CSR \leftrightarrow ADB were 0.339, and 0.523, respectively. These cases showed that the constructs were positively correlated with one and others. Moreover, r values in each case were modest (not beyond 0.7), implying that there was no issue of multicollinearity. Additionally, the authors also developed different measurement models (hypothesized vs. alternate). These models were then assessed for their superiority based on different model fit values, including normed fit index (NFI), comparative fit index (CFI), root mean square error of approximation RMSEA, and chi-square values (χ^2). **Table 6** includes the results of these alternate and hypothesized models. In this regard, it was found that the hypothesized three-factor-mediated model (model-1) produced superior values in every case, implying that there was a good fit between theory and the data compared to the alternate models.

Hypotheses Evaluation

In the last place of the data analysis phase, the authors validated the hypotheses of the current study. In doing so, the structural model was developed twice. Firstly, the structural model was

TABLE 4 | Outputs of construct evaluation.

Construct	Λ	λ^2	E-variance	$\sum \lambda^2$	Items	AVE	CR
CSR	0.823	0.677	0.323	7.619	12	0.635	0.954
	0.817	0.667	0.333				
	0.792	0.627	0.373				
	0.733	0.537	0.463				
	0.764	0.584	0.416				
	0.729	0.531	0.469				
	0.832	0.692	0.308				
	0.811	0.658	0.342				
	0.873	0.762	0.238				
	0.914	0.835	0.165				
	0.719	0.517	0.483				
	0.728	0.530	0.470				
Engagement	0.733	0.537	0.463	5.651	9	0.628	0.938
	0.749	0.561	0.439				
	0.716	0.513	0.487				
	0.893	0.797	0.203				
	0.836	0.699	0.301				
	0.712	0.507	0.493				
	0.738	0.545	0.455				
	0.846	0.716	0.284				
	0.881	0.776	0.224				
	0.868	0.753	0.247				
	0.722	0.521	0.479				
	0.844	0.712	0.288				
Advocacy behavior				1.987	3	0.662	0.854

λ , item loadings, CR, composite reliability, $\sum \lambda^2$, sum of square of item loadings, and E-variance, error variance.

TABLE 5 | Correlations and discriminant validity.

Construct	CSR	E.E	ADB	Mean	SD
CSR	0.797	0.339**	0.523**	3.06	0.66
E.E		0.792	0.413**	2.89	0.74
ADB			0.814	2.96	0.69

SD, standard deviation. ** = significant values of correlation, bold diagonal = discriminant validity values.

TABLE 6 | Model fit comparison hypothesized vs. alternate models.

	Model-1 (Hypothesized)	Model-2 Two-factor	Model-3 Three factor
χ^2 (df)	1142.063 (847)	1723.866 (562)	1488.729 (719)
χ^2/df	1.348	3.525	2.070
NFI	0.961	0.838	0.892
CFI	0.969	0.874	0.919
RMSEA	0.0342	0.063	0.055

developed to see the direct effects on ADB without considering the mediating role of E.E. This model was developed to validate the first three hypotheses of the current work (H1, H2, and H3). The outputs of the direct effect structural model have been presented in **Table 7**. As per the results, it can be seen that the first three hypotheses were significant, and hence these were accepted. To explain further, the beta values (β), CI, and p values were assessed. It was observed that all p values were significant, and CI did not include a zero-value in any case. Moreover, β -values were all positive in all three cases

(CSR→ADB=0.542; E.E→ADB=0.428; and CSR→E.E=0.367). To conclude, H1, H2, and H3 were accepted.

Secondly, the structural model was developed to record the mediating effect of E.E (H4). To do this, the bootstrapping method was considered by the authors by using a larger bootstrapping sample of 2,000 to validate the mediating effect of E.E. The results of this mediated structural model have been presented in **Table 8** which shows that E.E partially mediates between CSR and ADB (CSR→E.E→ADB=0.157). The same criterion (stated above) was employed to reach such results, and it was found that all values were significant. Therefore, the mediating role of E.E was confirmed, and thus H4 of the current study was accepted.

DISCUSSION

There were some specific objectives to carry out the current work, which can now be discussed in detail, followed by the statistical results. Firstly, it was realized that the CSR engagement of a hotel could positively induce the employees' psychology by converting them into advocates. At one end, employees

TABLE 7 | Outputs of direct effect model.

Path	Relation	Estimates	SE	CR	p-value	CI-range	Decision
CSR→ADB (H1)	+	(β1) 0.542**	0.039	13.897	***	0.261 – 0.249	Accepted
E.E→ADB (H2)	+	(β2) 0.428**	0.052	8.231	***	0.239 – 0.218	Accepted
CSR→E.E (H3)	+	(β3) 0.367**	0.058	6.327	***	0.176 – 0.163	Accepted

CI, confidence interval. ** = significant values, SE=standard error, and +=positive relationship; ***=significant values, SE=standard error, and +=positive relationship.

TABLE 8 | Mediation analysis.

Path	Relation	Estimates	SE	Z-score	p-value	CI-range	Decision
CSR→E.E→ADB (H4)	+	(β4) 0.157**	0.028	5.607	***	0.093 – 0.087	Accepted

CI, confidence interval. ** = significant values, SE=standard error, and +=positive relationship; ***=significant values, SE=standard error, and +=positive relationship.

positively evaluate their socially responsible hotel's CSR activities. At the other end, they are self-convinced to respond positively by supporting their hotel through their extra-role engagement. One such extra-role includes employees' advocacy behavior. Given that there has been mounting importance among contemporary scholars regarding CSR perceptions of employees. Moreover, the recent shift in the field of CSR from a meso level to a micro-level (at an individual level) also indicates the importance of CSR from the perspective of employees' perceptions. Earlier research also showed that employees' CSR perception could influence employees' behavior through the sense-making of their organization's CSR commitment (Glavas, 2016; Vlachos et al., 2017; Hur et al., 2021). Specifically, the current work's findings enrich the readers' understanding of how CSR works rather than focusing on whether it works or not (Barnett and Salomon, 2012). Importantly, the current research tries to explain the underlying mechanism of how employees' advocacy behavior can be spurred as an outcome of CSR.

Secondly, the current analysis results also showed that employees' engagement could mediate CSR and employees' advocacy behavior. Although the mediating potential of employees' engagement as an antecedent of CSR was already established in the prior literature (Chaudhary and Akhouri, 2018b; Ali et al., 2020), its potential role to induce employees' advocacy behavior was neglected. With this regard, the current study's results showed that employees' CSR perceptions about a socially responsible hotel help them induce their level of engagement, which then induces their advocacy behavior. Prior research has also acknowledged that engaged employees are more committed to supporting their organization by performing different voluntary tasks (Song et al., 2012; Demerouti et al., 2015). Moreover, the theory of social identity also provides the logic of the above outcomes. As the employees strongly identify themselves with an organization due to its social engagement, this strong identification motivates every employee to put forth every effort which can benefit their social group's performance. In the current context, CSR perceptions of employees can lead the employees toward a higher level of

engagement, and engaged workers are better suited to be converted as advocates.

Implications for Theory

The current study enriches the literature in three ways. In the first place, considering the mounting importance of CSR at the micro-level, the current work offers a unique direction by proposing employees' CSR perceptions as a motivator to enhance their advocacy. Though the domain of micro-CSR is receiving considerable academic attention, previously, the prime focus of such research studies was the pro-environmental behavior of employees (Ahmad et al., 2021; Yu et al., 2021) or their citizenship behavior (Ong et al., 2018). In this regard, the current study offers a different CSR perspective, which was not well-explored previously.

In the second place, the current study is one of the sparse studies that note the mediating potential of employees' engagement between the relationship of CSR and employees' advocacy behavior in a unified model. Given that organizational and personal factors influence the employees' behavior, the current work attempts to consider both of these factors to shape employees' advocacy behavior. For instance, at an organizational level, CSR perceptions of employees were considered, and at a personal level, their engagement was taken into account. The authors feel that considering both factors can well explain the underlying mechanism due to which employees become advocates for their socially responsible hotel. In the last place, the current work advances the literature of the hospitality sector from the perspective of CSR and advocacy behavior. Given that this sector has been largely reported for its high employee turnover (Glenn, 2016; Erica, 2019; Amanda, 2020), and stiff rivalry, the current work attempts to help this sector by proposing CSR for a win-win strategy by fostering employees' engagement and advocacy behavior.

Implications for Practice

When looked at from the lens of practical implications, the current work is equally important as it offers different

practical implications to the hotel sector of Pakistan. First of all, the current work offers a different insight into hotel enterprises' management to foster employees' engagement to improve their advocacy behavior through CSR. As mentioned earlier, the hotel sector is badly reputed globally for a higher turnover and disengaged workers, the above finding has a special significance to this sector. In this vein, the current study offers this sector an effective tool in the form of CSR to keep the employees well-engaged and motivated to perform different voluntary tasks, including their advocacy role.

Likewise, from the standpoint of rivalry in this sector, the insights of the current study are of much importance. Considering the importance of personal sources of information, compared to the commercial sources launched by a hotel, the advocacy behavior of employees, mainly driven by the CSR perceptions of employees, can lead a hotel to outperform its rivals. Additionally, with regard to service-dominant logic, the role of employees for services is critical compared to the manufacturing sector. Therefore, the advocacy behavior of employees not only helps a hotel improve its reputation but also motivates the employees to deliver superior services for their socially responsible hotel. Lastly, employees being the stakeholders perceive their organization as "one of us," thus they can serve as credible organizational spokespersons who could promote an organization, externally.

Limitations and Future Research Directions

Like in all cases, the current work is not without limitations, however, the authors feel such limitations can lead future researchers toward new arenas for CSR-advocacy relationship. In this vein, the data were collected from a single source, implying that elimination of CMV may be difficult. This limitation may be addressed in future studies by employing an experimental research design and by collecting data from multiple sources. Similarly, another limitation of the current work is explaining employee behavior through CSR and employees' engagement. Although the proposed relations were significant, considering the complex nature of human behavior, more constructs may be included in the current framework.

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CONCLUSION

In conclusion, the current work helps the hotel sector of Pakistan by promoting employees' advocacy behavior which is undoubtedly is of paramount importance for any hotel. In this vein, the management of the hotel is suggested to develop CSR strategies aligned with the mission and vision of a hotel. At the same time, the management should emphasize on employees to realize the CSR activities of a socially responsible hotel as value-driven. For the hotel sector, to have a sustainable management philosophy, it is important to take the employees on board by communicating effectively about the concern of a hotel for social benefits. On a further note, the management should realize that employees evaluate CSR engagement of a hotel as a benefit for all stakeholders, and being an important stakeholder, they are urged to respond to their socially responsible hotel positively by acting as advocates.

DATA AVAILABILITY STATEMENT

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

AUTHOR CONTRIBUTIONS

NA, ZU, EA, HH, AA-M, and AV-M contributed to conceptualization, formal analysis, investigation, methodology, and writing and editing of the original draft. All authors contributed to the article and approved the submitted version.

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Analyzing the Role of Corporate Social Responsibility for Sustainable Environmental Performance: Mediating Roles of Environmental Strategy and Environmental Outcomes

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This study examines the relationship between corporate social responsibility (CSR) and environmental performance, utilizing data from 415 small and medium-sized enterprises (SMEs) in China as a case study. We found that CSR has a direct and significant impact on environmental performance (EP) and is positively correlated to environmental strategy (ES) and environmental outcomes (EO), both of which improve environmental performance, i.e., they serve as a significant mediating factor between CSR and environmental performance. Our study will help general managers and policy maker of SMEs, provides a beneficial model for managing CSR, ES, and EO to achieve sustainable environmental performance. Specifically, it can assist general managers of SMEs in strengthening their internal resources such as CSR, ES, and EO in order to improve long-term environmental performance.

Keywords: corporate social responsibility, environmental outcomes, environmental strategy, SMEs, China

INTRODUCTION

Authors have recently become increasingly interested in the connection between environmental performance and corporate social responsibility (CSR). It's hard to say for sure, though, because some studies found a positive correlation between CSR and environmental performance, while others found either a negative correlation or no correlation at all. Recent research of CRS in industrial firms has just begun. Many of these studies focus on how CRS affects environmental performance directly (Kraus et al., 2020).

Chuang and Huang (2018) examined the direct relationship between corporate social responsibility and environmental performance in order to discover whether it has a beneficial or negative impact on the environment. While some studies (i.e., Delmas et al., 2013) have discovered a link between the two, others have suggested that the relationship could be influenced by other factors not considered in the research. According to Karassin and Bar-Haim (2019), there is no direct relationship between corporate social responsibility and environmental performance. The firm's intangible resources, on the other hand, were utilized to mediate the relationship. There has been an upsurge in research and practice linking corporate social responsibility and environmental strategy as a result of the renewed interest in employee-focused corporate social responsibility

and environmental strategy (Channa et al., 2021; Jamil et al., 2021a). Corporations' social responsibility (CSR) and environmental performance are interwoven, with environmental strategy having an impact on the formulation and implementation of CSR programs.

Also relevant are the concepts of corporate social responsibility (CSR) and environmental performance, which can be seen as complementary when it comes to understanding assumptions about not only the role of corporations, but also the relationship between organizations and the environment (Anser et al., 2020; Awan et al., 2022). The fact that calls are being made for more research into the relationship between corporate social responsibility, environmental strategy, and environmental outcomes should not come as a surprise, since, while research has certainly begun to pay greater attention to this connection, a more comprehensive examination of the relationship between these two constructs has yet to be undertaken, particularly with regard to the potential link between environment and corporate social responsibility (Nassani et al., 2022). We believe that such an endeavor is highly important and vital because there are various significant interactions between the environment and corporate social responsibility (CSR) that have not been sufficiently or systematically addressed.

As a result, the relationship between corporate social responsibility and environmental performance is arguably more complicated than what the findings of many previous studies suggest (García Martín and Herrero, 2020; Peng et al., 2021); as a result, we decided to use this study as a means of expanding the scope of previous research works on the link between corporate social responsibility and environmental performance within Chinese manufacturing firms. New research questions will be asked with this aim in mind: Do CSR has impact on environmental performance? and 'Do environmental strategy and environmental outcomes (EOs) act as mediators in the relationship between CSR and environmental?'

Our findings make a number of important contributions to the fields of corporate social responsibility and the environment. For the former, this study not only makes it easier to resolve some of the ambiguity surrounding the relationship between CSR and environmental performance, but it also contributes to the expansion of CSR knowledge through the development of an explanation for the possible association between CSR and environmental performance through the inclusion of environmental sustainability and environmental performance indicators (ES and EOs) as mediating variables. In addition, corporate social responsibility (CSR) occurs as an antecedent aspect in strategy. An existing gap in the literature about the effects of environmental strategy on environmental performance was filled by concluding that environmental outcomes had a positive impact on environmental performance, which was previously undiscovered.

After the introduction section literature review in discussed with relevant theory after that research methodology and results of the study are presented. Next section is discussion of results with implications of the study and at the end limitations and future research directions are discussed.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Natural Resource-Based View Theory

Organizational resources and competencies are critical to long-term competitive advantage, according to RBV theory (Hart, 1995). RBV theory's extended variation, the natural RBV theory, proposes that firms could benefit from a long-term competitive advantage if they respond quickly to environmental issues. RBV theory is lacking in a number of ways, according to (Hart, 1995). The relationship between the organization's natural surroundings and the organization itself is not taken into account, among other factors. Although this exclusion may have been warranted in the past, nature's role in the marketplace has become increasingly obvious. Hart and Dowell (2011) found that reducing pollution through the use of natural resources and capabilities leads to an improvement in profitability. Additional factors that contribute to increased long-term performance and sustainability include environmental resources, pollution prevention strategies, and organizational competences. In order to evaluate a company's social responsibility, researchers might use natural RBV theory to focus on environmental, social, and economic aspects of CSR (Úbeda-García et al., 2021). Stakeholder theory was used in past research on CSR and economic performance and ability motivation-opportunity theory was used in previous studies on environmental strategy and environmental management performance (Partalidou et al., 2020). Natural RBV theory was used by the researchers to lessen the emphasis on measuring environmental performance through CSR, environmental outcomes, and environmental strategy. For this study, researchers looked at the role of environmental outcomes as well as the role of CSR in enhancing environmental performance.

Corporate Social Responsibility, Environmental Strategy and Environmental Performance

For the past few years, professionals have focused their attention on corporate social responsibility (CSR) since consumers want environmentally friendly products and services. Someone who is concerned about environmental issues in a number of businesses, as well as the introduction of environmentally-friendly products and procedures into the market is an "eco-entrepreneur." Competition, consumers, employees, and the government have all put pressure on a number of companies to speak out on social and environmental issues. Corporations throughout the world have begun to practice CSR in recent years (Bhalla and Overton, 2019; Gul et al., 2021a). Despite the fact that numerous studies have been conducted on CSR, there is no commonly acknowledged definition of the term (Aragón-Correa et al., 2008; Cha et al., 2019). A study of this nature proved difficult for the researchers, as a result. If a company is to be successful, it must meet the expectations of the broader public. A company's life expectancy is shorter when it is internally focused, whereas companies that put the needs of their customers first are more likely

to succeed in today's market (Orazalin and Baydauletov, 2020). An organization's commitment to pursuing strategies, making decisions, and doing actions that benefit society at large is known as corporate social responsibility (CSR). Corporate social responsibility (CSR) encompasses economic, social, and environmental considerations. Research examining the link between CSR and organizational performance is rare, but what little research there is shows that CSR boosts performance. According to Grubor et al. (2020) Corporate social responsibility (CSR) is becoming an increasingly significant part of business. Researchers have studied the link between corporate social responsibility and economic performance in micro, small, and medium-sized businesses and found that CSR significantly enhances economic performance (Sila and Cek, 2017; Marakova et al., 2021). As a result, academics focused primarily on assessing the environmental performance of these enterprises without paying much attention to corporate social responsibility (CSR). Here, our investigation aims to fill the gap." Therefore, following hypothesis proposed:

H1: CSR relates to SEP.

H2: CSR relates to ES.

Environmental Strategy, Environmental Performance

RBV theory doesn't take environmental strategy into account when analyzing the success of businesses. Natural RBV theory, on the other hand, placed greater focus on environmental sustainability as a means of gauging long-term viability. Scholars and practitioners are mostly focused on environmental strategy (Rodrigue et al., 2013; Jamil et al., 2021b). It has been found that companies that have environmental plans are more likely to realize environmental advantages than those who do not (Xie et al., 2020). Organizational resources or strategic positioning should be used to evaluate an organization's success, according to experts (Chen et al., 2015). This is a point of contention. Business strategy has recently been discovered to be an important predictor in environmental protection and economic operations. Furthermore, research shows that taking a pro-active approach to environmental issues boosts a company's long-term financial and economic performance (Samad, 2018). Some of the environmental projects also looked into how organizations performed (Latan et al., 2018; Awan et al., 2021). The performance of management is unaffected by environmental measures. There is a lack of clear evidence to support the link between business strategy and corporate performance.

H3: ES relates to SEP.

Corporate Social Responsibility and Environmental Outcomes

What constitutes a company's responsibility toward the environment and its operating parameters is defined in terms of environmental outcomes. CSR practices and environmental consequences have already been studied in earlier research, with a variety of studies looking into subjects such as the relationship

between CSR and green supply chain management, individual green behavior, and employee environmental engagement. The literature on corporate social responsibility has been examined in addition to quantitative research (Aleksić et al., 2020; Gul et al., 2021b).

Consequently, corporate social responsibility (CSR) may be a significant issue to consider for improving environmental effects. This means that it is easier to describe the environmental repercussions of particular corporate social responsibility activities (Huang, 2010). Evaluation of green performance by employees in the same vein helps to align behavior and accountability and place a higher emphasis on environmental objectives all of which contribute to better environmental results for business (Ko and Liu, 2017; Rozsa et al., 2021). Environmentally friendly activities can be put to use by employees who have a strong emphasis on employee involvement, as well as innovative solutions to waste reduction and resource utilization efficiency improvement in the workplace, all of which contribute to the improvement of the company's environmental outcomes. When CSR is correctly applied, it has the ability to improve environmental performance (Shaukat et al., 2016; Jamil et al., 2022).

H4: CSR relates to EO.

Environmental Outcomes and Environmental Performance

The hypotheses made by Porter, Van der Linde, and Hart (1995) have led to more support for the idea that environmental management can be used to gain a competitive advantage. At the same time, some people aren't so sure (Peng et al., 2021). For example, a lot of research has shown that improving the environment would lead to better performance, which shows that there is a link between these two variables. Companies that care about the environment will be more credible and successful at meeting the needs of their stakeholders, which will lead to a better corporate image, less tax, and less environmental costs for the company (Latan et al., 2018).

To this point, there hasn't been a clear answer to the question of whether or not better environmental results will lead to better financial results (Shaukat et al., 2016). In order to get better environmental results, you'll have to spend more money on things like risk management or more money for things like capital and operations and energy (Sila and Cek, 2017). This means that your overall performance will be lower. Environmental outcomes, on the other hand, can lead to more market access and better product differentiation, which can lead to better performance.

H5: EO relates to SEP.

Mediating Role of Environmental Strategy and Environmental Outcomes

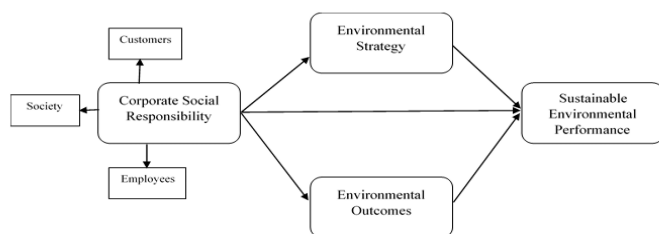
Environmental strategy and environmental outcomes are influenced by CSR as a result of CSR, and thus leads to improved environmental performance, as was previously discussed in the context of corporate social responsibility

(Cho et al., 2019). Studies have shown that corporate responsibility (CSR) significantly improves organizational performance. In spite of this, Solovida and Latan (2017) found that there is a mixed association between corporate social responsibility and economic performance (Partalidou et al., 2020). Thus, the relationship between corporate social responsibility and business performance is ambiguous and requires more examination by incorporating a mediating component into the equation. In Hart (1995), the natural RBV theory, the link between environmental resources and competitive advantage is attributed to environmental strategy and environmental outcomes (Ryszko, 2016). Environmental strategy and results are used to mediate the relationship between environmental performance and corporate social responsibility.

H6: ES mediates the relationship of CSR and SEP.

H7: EO mediates the relationship of CSR and SEP.

CONCEPTUAL FRAMEWORK



Research Methodology

In this study, we collected information from small and medium-sized firms (SMEs) in five of China's largest industrial cities. A convenient sampling strategy was used in this study (Kothari, 2004). Employees were asked to complete a questionnaire in English, and a translation into Chinese was also provided on the questionnaire for better understanding by those who responded. The total number of participants in this study was 415 middle and upper-level executives from various businesses. There was a total of 625 questionnaires circulated by email, with 445 responses receiving the most attention. According to the final analysis, a total of 415 appropriate responses were received, representing a response rate of 71.2 percent. Data from a survey is cleaned to remove responses from people who don't meet our target requirements or who didn't respond carefully to the questionnaire survey, like people who only answer part of the survey, people who give ambiguous answers or choose the same answer option over and over again, and people who give incomprehensible suggestions for open-ended questions. Valid questionnaires are chosen after the survey data cleaning process, which involves removing responses from respondents who either don't meet our target requirements or don't meet our target requirements. We used Armstrong and Overton (1977) method for anti-reaction bias. An independent sample and chi-square T-tests were used to compare and contrast the first 45 and last 45 people who took

the survey based on their age and gender. The data showed that there were no big differences between the two answer groups ($p > 0.05$).

Variable Selection and Process

The study used items established from prior research to confirm the reliability and validity of the measures. All items are evaluated through five-point Likert-type scales where "1" (strongly disagree), "3" (neutral), and "5" (strongly agree).

Dependent Variable: To get response about sustainable environmental performance we used five items adopted from the prior study of (Laosirihongthong et al., 2013).

Independent variable: To analyze corporate social responsibility with its three dimensions we used eleven items adopted from prior study of Alvarado-Herrera et al. (2017) and detail of items are following:

1. CSR toward society is determined by four-items and the sample item is, "Our organization emphasizes the importance of its social responsibilities before society."
2. CSR toward customers is determined by three-items and the sample item is, "Customer satisfaction is a priority for our organization."
3. CSR toward employees is determined by four-items and the sample item is, "Our organization implements flexible policies to provide a good work & life balance for its employees."

Mediating variables: Environmental strategy and environmental outcomes are used as mediating variables. Environmental strategy was measured with four items adopted from Banerjee (2002), and sample item is, "Our firm has integrated environmental issues into our strategic planning process," while environmental outcomes is measured with five items adopted from Zailani et al. (2014) and the sample item is, "Reduction of total direct and indirect toxic emissions."

TABLE 1 | Characteristics of the respondents.

Characteristics	Range	Frequency	Percentage
Age of Organization	Less than 10 years	60	14.45%
	10-20 years	95	22.90%
	20-30 years	135	32.50%
	Above 30 years	125	30.15%
	Total	415	100.00%
Ownership of Organization	Government Owned	160	38.50%
	Private Owned	265	61.50%
	Total	415	100.00%
Size of Organization	Less than 100 employees	103	28.80%
	100-200 employees	97	23.37%
	200-300 employees	111	26.74%
	More than 300 employees	104	21.09%
	Total	415	100.00%

Sample Description

The demographic profile of 415 respondents, such as ownership form of the organization, age of the organization and size of the organization, are shown in **Table 1**.

RESULTS

This study used smart PLS to evaluate the model. This study wants to use confirmatory and exploratory research so the PLS-SEM analysis was selected. Sarstedt et al. (2014) argue that Behind the Partial least square modeling, there are two approaches known as structural modeling and covariance biased. The hypothesis testing was done through PLS-SEM and the hypothesis expansions was usually tested through SEM (Hair et al., 2016). The PLS is best suited for multi constructs model and multiple order constructs models. The small sample size is used for analysis is also advantageous in Smart PLS-SEM. Smart PLS-SEM provides it straightforward to compute all parameter computations (Hair et al., 2016). The current study was done using Smart PLS 3.9.

The degree to which the study variables deviate from their latent variable is called unidimensional. In order to verify construct reliability and validity, an investigation of the study constructs' unidimensional is a criterion that must be achieved (Chou et al., 2007). According to Byrne (2001), the factor loading of items within each construct was used to determine unidimensional. There is strong evidence that all of the constructs indicated in the measurement model are unidimensional (Usman Shehzad et al., 2022).

Model Measurement

The study is quantitative in nature and data was collected through survey questionnaire. The study analyzed the corporate social responsibility on sustainable environmental performance through the mediating role of environmental safety and outcome. Firstly, we examine the construct reliability and validity of the external model through Smart PLS algorithm (**Table 2** and **Figure 1**). Factor loading and Cronbach Alpha was used to assess the model reliability. The analysis show that 24 indicators out of 28 have factor loading greater than 0.6 which meet the model reliability (Hair et al., 2016). Cronbach's alpha, Average variance extracted and composite reliability may be used to determine the degree of consistency between several measurements of a variable (Hair et al., 2010). The value of Cronbach Alpha for all variables should be greater than threshold level which is 0.7 (Hair et al., 2014). The factor loading of 24 indicators is greater than 0.7, Cronbach's alpha (α) for all constructs meet the acceptable threshold level which is 0.7. On the other hand the composite reliability for all constructs exceed the threshold level 0.70 which meet the minimum acceptable criteria (Chin, 1998; Bagozzi et al., 1991). Composite reliability values ranged from 0.81-0.903 and were all above the recommended value which is 0.6 (Bagozzi and Yi, 1988) or greater than 0.70 as suggested by Holmes-Smith (2001). In light of these findings, it can be concluded that all of the research hypotheses examined in this study are valid

and trustworthy. The factor loading, Cronbach's alpha (α), a composite reliability confirms the indicator reliability (Chin, 1998; Henseler et al., 2009).

The convergent validity of variables is evaluated by using the "composite reliability" (CR) and "Average variance extracted" (AVE), and construct reliability for all variable (Hair et al., 2016). The researchers say that CR and AVE must should be higher than the minimum acceptable value which is 0.7 and 0.5 consecutively. By utilizing composite reliability and average variance extracted (Fornell and Larcker, 1981a). The **Table 3** indicate that all variables have loading higher than 0.70 and

TABLE 2 | Inner model evaluation.

Variables	Constructs	Factor loading	Cronbach's Alpha	Composite reliability	Average variance extracted (AVE)
Corporate Social Responsibility					
CSR Customer	CSRC2	0.883	0.710	0.873	0.775
	CSRC3	0.878			
CSR for Employees	CSRE1	0.780	0.736	0.851	0.655
	CSRE2	0.798			
	CSRE3	0.848			
CSR for society	CSRS1	0.718	0.803	0.872	0.633
	CSRS2	0.692			
	CSRS3	0.883			
	CSRS4	0.871			
Environmental sustainability	EO1	0.712	0.809	0.860	0.552
	EO2	0.753			
	EO3	0.762			
	EO4	0.734			
	EO5	0.752			
Environmental performance	EP1	0.664	0.870	0.903	0.609
	EP2	0.774			
	EP3	0.847			
	EP4	0.778			
	EP5	0.773			
	EP6	0.834			
Environmental strategy	ES1	0.816	0.825	0.884	0.656
	ES2	0.772			
	ES3	0.827			
	ES4	0.822			

TABLE 3 | Discriminant validity: Fornell-Larcker criterion.

	CSRC	CSRE	CSRS	CSR	ES	EO	SEP
CSRC	0.881						
CSRE	0.692	0.809					
CSRS	0.755	0.736	0.796				
CSR	0.870	0.790	0.736	0.733			
ES	0.639	0.803	0.604	0.639	0.810		
EO	0.508	0.561	0.708	0.670	0.721	0.743	
SEP	0.627	0.789	0.788	0.728	0.773	0.694	0.780

Note: CSR customers (CSRC); CSR employees (CSRE); CSR society (CSRS); Corporate social responsibility (CSR); Environmental strategy (ES); Environmental Outcome (EO); Sustainable Environmental Performance (SEP).

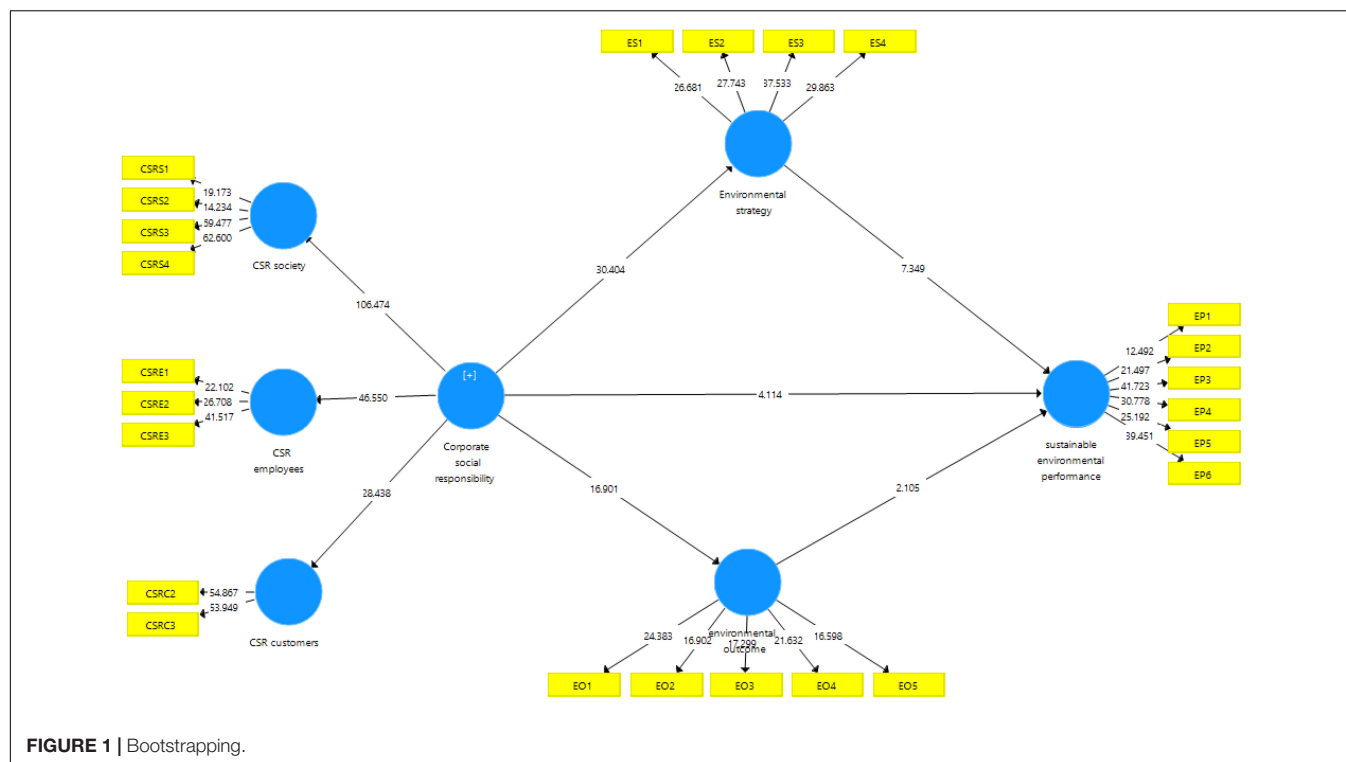


FIGURE 1 | Bootstrapping.

CR is greater or equal to 0.70, The AVE score should be greater than 0.50 which illustrate the convergent validity is acceptable and internal consistency of items (Hair et al., 1998; Chin and Newsted, 1999).

Discriminant Validity

Several tests were used to examine discriminant validity. As a first step, it may be explored in the measurement model by looking at the latent constructs' shared AVE. To determine whether of the model is evaluated through the correlation among constructs. If there are any extremely high correlations among constructs, the model is likely to have discriminant validity issues. Construct validity occurs when the square correlation for each construct surpasses the AVE for each of the other components (Fornell and Larcker, 1981b). AVE values for each construction were more than or equal to 0.50, as shown in Table 4, indicating

that the values ranging from 0.54 to 0.71 were responsible for more than half of the variation in their respective measurement items, as recommended. Fornell-Larcker criteria and heterotrait-monotrait (HTMT) ratio are two strategies used to assess the discriminant validity of the model (Hair et al., 2016). the Fornell and Larcker (1981b) argue that it's important to keep in mind that upper right side values of the diagonal which is the square root of AVE should be larger than the correlation with other constructs (Fornell and Larcker, 1981b; Hair et al., 2016). However, values between 0.90 and 0.95 are acceptable for HTMT ratios but must be less than 0.85 (Hair et al., 2016). There are no HTMT ratios greater than 0.90 in Table 3, confirming the discriminant validity of the model.

The Variance Inflation factor (VIF), values were computed in this study to check for Conceptual model collinearity concerns. VIF values below 5 indicate that no collinearity issues exist in the data, according to experts (Hair et al., 2014). It was found

TABLE 4 | Hypothesis testing.

	Hypothesis	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
H1	CSR - > SEP	0.301	0.306	0.071	4.219	0.000
H2	CSR - > ES	0.839	0.836	0.028	29.984	0.000
H3	ES - > SEP	0.554	0.543	0.074	7.474	0.000
H4	CSR - > EO	0.670	0.671	0.041	16.349	0.000
H5	EO - > SEP	0.093	0.101	0.046	2.036	0.042

Corporate social responsibility has positive and significant impact on environmental Outcome ($\beta = 0.670$, t value = 16.349, p -value = 0.000). Environmental outcome has significant impact on sustainable environmental performance ($\beta = 0.093$, t -value = 2.036, p = 0.042). The findings indicate the Hypothesis H1, H2, H3, H4 and H5 are accepted.

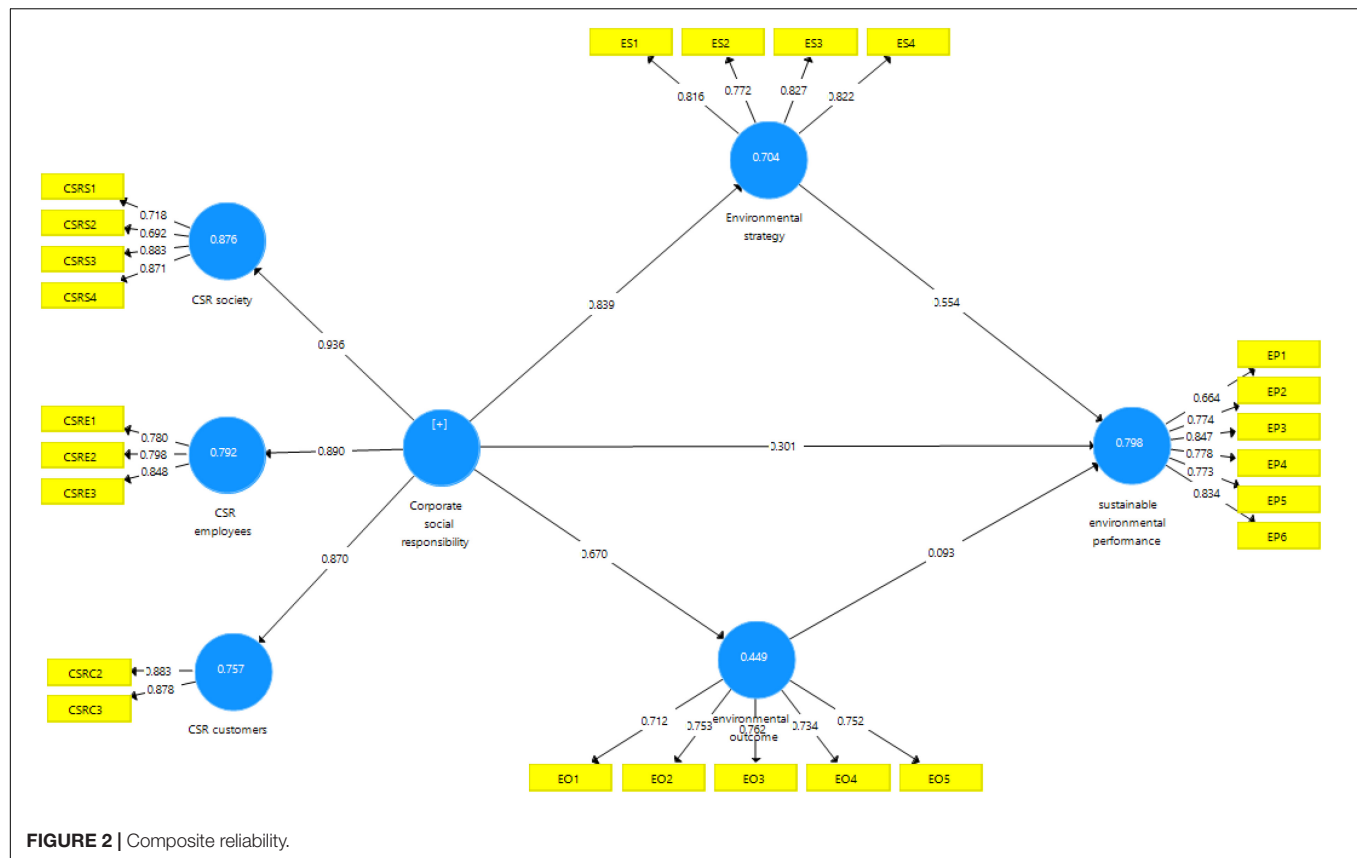


FIGURE 2 | Composite reliability.

that the objects' inner VIFs ranged from 1.321 up to 1.876. The results of this investigation show that there is no evidence of data collinearity, and that the conclusions remain constant throughout time. All of the model's latent variables have Q2 values suggest that model is highly predictive (Hair et al., 2014; Mohsin et al., 2021).

R2 greater than 0.5 indicates a suitable model. All exogenous constructs have R Squared values larger than 0.5 in **Figure 2**, indicating that the model's predictive accuracy is quite high (Hair et al., 2016).

When assessing the model's "explanatory power," the R2 value for each predicted variable was computed. it indicated that the degree to which the IV explains the DV. Predictive accuracy is measured by the R2 value, which ranges from 0 to 1. R2 value described as "weak," "moderate," and "strong," with R2 describe as weak with value 0.25 and R2 value is moderate with 0.50. and R2 value is 0.75 considered as substantial. All exogenous constructs in **Table 5** have R Square values higher than 0.5, except environmental strategy which indicates that the model has moderate predictive accuracy (Hair et al., 2016; Li et al., 2021).

Model Assessment

This study examines the hypothesis by using bootstrapping at 5000 with sample replacement (Hair et al., 2016). The results show that corporate social sustainability has positive and significant impact on sustainable environmental performance ($\beta = 0.301$, t value = 4.219, p -value = 0.000). corporate

social sustainability has positive and significant impact on environmental strategy ($\beta = 0.839$, t value = 29.984, p -value = 0.000). Environmental strategy has positive and significant impact on sustainable environmental performance ($\beta = 0.554$, t value = 7.474, p -value = 0.000).

Mediation Analysis

Environmental strategy mediates the relationship between CSR and sustainable environmental performance. the value for VAF greater than 80 percent suggest full mediation, whereas VAF greater than 20% and higher than 80% show partial mediation, and VAF less than 20 percent indicates no mediation. The findings indicate that environmental strategy partially mediate the relationship between corporate social responsibility and sustainable environmental performance. There was an indirect impact (beta = 0.465, t -value = 7.939, p -value = 0.000) with VAF 76 percent, which indicates partial mediation. The findings indicate that environmental outcome partially mediate the relationship between corporate social responsibility and sustainable environmental performance (beta = 0.062,

TABLE 5 | Predictive accuracy.

	R square	R square adjusted
Environmental strategy	0.704	0.703
environmental outcome	0.449	0.447
sustainable environmental performance	0.798	0.796

TABLE 6 | Mediation analysis.

Hypothesis	Direct effect	Indirect effect	Total Effect	VAF	Explanation	Result
CSR - > ES - > SEP	0.301 (4.219)	0.465 (7.939)	0.828 (24.921)	68%	Partial Mediation	H6, Supported
CSR - > EO - > SEP	0.301 (4.219)	0.062 (2.129)	0.432 (11.34)	72%	Partial mediation	H7 supported

t -value = 2.129, p -value = 0.000) with VAF 62 percent, which indicates partial mediation VAF is used to indicate the amount of the indirect impact relative to overall effects, and it is calculated as a percentage of total effects. Partially mediating the impact of both the direct and indirect effects (Zhao et al., 2010; Nitzl et al., 2016) (see **Table 6** for all mediating relationships).

DISCUSSION AND CONCLUSION

This article's CSR framework considers environmental strategies for Chinese manufacturing SMEs. According to the findings, CSR has an impact on environmental performance. There is a strong correlation between corporate social responsibility and business performance, according to Cho et al. (2019). On the other hand, Anser et al. (2020) contradicted this finding that a company's performance is evaluated by its CSR initiatives. Environmental strategies have a substantial impact on the long-term performance of an organization, according to the natural RBV theory (Hart, 1995). According to Martinez-Conesa et al. (2017) CSR has a substantial impact on a company's financial performance and managers and owners can't ignore it. CSR has a significant impact on environmental strategy. According to Martinez-Conesa et al. (2017) when confronted with environmental, economic, and social constraints, a company's business model and strategy may be better aligned. This research to see how corporate social responsibility affects environmental performance. During the investigation, a gap was discovered. CSR is having a huge impact on the environment and how it affects the ecosystem while this is going on. Environmental CSR and environmental strategy have a glaring omission from much of the existing literature (Karassin and Bar-Haim, 2019). We see a link between corporate social responsibility (CSR) and environmental results that most academics do not, and we intend to change that.

The environmental strategy has a significant impact on the effectiveness of the environmental performance. Channa et al. (2021), for example, discovered that environmental strategy can have a significant impact on environmental performance and Sari and Tjen (2017) also discovered that, contrary to widespread perception, environmental strategies have little impact on how managers are rated. As indicated by the statistics, environmental approaches have a major impact on long-term performance, which is in accordance with the natural RBV theory (Hart, 1995; Hart and Dowell, 2011). When determining a company's success, RBV theory does not take into consideration the business plan of the company. When it comes to enhancing environmental performance, Hart (1995) was the first to recognize the role of corporate strategy, specifically environmental strategy, in the process. Another aspect that determines environmental performance is the environmental performance of a company's

operations. Úbeda-García et al. (2021) argue that businesses can gain a competitive advantage by enhancing their environmental performance. The RBV theory is correct in the sense that long-term performance can be improved by introducing new ideas (Hart, 1995).

The environmental strategy and environmental outcomes serve as a mediating between corporate social responsibility and environmental performance. We believe that corporate social responsibility has a direct impact on environmental performance, as well as an indirect impact on environmental performance through environmental strategy and environmental outcomes (Wang and Sarkis, 2017). The natural RBV hypothesis proposes that corporate social responsibility (CSR) is linked to environmental strategy and outcome in the same way that environmental performance is linked to CSR. At the end, we discovered that corporate social responsibility has a direct impact on environmental performance. The majority of the time, corporate social responsibility has a significant impact on environmental strategy and outcomes (Xie et al., 2020). Lower emissions, lower energy consumption, lower raw material consumption, and lower usage of hazardous materials are all benefits of the environmental plan and its implementation, according to the results. Finally, environmental performance and corporate social responsibility are intertwined through environmental strategy and results.

THEORETICAL IMPLICATIONS

It is necessary to unearth research findings that can shed light on a significant organizational issue in order to make a theoretical Contribution To The Field. Another essential component of our research is that it offers a fresh viewpoint on corporate social responsibility (CSR), environmental strategy, ecological outcomes and ecological performance. This is one of the most important aspects of our research. There is a link between CSR and EP, as well as between the function of environmental strategy and its consequences and their application in the mediation process (Rodrigue et al., 2013). As a result, our research is a ground-breaking study in that it brings together CSR, ES, EO, and environmental performance into a single research model that is unprecedented. We are pleased with the contribution we have made to these fields (Naseem et al., 2021). All of these theories have been used in the past to analyze (CSR), environmental strategy, environmental outcomes, and environmental performance. When evaluating the influence of CSR on economic performance, for example, stakeholder theory can be utilized to make inferences. It was based on the ability motivation opportunity paradigm that a second line of research was conducted, which focused on EP. A contingency theory approach was utilized to examine the

relationship between environmental strategy and environmental management performance.

PRACTICAL IMPLICATIONS

Our findings should be taken into consideration by management consultants and lawmakers. We've developed a research technique to assist large industrial organizations in better understanding the relationship between corporate social responsibility, environmental strategy, and green innovation. This technique is intended to steer them in the proper way. Higher management of the organization is concerned about EP in today's world; nevertheless, they may benefit from the study outcomes related to EP which will helpfully make policies to minimize wastage and air pollution. Although the relationship between CSR and environmental performance has evolved as a result of environmental strategy and results, there is no direct link between the two. Since various studies have demonstrated that CSR has a significant impact on organizational performance, general managers of large industrial organizations should not disregard CSR while analyzing environmental performance in their organizations (Chen et al., 2015). CSR, ES, and EO must be given top priority by general management and policymakers in order to assess environmental performance.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Even if it contains some of the same limitations as prior studies, these flaws can be addressed by other researchers in the future.

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Starting with a cross-sectional perspective, experts aren't sure whether corporate social responsibility, environmental strategy, and green innovation in large industrial organizations will continue to work in the same way over time. The same research framework will be used by future researchers to see whether or not the results remain consistent over a longer period of time. Future studies can look at data from small and medium-sized firms in China to observe how the outcomes vary over time, much as our study looked at data from small and medium-sized enterprises in China. The function of green competence and green transformational leadership as a relationship between corporate social responsibility and environmental performance can also be investigated by future scholars. Finally, the current research was carried out in China, which has its own culture and traditions. It will be possible for future researchers to replicate the study in other nations to discover whether there are any changes. In addition, concepts from the circular economy can be applied to the evaluation of social, environmental, and economic performance outcomes.

DATA AVAILABILITY STATEMENT

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

AUTHOR CONTRIBUTIONS

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

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The Role of Transformational Leadership on Firm Performance: Mediating Effect of Corporate Sustainability and Moderating Effect of Knowledge-Sharing

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The primary purpose of the research is to investigate the mediating role of corporate sustainability in the relationship between the impacts of transformational leadership on the performance of firms. This study also aimed to investigate the moderating role of knowledge-sharing on the relationship of transformational leadership with corporate sustainability. Respondents of the study were the top management of large Chinese automobile sectors, such as Shanghai Automotive Business Corporation (Group), China FAW Group Corporation, Dongfeng Motor Co., Ltd., Beijing Automotive Group Co., Ltd., and China North Industries Group Corporation. These are the companies with the biggest market share in the automobile manufacturing industry in China. The data was gathered by using a self-administrative survey questionnaire from 198 individuals operating in different automobile industries in different sectors of China. The data were analyzed using structural equation modeling (SEM) through the Smart PLS 3.3.2 software. The results of this study revealed that transformational leadership has a positive and significant effect on the performance of the firm. Corporate sustainability has a significant positive mediating role in the association of transformational leadership and firm performance. Findings indicated that knowledge-sharing also has a positive moderating role in the association between transformational leadership and firm performance. The findings of this study contribute to the body of knowledge and show that leadership style has a significant effect on firm performance and that knowledge-sharing culture in firms is essential for better performance of the firm. Furthermore, firms may improve their performance by improving their sustainability and by creating knowledge-sharing culture. The findings are important, particularly in connection with a developed country like China. The findings have important insights for various stakeholders, i.e., government, regulatory bodies, practitioners, academia, industry, and researchers.

Keywords: firm performance, transformational leadership, corporate sustainability, knowledge-sharing, management

INTRODUCTION

In the contemporary rapidly changing business environment, it is highly important to understand the factors that influence the performance of businesses (Sadeghi and Pihie, 2012). In response to intense rivalry, advancements in technologies, and fast-changing demands of the customer, firms are required to implement practices effectively to meet targets and exceed performance (Mammasis and Kostopoulos, 2019). Still, whether the performance of the organization is influenced, to some extent, by leadership style and behavior is a debatable question. As a reference, Starbucks was made the most popular brand in the world by Howard Schultz, and Burberry's revenue was doubled in 5 years by Ahrendts (2013). These examples suggest that management style positively influences the performance of a company. In contrast, some researchers concluded negative implications from having popular CEOs, and that appointing a megastar chief executive officer with a charismatic personality has no influence on the effectiveness of organizations, but only enhances pay expenditure (Chen et al., 2021) and promotes a blind following with potentially negative consequences, seen in the case of Jeff Skilling's role in the demise of Enron (Idris et al., 2022). In the literature, researchers highlighted numerous variables that potentially influence the performance of the business. These variables include entrepreneurial orientation (Patel et al., 2015), information technology (Chae et al., 2018), and business strategy (Tari et al., 2017). Despite many variables influencing firm performance, leadership style has a significant contribution to performance. In addition, leaders importantly influence the policies of a business that ultimately shape the competitive environment (Bass and Avolio, 1994). Multiple challenges are faced by an organization in an environment of intense competitiveness. Therefore, the primary challenge for a business is to obtain a competitive advantage by developing suitable strategies for better operational performance (Mulki et al., 2015).

Previously, financial performance was the key element of focus for organizations. In the modern business environment, information development and its competitive basis are transformed into intangible resources, and tangible financial outcomes are transformed into leadership performance (Burhan and Rahmanti, 2012). Consequently, non-financial indicators should also include factors such as quality and customer satisfaction, which may be of use when evaluating the operational performance of a business by incorporating competitive position (Orji, 2019). If an organization intended to improve its performance, the leadership style of the executive will have a significant contribution to the overall operational performance of an entity (Nagendra and Farooqui, 2016). Most of the literature on the topics of leadership and business performance focused on the impact of leadership style on organizational performance and development (Victoria et al., 2021). However, few researchers studied the association between leadership style, the performance of the business, and strategies for managing human resources (Zula and Chermack, 2007). While implementing managerial activities, leadership style may be a crucial element for smooth progress. After the emergence of

firm resource-based views, human resources are now considered the most significant component in gaining a competitive edge and achieving organizational goals (Barney and Mackey, 2016).

In addition, under current contextual pressures, organizations are facing numerous management-associated challenges, including extreme rivalry among competitors, shortage of resources, more rational, demanding customers, rapid advancements in technologies, changing climate, and pressure from stakeholders (Thangaveloo et al., 2022). In long-term settings, a systems perspective is needed to attain financial, ecological, and social outcomes (Nirino et al., 2019). Many paths are suggested by researchers to attain these goals, including the development of particular models and frameworks for managing sustainability (Balugani et al., 2020). Integration of sustainability is required at strategic and operational levels of management by keeping in view the future and current targets of stakeholders (Awan et al., 2017). With the development of leadership models in modern scenarios, visionary leaders emerged and became popular among leadership researchers (Harsanto and Roelfsema, 2015). Leadership paradigms are shifting from traditional to visionary, also termed "charismatic," "transformational," or "inspirational" leadership, which also considers the emotional dimensions of the phenomenon (Laeque and Babar, 2016). Asif et al. (2019) argued that transformational leaders uplift the contribution of team members to accept the mission and purpose of the organization by motivating them to sacrifice their interests and achieve the common interest of the group. Moreover, visionary leadership transforms individual desires, doctrines, preferences, and ambitions into shared and common interests by sharing values, vision, collective decision-making, and authorization (Zhou et al., 2018).

Furthermore, followers of transformational leadership are empowered and work independently for a collective purpose. They are inspired by the charisma and vision of their leaders (Jing et al., 2020). Additionally, corporate sustainability is enhanced by transformational leaders that eventually influence the performance of an organization (Gerard et al., 2017). A transformational leadership behavior in a knowledge-sharing environment integrates and supports models of strategy implementation successfully. Transformational leadership behavior is suitable for the implementation of strategy because it creates an environment where participants have confidence and respect for their leader or manager, which motivates them to do more than expected (Zhang et al., 2015; Zhang S. et al., 2019; Zhang W. et al., 2019). Moreover, knowledge-sharing directs businesses to avail newly emerged opportunities in the market (Wang et al., 2016).

In the comprehensive study of the particular frameworks that integrate knowledge-sharing and transformational leadership, this research examines the role of transformational leadership on the performance of business by moderating the role of knowledge-sharing. This study will contribute to the stream of literature in many ways. Firstly, from a theoretical perspective, this is a pioneering study on the transformational style of leadership of top executives about the organizational performance with the moderating role of knowledge-sharing. This study also contributes to the literature by addressing the

question of how knowledge-sharing jointly forms an integration that helps in the effective transformation of several behaviors of transformational leadership into the higher performance of the business. This discussion leads to the following three research questions:

- RQ1: How does effective transformational leadership lead to higher firm performance?
- RQ2: What is the mediating role of corporate sustainability in the relationship between the impacts of transformational leadership on the performance of firms?
- RQ3: What is the moderating role of knowledge-sharing in the relationship between the impacts of transformational leadership on the performance of firms?

A brief review of literature on the role of transformational leadership on firm performance mediating the effect of corporate sustainability and the moderating effect of knowledge-sharing is presented in the section after that, which is then it followed by the development hypothesis of the study. Then, the method used in the study is effectively designated. After the description of analysis and results, a comprehensive discussion of the research findings containing the study's practical implications and practices was consequently performed. The last section of the research highlights the confines of the study, along with recommendations for further study for various researchers and scholars.

LITERATURE REVIEW

Theoretical Framework and Hypothesis Development

Leader-Member Exchange Theory

The phrase "vertical dyad linkage" (VDL) was first used to describe the leader-member exchange concept (De Clerck et al., 2021). According to Hanasono (2017) the leader-member exchange concept is separated into four stages, each of which is connected to and builds on the preceding stages (Hanasono, 2017). According to LMX theorists, organizational leaders should give their followers more power, foster the sharing of work-related knowledge, and allow participation in decision-making processes (Jiang and Yang, 2015). The leader-member exchange theory by Herman and Mitchell (2010) is a psychological process variable that serves as a bridge between transformational leadership and knowledge management. Transformational leadership attributes are predictive of the leader-member exchange (LMX) paradigm (Hanasono, 2017). The leader-member exchange concept identifies organizational personnel's unique responsibilities, interpersonal interactions, and related functions (Graen and Uhl-Bien, 1995). According to transformational leadership theory, leaders assure organizational success by passing on the organization's vision, mission, and goals to their followers (Burch and Guarana, 2014). As a result, the leader-member exchange theory implies that leaders and their followers build mutual norms and social exchanges (Jiang and Yang, 2015).

Social Learning Theory

The social learning theory explains that individuals learn in organizations through monitoring their own and others' behavior (McLeod, 2016). By studying their leaders and their intellectual stimulation, followers learn how to think creatively and come up with methods for creating new ideas (Mittal and Dhar, 2015). Employees can notice the individualized consideration of transformational leaders by observing the information-sharing given in the organization, which favors new ideas (Clarke, 2013). This knowledge-sharing procedure can assist employees in developing creativity and motivating them to set challenging goals (Wade and Hulland, 2004). Employees' motivation for creativity can be increased by transformational leaders and this process leads to the development of creative self-efficacy (Koh et al., 2019). This can help to reduce obstacles at work, motivate employees for creative pursuits, and develop higher creative performance (Koh et al., 2019).

Transformational Leadership Theory

The transformative leadership theory was first articulated by Idris et al. (2022). Leadership focuses on addressing fundamental requirements and higher needs, while inspiring followers to come up with new-fangled thoughts and make the workplace a better place to work (Ghasabeh et al., 2015). According to Clarke (2013) and Clarke and Braun (2013) transformational leadership has four dimensions. These are idealized influence, tailored consideration, intellectual stimulation, and motivational inspiration (Fellows et al., 2003). In the last 30 years, many adjustments were made to the transformational theory of leadership. Nowadays, these kinds of leaders are defined by researchers as leaders who influence and encourage followers to sacrifice their interests at the price of collective interests (Banks et al., 2016). Despite criticism of the application of transformational leadership, Van Knippenberg and Sitkin (2013) categorize the influence of this leadership style into four sub-dimensions (Deinert et al., 2015).

Idealized Influence

The idealized influence leadership style focuses on the basic purpose of idealized influence to create a common vision and strengthen relationships with followers (Sayyadi and Provitera, 2016). Idealized influence states that leaders act as role models for followers and receive acknowledgment, admiration, and trust from them (Phaneuf et al., 2016).

Individualized Consideration

The individualized consideration leadership style focuses on understanding the specific requirements of employees and inspiring followers to create a learning environment at the corporate level to mobilize their support for organizational goals (Ghasabeh et al., 2015). Individualized consideration is the effort of a leader in admitting the needs of individuals and providing guidance to them as a counselor or trainer. Some of the researchers recommended the overall application of transformational leadership in operations (Anderson and Sun, 2015).

Intellectual Simulation

Intellectual stimulation is the degree to which a leader can create an innovative environment for solving problems (Jin et al., 2016). The Intellectual stimulation leadership style encourages employees to share their knowledge to develop more inventive thoughts and justifications.

Inspirational Motivation

Inspirational motivation is the competence of a leader in communicating a convincing mission with compelling future perspectives that ultimately elevate the efforts and spirit of the employees with the courage to face challenges. The Inspirational motivation leadership style focuses on motivating human assets to achieve better levels of the desired potential. These four dimensions characterize an effective leader in a knowledge-driven economy built on producing and managing intellectual capital within firms or businesses.

Chinese Context

Transformational leadership encompasses a diverse set of characteristics that are influenced by several cultural elements, as well as basic workplace environments. Many academics have developed comparable scales depending on their cultural backgrounds. Chinese researchers have also looked into transformational leadership in the context of Chinese culture and corporate organizations. Li et al. (2015) created a new Chinese transformational leadership paradigm based on their analysis of Chinese business sectors. Transformational leadership is typically thought of as a style of leadership that can help both leaders and followers enhance their morality and maturity. Chinese researchers have confirmed and extended the transformational leadership concepts as proposed by Liu et al. (2010). Based on Bass' concepts, as well as their analysis of Chinese business sectors, Li et al. (2015) established a new Chinese transformational leadership model. To explore the structure of transformational leadership theory and its link with leadership effectiveness, data were collected from a variety of sources and were evaluated using factor analysis, reliability analysis, and regression analysis. The study suggests that the use of a transformational leadership questionnaire showed good validity and reliability and it was appropriate for the Chinese culture. Kanwal et al. (2019) developed an integrated model to examine the validity of transformational leadership in a Chinese cultural environment, as well as the efficacy of authoritarian leadership in Chinese private firms. The findings of this study support the importance of transformational leadership in Chinese culture. Sun and Leithwood (2015) conducted a content study that showed transformational leadership in China is divided into eight distinct categories. According to exploratory factor analysis (EFA) in China, transformational leadership is built around four dimensions that encompass ethical show off, captivation, visioning, and personalization.

Hypotheses Development

Transformational Leadership and Performance

An individual's or an organization's performance is defined as the extent of work they put in and remain successful while achieving

a mission. The concept is presented by the prominent employees of an organization when accomplishing their assigned tasks (Bass and Avolio, 1994). Accordingly, the success of an organization depends upon the capabilities of organization personnel (Yıldız et al., 2014). The performance of a business can be assessed by looking at fulfilled tasks and set targets or the aim of business at the end (Benligiray and Ahmet, 2017). The subjective, as well as objective, approaches can be applied to measure the performance of the business. In the literature, both the combined approaches are also applied to counter the drawbacks of each of the approaches. Evidence shows that profitability, market share, and sales are the most widely used indicators while measuring subjectively. However, while objective evaluations, ROA and ROE are common indicators for measuring firm performance (Yıldız and Karakaş, 2012). Literature indicates that numerous methods of performance evaluation are established by the researchers, but none of the single methods is valid in all contexts. Over the years, the transformational theory of leadership gained considerable support from researchers (Wang et al., 2011; Van Knippenberg and Sitkin, 2013). In the literature, the positive influence of transformational leadership is proven on various variables, including job satisfaction (Braun et al., 2013), commitment to the organization (Wang et al., 2011), innovation and creativity (Anderson et al., 2014), and well-being of employees.

By keeping in mind the supposition that transformational style impacts performance greatly, a large number of researchers evaluated the perspective of likely impacts of transformational leaders on performance (Khalili, 2017). A large number of research studies have been published on the meta-analyses of transformational theory and the performance of the business (Wang and Zhu, 2011). Furthermore, these analyses recommended a positive association between transformational leadership and various performance indicators that include followers' insights of leader effectiveness, the job performance of the leader, sales volume, and profit ratios. While measuring performance at the organizational level, evaluation based on the financial data shows weaker relation of transformational leadership with performance indicators as compared to the evaluation based on the subjective measures among these variables (Sadeghi and Pihie, 2012). The transformational leadership model and trickle-down leadership frameworks concluded with numerous descriptions of the answers about why and how CEOs can impact the performance of their organization (Bass, 1999; Bass and Steidlmeier, 1999). Potentially, an influential leader can contribute to the success of the business by influencing direct reports of business in teams of top executives (Wang et al., 2017). It is anticipated that leaders, having a transformational style of leadership, play the character of an influencer for the effectiveness of organizational management at the level of subordinates, and as a result, their actions are elicited by transformational leaders that ultimately influence the performance of the firm (Wang et al., 2014).

About idealized influence or charisma, CEOs potentially form the performance of their organization by communicating its core values and beliefs, thus establishing a collective mission (Kim and Shin, 2019). While performing as role models, they provide appropriate structure and communicate

to others their organizational expectations from them that consequently produce better overall performance (Jensen et al., 2020). Moreover, leaders are expected to enhance performance through inspirational motivation that provides meaning to the followers (Obeidat and Tarhini, 2016). Through this, followers are able to deal with the challenging environment and show a strong commitment to the achievement of organizational targets (Kim and Shin, 2019). In this way, leaders can stimulate their followers and their efforts are streamlined by realizing expectations vested on them, which, in turn, influence the performance of the business in a positive direction at levels of operational stages. With the help of intellectual stimulation, executives motivate employees to question communicated assumptions and improve problem-solving and discussion culture for attaining intellectual development and innovation, and that helps in shaping the better performance of the company (Deinert et al., 2015). In addition, the CEOs, through individualized consideration, can achieve better performance of the business when they consider the needs of individuals and support them for personal growth and development (Crawford et al., 1997). Individualized consideration positively influences the performance of employees that, in return, improves the overall performance of the business (Kim and Shin, 2019). One more theoretical approach contextualizes leadership impacts on business efficacy: “The higher echelons theory” (Hambrick and Mason, 1984). According to this strategy, the top executives in business extensively impact business outcomes. Another study concludes that the charismatic personality of a leader, or idealized influence, greatly differs in performance and outcomes (Waldman et al., 2004).

In contrast, it is of great consideration that some of the researchers failed to demonstrate an association between CEO transformational style and business outcomes specifically, where idealized influence prevailed (Samson and Ilesanmi, 2019). Similarly, some scholars raise queries regarding the use of subjective examination measures for leadership by distributing questionnaires to the followers (Ingram, 2016). They recommended using objective measures other than the perceptions of the followers regarding their leaders in the examination of leadership style for validating the theory implications (Antonakis and House, 2014). Accordingly, the hypothesis proposed is:

Hypothesis 1: Transformational leadership has a significant influence on firm performance.

Mediating Role of Corporate Sustainability

Doh and Quigley (2014) described leadership as an executive position in a firm with the ability to influence others. In contrast, Opoku et al. (2015) shared the opinion that leadership is not only required at all stages in an organization, but can also emerge at various organizational levels. Moreover, leadership is not concerned with any specific position in an organization, but it can be experienced by different officials at different stages of operations in an organizational context (Bass and Riggio, 2006). Furthermore, Ferdig (2007) explained that leaders are the persons who inspire others, share vision, develop harmony, guide

followers, and transform changes in the values and activities of the subordinates to achieve organizational goals. In the context of corporate sustainability, communication of organizational vision by the leaders is welcomed by all stakeholders as reliable information (Linnenluecke and Griffiths, 2010). Accordingly, corporate sustainability can be defined as “the leadership and management notions that a corporation embraces, so that it can deliver social, environmental, and economic outputs at the same time” (Linnenluecke and Griffiths, 2010). So, members of a business, who take the role of leaders, can safeguard the interest of a business only if they effectively communicate the better future perspective of business to the firm, to themselves, and to the community (Wales et al., 2013). The relation of corporate sustainability to the performance of the business is gaining wider attention in corporate context because stakeholders are taking a keen interest in the responsibility culture of the organization (Eccles et al., 2014).

Moreover, this topic gained the extensive interest of researchers in evaluating the corporate sustainability impact on the performance of the organization (Burhan and Rahmanti, 2012). Researchers applied different methods to evaluate corporate sustainability including content analysis based on reports published about corporate sustainability, interviews, questionnaires, and various indexes (Aggarwal, 2013). Accordingly, López et al. (2007) studied the association between corporate sustainability reporting about the economic performance of the business and concluded a significant positive association among these. Schadewitz and Niskala (2010) conducted further research based on Finland organizations by applying the GRI reporting framework. This research concluded that quality disclosure of corporate sustainability has a significantly positive connection with the organization's market value. In their study, Reddy and Gordon (2010) found a significant association of corporate sustainability reporting in describing abnormal profits by applying the “event study method” taking a sample of 68 corporations registered with the stock exchange of New Zealand and Australia. Similarly, Ameer and Othman (2012) concluded, while studying the qualitative features of CS reports about financial outcomes of business, that a correlation exists among variables. They incorporated data from the top 100 sustainable organizations around the globe for examination. Hence, the above-discussed literature indicates that corporate sustainability potentially mediates the association between transformational leadership and the performance of the business. Accordingly, the hypotheses proposed are:

Hypothesis 2: Transformational leadership has a significant influence on corporate sustainability.

Hypothesis 3: Corporate sustainability significantly mediates the association between transformational leadership and firm performance.

Knowledge-Sharing as Moderator

Knowledge management is defined by researchers as the acknowledgment and application of obtained information in a business to counter competitors (Alavi and Leidner, 2001). Dissemination and availability of knowledge is an integral

part of knowledge management between organizations or within the business. In the literature, it is described as the communication of collected information and capabilities while resolving issues, developing innovative ideas, and applying policies and procedures (Chen et al., 2018). Some other scholars defined the concept as a process consisting of various stages, including commencement, application, approval (Yu and Yang, 2018), communication (Cavusgil et al., 2003), or sharing and integration (Wang, 2019). In the past, the concept of knowledge-sharing was surprisingly neglected by people (Cummings, 2004). However, at the start of the 20th century, the significance of knowledge-sharing was acknowledged by humans over time. After that, knowledge management and its processes remained a concept of core importance in the area of human resources (Blankenship and Ruona, 2009). Macneil (2001) particularly paid importance to tacit knowledge and considered it the most valuable kind of knowledge that includes expertise, abilities, and understanding of humans. Consequently, participants are motivated to exercise both kinds of knowledge, i.e., explicit and tacit, with the help of knowledge-sharing culture, while facing a problematic situation (Lin and Lee, 2004). Another study concludes that knowledge-sharing more effectively affects the ambidexterity of employees while working (Caniëls et al., 2017; Caniëls and Veld, 2019).

“Knowledge-sharing” is a complex idea. Knowledge is a priceless asset that could generate extra value for a business for its advancement (Jeon et al., 2011). Additionally, sharing of knowledge is concerned with the assimilation and integration of information (Nooteboom et al., 2007). Chiu et al. (2006) indicated that sharing information helps an organization when allocating resources. In numerous organizations, it is proven that knowledge is a substantial source that performs a decisive role in the long-term performance of an entity (Choi et al., 2008). Obtaining a sustainable advantage is based on the capability of a business to create and implement intellectual information. In addition, Jilani et al. (2020) concluded that attaining and practicing an effective knowledge management environment consistently results in the better performance of the organization. Likewise, Hoopes and Postrel (1999) argued that the development of a distinctive knowledge communication framework with an integrated approach potentially provides sources of competitive edge and, thus, enhances sustainable performance. Besides, human capital theory hypothesizes the impact of employees’ information, ability, skill, and other qualities about the sustainability of an organization (Schultz, 1961; Cummings, 2004). Based on the theory of human capital, this study hypothesizes that the behavior of sharing knowledge among participants can enhance and support the dynamic capabilities of an organization in developing sustainable operations (Lee and Ha-Brookshire, 2017). Therefore, this study theorizes that the knowledge-sharing process works as “enablers” that communicate information appropriately, which results in the sustainable performance of the business (Obeidat and Tarhini, 2016; Caniëls et al., 2017). Accordingly, it is hypothesized that:

Hypothesis 4: Knowledge-sharing significantly moderates the relationship of transformational leadership with corporate sustainability.

RESEARCH METHODOLOGY

Research Approach

Research methodology depends on the objective and problem of the study (Sabir et al., 2019), and a suitable methodology is essential for the accuracy of findings. By considering the problem and objective of the current study, a quantitative approach to research has been chosen and a cross-sectional method has been used for data. For data collection purposes, a questionnaire was used by the researchers. The use of a survey questionnaire is appropriate for the current research study because it makes it possible for researchers to collect data in a reasonable time and it is a cost-effective method of data collection (Sekaran and Bougie, 2003). Furthermore, this method ensured respondents’ secrecy and sensitive information can be easily collected. See **Appendix**.

Questionnaire Development

The primary purpose of the research is to investigate the mediating role of corporate sustainability in the relationship of the impacts of transformational leadership on the performance of firms. This study also aimed to investigate the moderating role of knowledge-sharing on the relationship of transformational leadership with corporate sustainability. A questionnaire has 26 items that were all drawn from prior studies and rated on a 5-point Likert scale (ranging from 1, “strongly disagree,” to 5, “strongly agree”). A pilot study was conducted first to determine the questionnaire’s reliability and validity. The respondents reviewed the questionnaire and made some suggestions for improvements. The feedback and ideas of the pilot research respondents were heeded, and the resulting instrument was tweaked and refined before being delivered to the study’s target population for data collection. The scales items were adapted from existing studies. Items for firm’s performance were adapted from the study of Hancott (2005), the scale for Knowledge-sharing was adapted from the study of Jilani et al. (2020), and the scale of transformational leadership was adapted from Vera and Crossan (2004).

Sampling and Data Collection

The study’s target group included project managers, project team leaders, and project staff. We collected information from the largest automobile companies, such as the Shanghai Automotive Business Corporation (Group), China FAW Group Corporation, Dongfeng Motor Co., Ltd., Beijing Automotive Group Co., Ltd., and China North Industries Group Corporation. These companies have the biggest market share in the Automobile Manufacturing industry in China. Following research ethics, all participants were assured that the information they provided would be kept private and solely used for this study. The data for this study were collected using a convenient sampling technique from the respondents. This study used Krejcie and Morgan’s (1970) table for determining the study’s sample size. Furthermore, this study also used G*Power version 3.1 software to confirm

TABLE 1 | Demographics of respondents (N = 198).

Respondents' profile	Categories	Percentages
Gender	Male	70.5
	Female	29.5
Age	20–30	10.5
	31–40	24.5
	41–50	30.5
	Above 50	34.5
	Intermediate	15.0
Education	Graduate	37.0
	Master	46.0
	Higher	2.0
Position	Top level	26.0
	Middle level	34.0
	Line manager	18.0
	Entry level	22.0
Income level	21–40K (Yuan)	16.5
	41–60K (Yuan)	23.5
	61–80K (Yuan)	27.0
	Above 80K (Yuan)	33.0

the sample size. This study obtained a sample size of 98 at a statistical power of 0.95. The current study chose a sample size of 300. Moreover, **Table 1** represents the response rate of distributed questionnaires.

Demographic Profile of the Respondents

Table 1 show the demographic profile of the respondents. A total of 198 individual respondents have answered the questionnaire and their responses were analyzed. The study reveals that men were 70.5%, whereas women are 29.5% of the total sample size. It can also be concluded from the analysis that the number of men participating in activities, such as in transformational leadership and firm performance, is greater than the number of women. Moreover, older respondents have more confidence as they gained more experience and insights over time, so they are more aware of the role of transformational leadership and firm performance. Respondents 20–30 years of age are 10.5%, while respondents 31–40, 41–50, and above 50 years of age are 24.5, 30.5, and 35.5%, respectively. A higher education gives a more optimistic outlook and a profound effect on employee performance as most of the graduates and postgraduate respondents are well-aware of the importance of transformational leadership and firm performance; the percentage levels of graduate and postgraduate respondents are 37 and 46%, respectively. Furthermore, most of the respondents are top-level and middle-level employees in various sectors. Due to their high job profile in their respective group, 26 and 34% represent a higher level of commitment toward transformational leadership and firm performance. Finally, respondents with income levels of 61–80K (Yuan) and above 80K (Yuan) ratio of their investment are 27 and 33%, respectively.

TABLE 2 | Internal consistency, convergent validity, composite reliability, and AVE.

Construct	Indicators	Loadings	Cronbach's alpha	Composite reliability	AVE
Firm performance	FP1	0.731	0.919	0.934	0.614
	FP2	0.688			
	FP3	0.627			
	FP4	0.664			
	FP5	0.845			
Corporate sustainability	FP6	0.880	0.895	0.923	0.706
	FP7	0.867			
	FP8	0.849			
	FP9	0.854			
	CS1	0.809			
Knowledge-sharing	CS2	0.878	0.844	0.889	0.618
	CS3	0.904			
	CS4	0.848			
	CS5	0.754			
	KS1	0.816			
Transformational leadership	KS2	0.881	0.888	0.913	0.601
	KS3	0.793			
	KS4	0.736			
	KS5	0.691			
	TL1	0.737			
	TL2	0.832			
	TL3	0.869			
	TL4	0.816			
	TL5	0.693			
	TL6	0.720			
	TL7	0.753			

Source: Authors' estimations based on data.

ANALYSIS AND RESULTS

This study used Smart PLS 3 (SEM) for data analysis and adopted a two-step technique to analyze data and in reporting of analysis results (Henseler et al., 2009).

Measurement Model Assessment

For the examination of the reliability and validity of data, measurement model was used by using PLS-SEM (Ringle et al., 2015). The reliability of constructs was examined by the values of the factor loading, Cronbach's alpha, composite reliability, and average extracted variance (AVE). Discriminant validity was also evaluated by using a measurement model (Fornell and Lacker, 1981). **Table 2** illustrates the results of the measurement model.

SmartPLS is used to analyze data using two basic techniques: partial least squares and structural equation modeling (Shiau et al., 2019). SmartPLS is an obvious choice for diverse transformational leadership and firm performance when the objective of the study is to reveal such a relationship and make predictions in the model. **Table 2** shows the results of two measurement model components: convergent

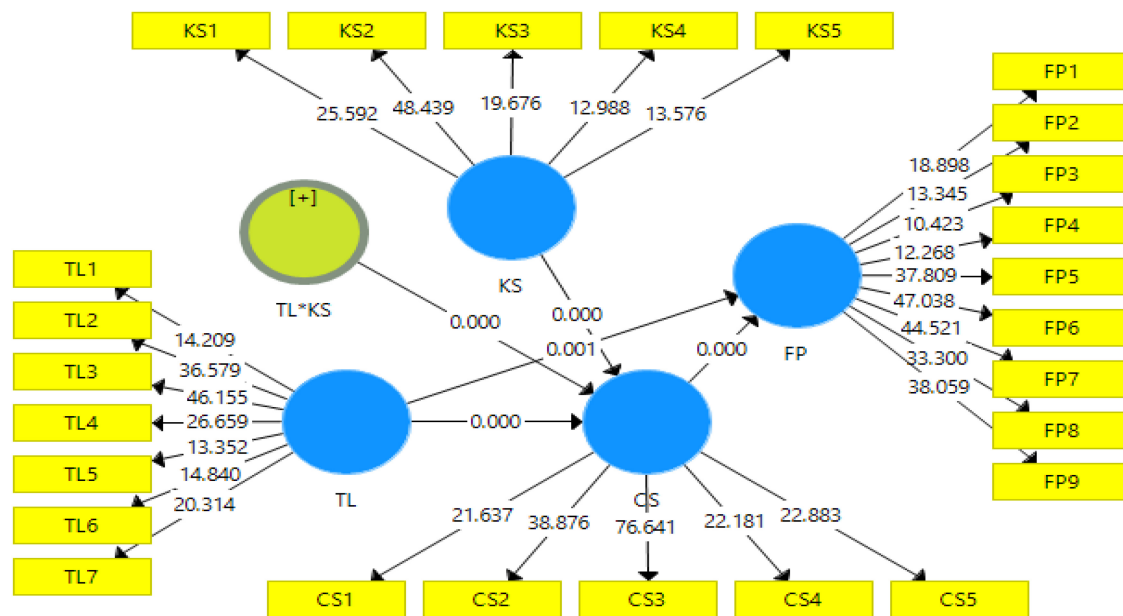


FIGURE 1 | Structural model assessment.

TABLE 3 | Heterotrait-Monotrait Ratio (HTMT).

	CS	FP	KS	TL
CS				
FP	0.574			
KS	0.545	0.670		
TL	0.531	0.479	0.431	

Source: Authors' estimations based on data.

validity and internal consistency reliability. All the components and indicators have to meet the model's specific measuring requirements. The outer loading values of the model exceeded the specific criterion of 0.650, suggesting that indicator reliability has been achieved (Shiau et al., 2019). Furthermore, the recovered average variance value is bigger than the target value (0.50) suggesting that the model's convergent validity has been realized (Shiau et al., 2019). Furthermore, the composite reliability values vary from 0.889 to 0.934, suggesting that the values are greater than 0.70, implying that internal consistency has been achieved (Shiau et al., 2019). The results of the two tests show that the model's measurements, such as convergent validity, internal consistency, and reliability, are perfect.

The heterotrait-Monotrait Ratio is a substitute technique to find out the construct's discriminant validity. Discriminant validity refers to the degree of correlation between measurement items from one construct and measurement items from other unrelated constructs that should not be connected. This test determines how much variance can be attributed to a group of constructs where two "conceptually dissimilar" constructions must be sufficiently different (Henseler et al., 2012). The recommended value of HTMT is below 0.85 to achieve discriminant validity (Kline, 2011). Table 3 shows that the level of discriminant validity in the study is achieved.

TABLE 4 | Structural model.

Pattern	Rsq	Adj	f2	Q2	VIF	SRMR	NFI	rms Theta
CS	–	0.055	0.040	2.320	–	–	–	–
FP	–	0.005	0.028	2.201	–	–	–	–
KS	–	0.048	0.043	2.534	–	–	–	–
TL	0.580	–	–	–	0.025	0.732	0.149	–

Table 4 demonstrates that all values of VIF are lower than a threshold of 5 implying that there is not a problem with collinearity across the various constructs (Cheah et al., 2018). The modified R^2 , which presented the amount of variance explained by exogenous variables by endogenous variables, is used to determine the predictive power of the model. The modified R^2 value of 0.580 implies that, overall, all behavioral practices contribute more than 58% of individual investment decisions. The findings of the size of the effect using the model's f^2 are shown in Table 4. Effect sizes with values ranging from 0.005 to 0.055 are included in this category. All the Q^2 values in the model are < 0 indicating the reliability of the model. The goodness of fit values is $0.025 < 0.080$. The value of the normal fit index is 0.732 and is close to 1, and the value of theta is close to 2 showing the reliability of the model fit with specified analysis. The structural model assessment is depicted in Figure 1.

Structural Model Assessment

The structural model assessment (Direct Effect) is shown in Table 5. For the estimation of the hypotheses of the study, SEM-PLS structural model analysis was conducted. The first hypothesis of the study states that transformational leadership has a significant positive relationship with the performance of the firm. The results of the structural model analysis show that transformational leadership behavior plays a significant role in

TABLE 5 | Structural model assessment (direct effect results and decision).

Hypotheses	Relationship	Beta	STDEV	T statistics	P-values
H1	TL→FP	0.233	0.067	3.504	0.001
H2	CS→FP	0.420	0.064	6.609	0.000

Source: Authors' estimations based on data.

TABLE 6 | Structural model assessment [indirect (mediation)].

Hypotheses	Relationship	Beta	STDEV	T statistics	P-values
H3	TL→CS→FP	0.147	0.032	4.567	0.000

Source: Authors' estimations based on data.

the performance of a firm ($\beta = 0.233$, $t = 3.504$). Therefore, H1 is supported by the results of the analysis. Moreover, the second hypothesis of the study states that corporate sustainability has a significant positive relationship with the performance of the firm. The results of the study reveal that corporate sustainability has a significant positive relationship with the performance of a firm ($\beta = 0.420$, $t = 6.609$) and H2 is accepted on statistical grounds.

The structural model assessment (Indirect Effect) is shown in **Table 6**. For the estimation of the mediation effect, the bootstrapping procedure is adopted by using PLS-SEM. The third hypothesis of the study is that corporate sustainability positively mediates the relationship between transformational leadership and the performance of the firm. The results of the analysis indicated that corporate sustainability positively mediates the relationship between transformational leadership and the performance of the firm ($\beta = 0.147$, $t = 4.567$) and supported H3.

Table 7 specified the results of the moderation analysis, according to the fourth hypothesis of the study that knowledge-sharing positively moderates the relationship between transformational leadership and the performance of the firm. The results of the analysis revealed that knowledge-sharing plays a significant and positive moderating role in the association of transformational leadership behavior with corporate sustainability ($\beta = 0.349$, $t = 5.617$) and supported H4.

Goodness-of-Fit Index

The geometric mean of both the AVE and the endogenous variables' average R^2 is used as the global fit measure (Tenenhaus et al., 2005). The index shows whether the model is fit completely to explain the data. Its values range between 0 and 1. The values close to 1 show a strong model fit (Wetzels et al., 2009). Calculations are provided in **Table 8**. The table below shows the Goodness-of-fit (GOF) value of 0.450, which shows a strong

TABLE 8 | Goodness-of-fit index calculation.

Construct	AVE	R2
CS	0.45	0.16
FP	0.44	0.14
KS	0.27	0.26
TL	0.31	0.21
AVE × R2		
GOF = $\sqrt{(AVE \times R2)}$	0.450	

model fit. Our model is fit to explain comprehensively the prediction of the data in the analysis.

DISCUSSION

The primary purpose of the research is to investigate the mediating role of corporate sustainability in the relationship between the impacts of transformational leadership on the performance of firms. This study also aimed to investigate the moderating role of knowledge-sharing on the relationship of transformational leadership with corporate sustainability. Transformational leaders influence the performance of their followers by strengthening social relationships (Wang et al., 2016). TL strengthens the emotional bond or identification between the supervisor and the follower, allowing the follower to perform above and beyond expectations. The successful adaptation of organizations to their new environment necessitates the involvement of more transformational leaders. Transformational leaders may successfully alter an organization's culture and build a system-wide alignment of the organization's strategies to meet the demands of the environment. Furthermore, economic, social, and environmental sustainability are the three pillars of corporate sustainability that work together to help businesses achieve more sustainable practices. Businesses must change their mindset from one of quick profits at the expense of the environment to one of mutual interdependence and eco-innovation. The adopting of sustainable practices benefits businesses in a variety of ways including greater brand image, lower costs, happier shareholders, more production, and a slew of other advantages. Individuals, businesses, and governments are all prioritizing sustainability as a critical component of their strategies. At a time when society is becoming more conscious of its impact on the environment, the corporate landscape is undergoing significant changes because of this collective push toward a more sustainable future. Finally, organizations may use knowledge-sharing to improve their skills and capabilities, raise their value, and maintain their competitive advantage. Knowledge is a company's most important resource since it embodies intangible assets, routines, and creative processes that are difficult to duplicate (Renzl, 2008). Knowledge-sharing enhances the knowledge resource, and dynamic capability plays a significant part in achieving a competitive advantage (Choi et al., 2017). Researchers discovered that an organization's inventive capability increases

TABLE 7 | Structural model assessment (moderation effects).

Hypotheses	Relationship	Beta	STDEV	T Statistics	P-values
H4	TL*KS→FP	0.349	0.062	5.617	0.000

Source: Authors' estimations based on data. *Denote the moderating relationship of Knowledge sharing and Transformational leadership with firm performance.

its energy level, which has a beneficial impact on performance (Proksch et al., 2017).

CONCLUSION

The purpose of this study is to inspect the role of transformational leadership in firm performance with a mediating effect on corporate sustainability. This study also intended to explore the moderated mediation effect of corporate sustainability with the moderating role of knowledge-sharing. The findings of the analysis indicated that transformational leadership has a positive and significant association with firm performance. Sleiman (2016) and Jensen et al. (2020) argued that the behavior of transformational leadership has a significant influence on the performance of the firm. However, transformational leadership depends on the sector, and it confers sustainable competitive advantage in a competitive environment. Moreover, the results of the analysis revealed that corporate sustainability has a significant mediation role in the association of transformational leadership with firm performance. According to Eccles et al. (2014), those companies that are more sustainable outperform in terms of accounting performance and the stock market in the short, as well as in the long term. Findings also show that knowledge-sharing significantly moderates the relationship of transformational leadership with corporate sustainability.

Theoretical Implications

The roles of transformational leadership have been studied in a broader context in prior studies; this research study will add to the current literature to inspect the role of transformational leadership in firm performance with the mediating effect of corporate sustainability with the moderating role of knowledge-sharing. Moreover, there has been minimal research on the role of transformational leadership in firm performance with mediating effect of corporate sustainability with moderating role of knowledge-sharing particularly in the automobile sector in a developed country such as China. This study has demonstrated the importance of various leadership styles and their significant impacts on firm performance. Corporate sustainability has a significant mediating role in the association of transformational leadership and firm performance. Findings indicated that knowledge-sharing has a moderating role in the association of transformational leadership and firm performance. The findings of this study contribute to the body of knowledge and show that leadership style has a significant effect on firm performance, and knowledge-sharing culture in firms is essential for better performance of the firm. Furthermore, firms may improve their performance by improving their sustainability and by creating a knowledge-sharing culture.

Practical Implications

From a practical perspective, the finding of the contemporary study has several implications for top management in the automobile sector. Leadership style plays an important role in the performance of a firm and knowledge-sharing is the vital component that enhances the positive effect of transformational leader behavior on firm performance. Top management of firms needs to develop transformational leader behavior and create a knowledge-sharing environment in the firm for better performance in a competitive environment. Furthermore, firms may improve their performance by improving corporate sustainability.

Limitations and Future Research Directions

There are various limitations in this study that need to be addressed in future research. Firstly, the study's sample was limited to individuals working in China's small- and medium-sized automobile sector, which may make the findings hard to extend to new businesses in a new production set up. Secondly, this study only considered a small sample of individuals from a specific area in China and ignored the rest of the country. The third limitation of the study is about the many forms of leadership selected to represent the idea of management leadership as the literature lists various other types of leadership besides leadership that is both revolutionary and transformational. Furthermore, the study focused on the impact of styles of leadership, such as revolutionary and transformational, on specific corporate sustainability practices, ignoring other processes that may be important to the organization. Fourth, corporate sustainability and firm performance may not be solely determined by leadership. Other factors may be important in understanding this relationship and should be considered. Fifth, the primary data collection approach was a quantitative methodology, which may be viewed as a study limitation. Questionnaires and other self-reporting data collection procedures may cause prejudice in response; consequently, to achieve the study goals, more qualitative techniques should be used to collect more accurate information and results. Finally, this study was conducted in the context of Chinese culture setup so the findings may be limited to the belief, ethics, and values of the Chinese working environment.

Future research should replicate our findings across a sample of diverse organizations, so that new businesses could be accurately signified (Wales et al., 2013). Furthermore, the forthcoming study should attempt to collect samples from other regions around the country to improve the generalizations of the study. Moreover, if the researcher measured the different constructs of the study while using different dimensions it will be interesting to see whether the results were matching or were different from the prior studies. Future studies should be aware of this link and may attempt to

provide further discernment by considering new characteristics in addition to leadership styles that may have an impact on the success of leaders in organizations and other structures in the future. Similarly, future studies should be directed to use mediating and moderating relationships to the literature and provide further explanation. To get data that accurately represents the study's variables, researchers should use both quantitative and qualitative data collection methodologies. Future researchers should use structural equation modeling as an analytical technique because it is thought to be the most effective at streamlining the embellishment of the basic model of the study.

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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

MS presented the main idea and contributed to writing the draft. TI contributed to the technique and methodology. NJ collected the data. MZ performed the analysis. All authors contributed to the article and approved the submitted version.

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APPENDIX A

Questionnaire of the Study

Firm Performance

1. Firm Performance is the extent to which individuals or organization remains successful while achieving a mission.
2. Firm Performance is the depiction of several fulfilled tasks and set targets or the aim of business at the end.
3. Firm performance is the ability of firms in using human and material resources to achieve their targets.
4. The success of the firm's performance depends upon the capabilities of the organization personnel.
5. CEOs potentially form the performance of their organization by communicating its core values and beliefs.
6. Transformational leadership and job satisfaction have a significant relationship with firm performance.
7. Organizations structure of command is the key driver for better performance in the market.
8. Organizations in challenging environments show strong commitment regarding the achievement of their targets.
9. Organizational pay consideration is crucial for individuals for achieving firm-specific performance.

Transformation Leadership

Following rules should neither be corrupted nor self-serving.

1. Go beyond self-interest for the bettering and effectiveness of firm performance.
2. Never take the achievements of other people as his/her own.
3. Explain the long-term meaning of the performance to personnel.
4. Consider the real conditions of personnel when in contact with them.
5. Show high commitment to his/her work and keeps high levels of passion while facilitating personnel.
6. Good at and never hesitate to take action when dealing with difficult circumstances.

Corporate Sustainability

1. We know enough about corporate sustainability.
2. Organizations, where operations are based on sustainable growth, social responsibility, and environmental protections, are sustainable.
3. Sustainable organizations would be considered superior firm performance as the essential component of organizational strategy.
4. Sustainable organizations exploit environmental challenges and legislations to their advantage by developing new environmentally sustainable performances in the organization.
5. Corporate sustainability must be taken as an important route for the long-term development of firm performance.

Knowledge-Sharing

1. Knowledge management is the acknowledgment and application of obtained information in a business to counter the competitors.
2. Dissemination and availability of knowledge is an integral part of knowledge management between organizations or inside the business.
3. Knowledge-sharing organizations better achieve their targets as compared to competitors in the market.
4. Organizational personnel are motivated to exercise both kinds of knowledge, i.e., explicit and tacit with the help of knowledge-sharing culture, while facing a problem situation.
5. Getting a sustainable advantage based on the capability of a business of creating and implementing intellectual information.



Linking Authentic Leadership to Transactive Memory System, Team Innovativeness, and Selling Performance: A Multilevel Investigation

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In today's complex selling environment, it is challenging for sales leaders to enhance the effectiveness of their sales teams. The aim of this study is to observe the impact of authentic leadership on salespersons' internal and external behaviors under B2B selling context [i.e., transactive memory system (TMS), innovative work behavior, and customer-directed OCB] and their consequences in team selling performance. Respondents of our survey included salespersons and managers working in the sales departments of pharmaceutical companies. By using structural equation modeling, the dyad responses from 348 matched salespeople-managers were analyzed. The findings disclose that authentic leadership behavior has a stronger relationship with the TMS, innovative work behavior, and customer-directed OCB. Our results also indicate that innovative work behavior and customer-directed OCB are potentially mediated between authentic leadership and team selling performance relationship. The theoretical implication of these results for managerial practice is also discussed.

Keywords: authentic sales leadership, transactive memory system, innovative work behavior, customer-directed OCB, team selling performance

INTRODUCTION

In most industries, the sales cycle is getting longer and more complex (Plouffe et al., 2017). As customer complexity increases, sales and marketing leaders should constantly regulate the shifting eventualities of industry. Many scholars have said that authentic leadership behavior promotes continuous effects in social behaviors such as highly principled and ethical values (Gardner et al., 2005; Joo and Jo, 2017). Authentic leaders have major resources such as self-knowledge, clarity of self-impression, and self-image values (Gardner et al., 2005), which motivate leaders to act as a resource for social support to followers' internal and external behaviors at a personal level and subordinates at work-unit level (Zhou et al., 2014; Braun and Nieberle, 2017). However, this multilevel perspective encouraged authors to adopt the conservations of

resources (COR) theory (Hobfoll, 1989) to address the perception of authentic leadership as a resource in organizations at different levels (i.e., team level and individual level) as well as its consequences on overall team performance. Authentic leaders aim to help salespeople to develop their resource pool as a source of motivation for subordinates (Braun and Nieberle, 2017). They could engage in different sales activities beyond minimum requirements, such as innovative work behavior and customer-directed citizenship behavior. This study can place authentic leadership as a unique style to the success of sales employees from the resource-based perspective, which is parallel to more commonly studied leadership styles in sales literature.

Besides, the conservation of resources (COR) theory also facilitates implementing a transactive memory system (TMS), which can be used as a resource to invest in team development. Thus we can argue that TMS might affect team-level performance. Multilevel sales departments allow cross-group efforts and the circulation of job-related tasks according to the area of capability. In this regard, certifying a well-designed TMS is specifically important among all groups (Faraj and Yan, 2009; Kotlarsky et al., 2015). A TMS is described as a joint department of team members to acquire, understand and transmit team-related information (Hollingshead, 2001; Yan et al., 2021; O'Toole et al., 2022). Since the TMS is a possible antecedent in sales literature, the connection between authentic sales leadership and TMS has not been researched or examined. These two concepts have seemed to be explored in two separate studies (Hollingshead, 2001; Gardner et al., 2005). Analyzing the influence of authentic sales leadership through the COR perspective indicates that a comprehensive strategy for resource gain should be a process that ties genuine sales leadership to a TMS.

Innovative work behavior is valuable for both organizational objectives and team selling performance. Previous work has witnessed innovative work behavior as the mediating mechanism (Buranakul et al., 2017; Sanz-Valle and Jiménez-Jiménez, 2018). However, the current research differentiates this constructive mediation mechanism from previous leadership and job performance studies, such as job fulfillment, organizational loyalty, perceived emotional well-being, and work engagement (Ashill et al., 2008; Guchait et al., 2014; Karatepe and Olugbade, 2016). Additionally, to explore authentic leadership effect through the COR perspective advocates that a comprehensive strategy for resource gain should be the procedure of relationship with customer-directed OCB (Luu, 2020).

To sum up, this research covers three important gaps in the B2B sales leadership literature. First, the research is the earliest attempt to explore the effect of authentic leadership as a resource to the TMS that exchange and retrieve useful knowledge among workgroups. Our study looks into team selling performance that the authentic leadership literature has mostly ignored in the B2B sales context. The related outcomes in authentic leadership literature involved employee innovation and job performance (Wang et al., 2014; Zhou et al., 2014). Second, the examination of authentic leadership findings through the viewpoint of COR theory proposes that a constructive resource benefit method could connect authentic leadership to the employee's extra-role behavior toward customers. However,

to the best of the authors' understanding, only a few trials have been performed on the connection between authentic sales leadership and customer-directed OCB. As a result, we are attempting to address this void in this research. Third, previous innovation research has relied extensively on the consequences and mediating mechanisms of innovative work behavior (Riaz et al., 2018), while overlooking the interactional effect of employees' innovation with any other discretionary behavior. Customer-directed OCB has previously been viewed as an important discretionary behavior (MacKenzie et al., 1999), and classifies the salespeople who go beyond and above the call of duty for consumers. Our research explores how innovative work behavior in a combination of customer-directed OCB influences sales team performance. Additionally, the research also examined innovative work behavior as a potential mediator between authentic sales leadership and team selling performance relationships. By visualizing this argument, we claim that this research significantly adds value to the growing body of literature.

THEORETICAL BACKGROUND AND HYPOTHESES

Many authors note the importance of the principle "to be true of yourself," which has become a major part of authentic leadership theory. Although in order to be genuine, we sometimes ignore that one must also be truthful to others. Due to the increased number of corporate scandals, dishonesty, and unethical activities undertaken by business leaders, authentic leadership has gained empirical popularity over time (Gardner et al., 2011). In the pharmaceutical industry, it has been deemed necessary among scholars and practitioners to put their analytical lens on this leadership style. However, authentic leadership which tends to be important for team selling performance may provide a unique concept to support other sales leadership frameworks. According to COR perspective, the study sheds light on how authentic leadership affects salespersons' internal and external sales behaviors at different levels within the organizations.

Authentic Leadership and Transactive Memory System

In the context of improving team-level consequences, one of the prime goals of this research is to develop insights into authentic leadership and TMS in B2B selling context. The COR theory proposes that individuals always attempt to gain, preserve, defend and encourage various forms of resources (Hobfoll, 2001). In this context, TMS can be viewed as a valuable enterprise resource for individual salespeople because it provides a friendly and knowledge-exchange climate that overcomes mental stress and improve teamwork to accomplish tasks. According to COR theory, people need to spend resources at work (i.e., TMS) on the development of skills or competencies and enforce against the possible loss of resources or acquire more resources (Hobfoll et al., 2018).

Additionally, authentic leaders are observed as authentic (i.e., responsible, genuine, and honest) by followers. The decision-making

of authentic leaders is transparent and associates well with their subordinates (Avolio et al., 2009). The TMS provides critical information that enables coworkers to easily exchange their knowledge. Besides, the team with a well-designed TMS will share knowledge more efficiently. Previous research highlights the relationship of authentic leadership with expertise shared by the followers (Reed et al., 2011). In a study, Peterson et al. (2012) suggest that authentic leaders should encourage their followers to trust the working environment and be able to retrieve and share their knowledge with other colleagues in order to establish trust. It is stated by Hahm (2017) that followers who are influenced by authentic leaders will have a tendency to retrieve and share their specified knowledge and capabilities with other colleagues for overall team achievements. Therefore, we suppose that authentic sales leadership may have a positive influence on the TMS and suggest the following hypothesis.

H1: Authentic sales leadership is positively related to the TMS.

Authentic Sales Leadership and Innovative Work Behavior

An important variable in our research model is innovative work behavior. Innovative work behavior can be outlined as a salesperson's purposeful impression of unique ideas, products, procedures, and practices in his/her working environment (Esam et al., 2012). The COR theory suggests that innovative work behavior is now one of the aspects in which salespeople could improve or decline as a means of acquiring or maintaining valuable resources (Kiazad et al., 2014). According to authentic leadership theory, authentic leaders can support innovation by encouraging their team members to be more brave and creative (Avolio et al., 2004). Organizational creativity literature suggests that leaders and corporations should develop a positive workplace environment for improving employee innovative work behavior. Authentic leaders have the ability to develop healthy emotions in their team members by fostering optimistic, supportive, and fair relationships, which results in increased innovation (Peterson et al., 2012). Prior pieces of evidence have proved an association between ethical observation and employee innovative work behavior (Bierly et al., 2009). According to Walumbwa et al. (2008), authentic leadership dimensions (self-awareness, internalized moral perspective, relational transparency, and balanced processing) encourage innovativeness. For example, relational transparency is responsible for innovation by expressing new ideas, difficulties and transmitting useful information explicitly. Therefore, based on the aforementioned argument we suggest the following hypothesis.

H2: Authentic sales leadership is positively related to innovative work behavior.

Authentic Sales Leadership and Customer-Directed OCB

To inspire and support subordinates, authentic leaders frequently exchange resources for making decisions if necessary and are conscious of their personal opinions, standards, objectives, and

emotions (Wang et al., 2014). Authentic leaders can inspire their subordinates through a reflective form of commitment over a longer duration to produce effective results (George, 2003). Furthermore, with customer-directed OCB salespeople may serve and solve the customer problems by going out of their roles and assigned duties, such as fulfilling customer's expectations, user-friendly services, or discovering an appropriate way to expand the customer delivery process. However, in consistent with a recent study on authentic leadership (e.g., Braun and Nieberle, 2017), we take into consideration the COR theory (Hobfoll, 1989) just to highlight that how authentic leadership influences their sales team's productivity in terms of delivering consumers by going beyond and above their assigned duties (Luu, 2020). According to COR viewpoint, "gaining sufficient resources from a source of resources, individuals are inclined to take a positive, rather than defensive, resource gain strategy to increase additional resources and spend their behaviors above and beyond the minimum expectations" (Halbesleben et al., 2014). Peus et al. (2012) have suggested that authentic leadership could be viewed as a possible predictor of employee extra-role behavior. Salespeople are encouraged to devote their time and energy to customer-directed OCB by retrieving resources from authentic sales leaders and acknowledging the fundamentals of those sales-related activities for themselves. We have thus formulated the following hypothesis based on the argument mentioned earlier.

H3: Authentic sales leadership is positively related to customer-directed OCB.

Transactive Memory System, Innovative Work Behavior, and Team Selling Performance

Transactive memory systems allow a group member to communicate with other teams, to set their plans more wisely. The most capable member of the team should be preferred for assigning tasks and to support teams to resolve the problem more speedily (Liang et al., 1995). This might be realistic to say that a TMS would have an impact on team-level inventions and outcomes, which is an evolving benefit (Fan et al., 2016). Field studies on executive teams have claimed TMSs as a facilitator of team overall success (Faraj and Sproill, 2000; Lewis, 2004). Despite this, numerous studies have emphasized the concern that the essential TMS-team improvement framework is still unclear, and it has multiple mediating paths such as team productivity (Dayan and Di Benedetto, 2009), team reflectiveness (Dayan and Basarir, 2010), team effectiveness (Zhong et al., 2012). In a performance context, where the TMS is considered relevant, the innovative work behavior tends to be consistently involved in problem-seeking and problem-solving activities such as searching for unique and effective ideas. Therefore, we predict that in a team-based situation, TMSs replicate two dimensions of Amabile (1996) model, which eventually impact salespeople's innovative work behavior. When employees work in a fully advanced TMSs environment, the team communicates valuable information about the actual findings of work-related activities,

allowing them to demonstrate a high degree of meaningful engagement and establish new work patterns. Therefore, we hypothesize that individuals are enthusiastic about working innovatively and enjoying their responsibilities more when engaged in high TMSs. Thus, we propose the following hypotheses.

H4a: Transactive memory system is positively related to innovative work behavior.

H4b: Transactive memory system is positively related to team selling performance.

Customer-Directed OCB, Innovative Work Behavior, and Team Selling Performance

Customer-directed OCB is perceived as an employees' unauthorized behavior when serving customers outside of the formal job responsibilities (Moliner et al., 2008). This action creates a sense of appreciation, encouraging the customer to support the salesperson as the salesperson goes out of the work to support or reward the customers. If leaders are very innovative, an employee seems to be more optimistic in the team's innovative activities. As a result, employees are encouraged to stick with the plans when faced with obstacles and make a strong initiative for the team whenever they want to accomplish shared goals (Deng and Guan, 2017). Subordinates may take part in more productive behavior that benefits both the company and the consumers, which can be defined as their citizenship behaviors. This study is contextualized in the pharmaceutical context. We know that pharmaceutical salespeople interact with extremely well-informed practitioners (i.e., physicians, clinicians, and pharmacists). However, there is hardly any clear connection between a visit by salespersons to the general physician (GPs) and the purchase of drugs. Consequently, pharmaceuticals are not normal products even physicians are very odd customers; so that it is hard for salespeople to manage their expectations and to satisfy their needs. Social exchange theory proposes that a customer would only regard the efforts of sales employees when they are fully committed to their word of mouth promotion and additional businesses (Podsakoff and MacKenzie, 1997). It is stated by Miao and Wang (2016), when salespeople engage in customer-directed extra-role behavior, the customer would not only be willing to adopt the innovative solution by salespeople, but it helps them to turn innovativeness into overall team selling performance. Hence we proposed the following hypothesis (see **Figure 1**).

H5a: Customer-directed OCB is positively related to innovative work behavior.

H5b: Customer-directed OCB is positively related to team selling performance.

Innovative Work Behavior and Team Selling Performance

Innovative work behavior involves salespeople who exhibit distinct behaviors in terms of personal gains and innovative ideas related to team effectiveness (Jiménez-Jiménez and Sanz-Valle, 2011). Previous studies have been investigated that employees' innovative work behavior enhances team-level performance (Oldham and

Cummings, 1996). Innovative behavior is also considered as creative behavior, and the purpose of this behavior is not only to produce new ideas by oneself but also to adopt other ideas that are new or unique to other team members and units (Woodman et al., 1993). Also, salespeople's innovative behavior comprises both the creation and execution of novel ideas (Shalley et al., 2004). Sales team innovation and creativity are valuable to achieve a firm's objective and sales performance. Further, innovative work behavior is considered sometimes risky and beyond the job responsibility by salespeople. So, sales managers must provide a suitable environment of trust, belief, and support to these innovative traits (Anderson et al., 2004). Thus, focusing on the foregoing discussion we proposed the following hypothesis.

H6: Innovative work behavior is positively related to team selling performance.

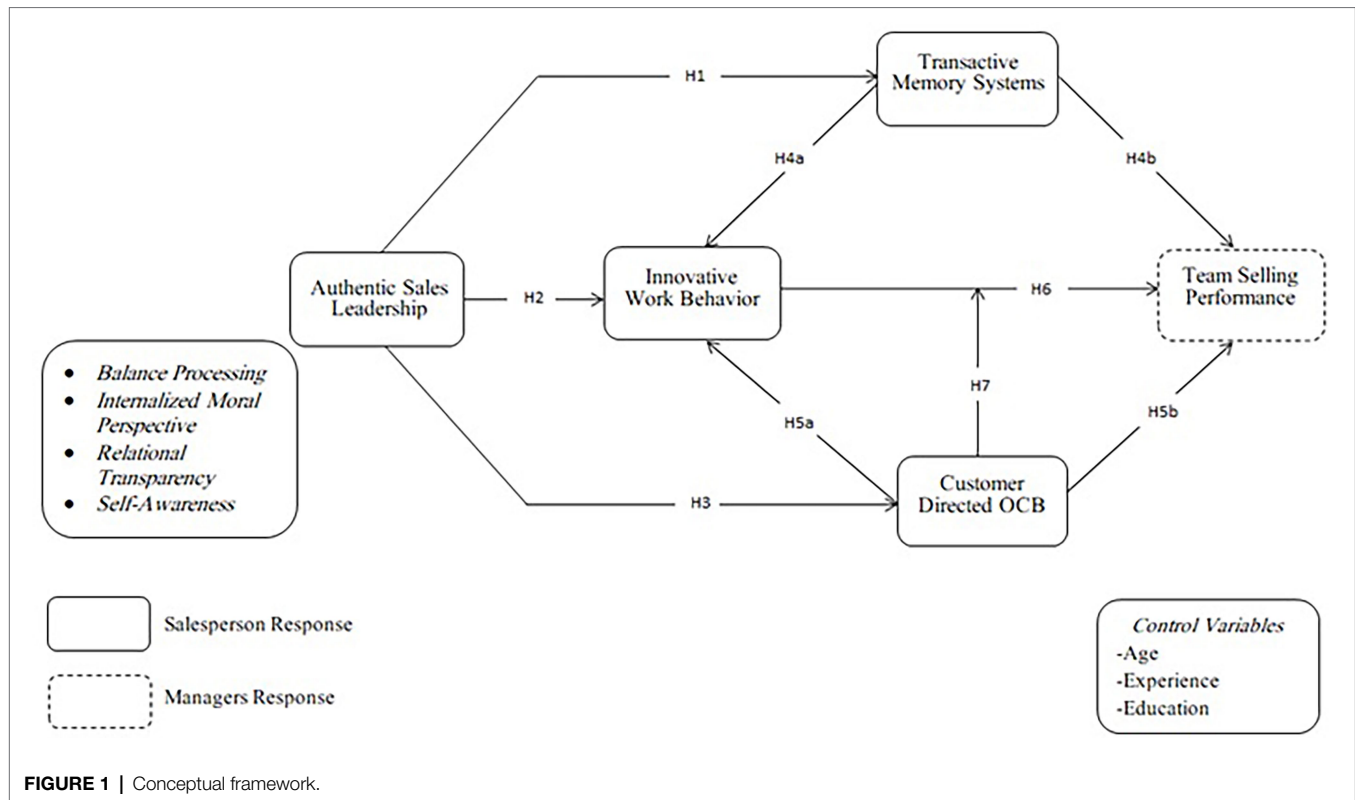
The Moderating Role of Customer-Directed OCB

Luu (2020) classified customer-directed OCB as salespeople working out of the way or across the call of duties for customers. When salespeople engage in customer-directed organizational citizenship behaviors, they provide a high quality of customer experiences. Therefore customers often likely to adopt the salesperson's creative solutions, which directly impact overall team sales performance. Social exchange theory (Cropanzano and Mitchell, 2005) is significant to customer service experiences in which customers and sales service providers have reciprocal expectations. The role of citizenship behavior toward employees' innovativeness has been identified as advantageous (Kesen, 2016). Innovative workers must explore and encourage innovations and find resources for their execution (Amabile, 1988). If teams play their role well then leaders expect team members to expand their existing performance and survive in the long tenure. Many studies have been conducted with the moderating role of employees' citizenship behavior, such as between engagement and employee retention relationship (Farooq, 2015), and employee commitment and performance relationship (Hakim and Fernandes, 2017). However, it is hard to find the moderating role of customer-directed OCB between the linkage of innovative work behaviors and team-level sales performance. In light of the above argument, we may assume that the connection among innovative work behavior and team selling performance will be stronger with the interaction effect of customer-directed OCB.

H7: Customer-directed OCB significantly moderate among the linkage of innovative work behavior and team selling performance such that this relationship is stronger with the greater level of customer-directed OCB.

The Mediating Role of Transactive Memory System, Innovative Work Behavior, and Customer-Directed OCB

Several studies demonstrate a TMS to be vital in improving team performance at all levels (Kotlarsky et al., 2015; Cao and Ali, 2018). However, limited inquiries have been performed on



the TMS in the mediation relationship (Fan et al., 2016). A TMS defines a collaborative team network where participants typically establish to collectively acquire and retain knowledge and expertise in various disciplines (Lewis and Herndon, 2011). Previous research has claimed that the followers' expertise enhances collaboration among the teams under authentic leadership (Reed et al., 2011). According to Hahm (2017), when authentic leaders influence the followers, they improve the tendency to share specialized expertise and useful information with other colleagues for overall team achievement. Meanwhile, prior field studies on structural teams have also claimed TMSs as a supporter of team-level performance (Faraj and Sproill, 2000; Lewis, 2004).

It has been proven that many large sales organizations develop and flourish in the long term just because of their innovative sales employees (Amabile, 1988). Authentic leadership theory suggests that authentic leaders can support innovation by motivating their subordinates to be more creative and enthusiastic (Avolio et al., 2004). It is mentioned in organizational creativity literature that leaders and corporations should develop a positive environment in the workplace for improving employees' innovative work behavior. The positive emotions of salespeople could be improved under authentic sales leadership by creating positive, original, and fair relations, which turns into more innovation. Prior literature suggests that salespeople's innovative work behavior enhances team performance, and their creativity and innovation are meant to achieve firms' overall objectives (Oldham and Cummings, 1996). Many researchers have been investigated the mediating role of innovative work behavior among different constructs (Buranakul et al., 2017; Sanz-Valle

and Jiménez-Jiménez, 2018). However, the literature has neglected to explore the mediating effect of innovative work behavior between the nexus of authentic leadership and team selling performance. Furthermore, many pieces of evidence have been gathered on the positive influence of authentic leadership on team selling performance (Wong and Laschinger, 2013; Luu, 2020). Thus, the above argument supports the mediating effect of innovative work behavior between the above relationships.

In addition, the current study formulates the COR theory to link authentic sales leadership with customer-directed OCB. This is particularly appropriate for authentic leadership behavior because it provides a transparent and competitive work atmosphere that has a direct impact on employee behaviors, provides a high degree of wellbeing, faith, and motivation to implement extra-role duties (Avolio et al., 2004; Avolio and Gardner, 2005). It is pointed out by MacKenzie et al. (1999) that customer-directed OCB accounts for a higher level of the intervention of salesperson performance. Hence, strong evidence allows us to predict the mediating role of customer-directed OCB among the nexus of authentic leadership and team selling performance. We, therefore suggest the primary hypotheses focused on the above conversation.

H8a: Transactive memory system is not significantly mediating the relationship between authentic sales leadership and team selling performance.

H8b: Innovative work behavior is significantly mediating the relationship between authentic sales leadership and team selling performance.

H8c: Customer-directed OCB is significantly mediating the relationship between authentic sales leadership and team selling performance.

MATERIALS AND METHODS

Survey Sample and Data Collection

The model was tested by collecting multilevel data set, including matched surveys from managers and salespersons. A cross-sectional survey method was performed to collect the data. We approached the majority of the sales managers from different pharmaceutical companies in Pakistan. To measure the selling performance of team members, we requested the team managers to evaluate individual performance separately to avoid the common method biased. This situation is considered perfect for analyzing our framework because selling performance is based on the capability of sales team members to offer customized services to accomplish the specific requirements of customers. Importantly, individuals of the sales teams worked collaboratively for information sharing, encouraging and empowering each other to clarify customer responsibilities. Firstly, we needed to get approval and assistance from each pharmaceutical company's management for collecting the data. We decided 86 pharmaceutical companies to participate in our survey, in which 52 companies accepted our invitation. We then gathered relevant information of 105 team sales managers from each company's HR department and contacted them physically and telephonically to participate in our online survey. We administered 20 thoroughly qualitative interviews with sales managers and sales team members before collecting the data to ensure the authenticity of the survey material. Later on, one manager and one to four salespeople were randomly selected to conduct the survey. An online questionnaire link was therefore mailed to the sales managers and requested them to forward the link to each team member. We also asked the salespeople to enter a five-digit number and give it back to their respective managers in order to match their responses from both managers and salespeople. We distributed survey questionnaires to 420 salespeople and their 105 respective team sales managers. After the survey completion, we removed the sales teams with less than four responses from sales employees. The final matched sample resulted in 348 valid responses from salespeople and 87 valid responses from sales managers, yielding 348 sales manager-salesperson dyads. There were 73.5% men among the survey participants. The participants were also qualified; 66.2% had received their 4 year of graduation degree. In terms of experience, 62.3% of respondents had worked in sales for more than 10 years in different organizations.

Construct Measures

We designed a questionnaire to evaluate the hypotheses. The measuring factors have been modified from the prior studies. All the components were assessed on 5-point Likert scales ranging from "1=strongly disagree" to "5=strongly agree." To

measure *Authentic sales leadership*, we adapted 13 items scale measuring four dimensions (self-awareness, balanced processing, relational tendency, internalized moral perspective) from previous literature by Walumbwa et al. (2008). A sample item is "My manager is aware of what he truly finds important." *Transactive memory system* was adapted from previous literature by Lewis (2003), and it has been measured on a 9 items scale. A sample item is "Each team member has specialized knowledge of some aspect of our project." *Innovative work behavior* was adapted from the study of Scott and Bruce (1994). The responses were assessed on a three-item scale. A sample item is "I create innovative solutions for problems." *Customer-directed OCB* was also adapted from the previous study of Miao and Wang (2016) and measured on a 4 items scale that responded by '1=Never to '5=Very frequently. A sample item is "I work more than my duty when serving customers." *Team selling performance* is adapted from the studies of Singh and Das (2013) and Itani et al. (2017) and measured on 4 items scale. A sample item is "My sales team goes above the sales targets."

ANALYSIS AND RESULTS

Model Specification Testing

The current research contains multiple dependent and independent variables; we used structural equation modeling (SEM) by using SmartPLS software. This approach helps researchers to test theoretical questions, for instance, we describe in the model specifications. The growing use of PLS-SEM has demonstrated its robustness and the applicability of the model in the area that is being studied. Our structural model is diverse and requires multiple structures, which encouraged authors to use PLS-SEM. **Table 1** describes the correlation among variables. The correlation values are lower than the standard value of 0.65 (Tabachnick, 1996; Heavey and Simsek, 2015), and the maximum variance inflation factor VIF (2.79) is below the threshold of 3.3 (Kock, 2015), thus proposing that the multicollinearity is not a problem.

To measure the validity and reliability of the variables, we conducted a multi-factor analysis (Gerbing and Anderson, 1988). The coefficient values of reliability are as follows: 0.91 for authentic sales leadership, 0.88 for the TMS, 0.76 for innovative work behavior, 0.72 for customer-directed OCB, and 0.81 for team selling performance. In **Table 2**, we conducted confirmatory factor analysis, and the results of each loading item in the conceptual model were exceeding the projected value of 0.50 (Arbuckle, 2016). Consequently, we acknowledge the importance of each measure to the developed variable. The average variance extracted and composite reliability surpasses the suggested standard value of 0.50 (Fornell and Larcker, 1981). Then we prove the discriminant validity even by the assumption that the average variance extracted of each variable must exceed the squared correlation within each group of variables (Fornell and Larcker, 1981). The results of standardized root mean square residual (SRMR)=0.06; normed index fit (NIF)=0.302 and chi-square (X^2) =837.253 shows the suitable fitness of measurement model.

TABLE 1 | Correlation matrix.

S. No	Variable	1	2	3	4	5	6	7	8
1	Authentic leadership	(0.756)							
2	Customer directed OCB	0.365**	(0.718)						
3	Innovative work behavior	0.629**	0.310**	(0.548)					
4	Team selling performance	0.109*	0.121*	0.109*	(0.622)				
5	Transactive memory system	0.167**	0.121**	0.185**	0.119*	(0.686)			
6	Age	0.144**	−0.012	−0.075	0.124*	0.056			
7	Experience	0.099	−0.116	−0.025	0.182**	0.020	0.120*		
8	Education	−0.108	−0.600	−0.088	0.080	0.094	−0.045	−0.051	

N = 365; OCB, organizational citizenship behavior.

*Correlation is significant at the 0.05 level, $p < 0.05$.

**Correlation is significant at the 0.01 level, $p < 0.01$.

Common Method Variance

To evaluate the common method variance (CMV) firstly, we conducted Harman's one-factor test (Podsakoff et al., 2003). Harman's one-factor experiment allows all measurements to be loaded into exploratory factor analysis, assuming that a single factor is accountable for most covariance. By using SPSS 22, we performed a factor analysis of all indicators used in the model. The outcomes disclosed that the total explained variance of a common factor is 31.56%, indicating that common method bias in our research is not the main trouble. Furthermore, we adopted a method suggested by Kock (2015) in SmartPLS 3 to assess the CMV. According to this method, if the variance of VIF is larger than 3.3, then it is the signal that the framework is treated with CMV. The study shows the factor level VIF value lower than the recommended threshold 3.3, considering the model is excluded from CMV.

Aggregating Data Into Team-Level Measures

To aggregate our response results to the team level, we evaluated inside and between-group variance and rater reliability components. The appropriateness of group-level aggregation of member scores was inspected by intra-class correlation [i.e., ICC(1) and ICC(2)] and inter-rater agreement index (Stewart et al., 2005). The ICC(1) measures the proportion of variation due to group participation. In contrast, the ICC(2) demonstrates the reliability of a group's means (Hox, 2002). The inter-rater agreement and average ICCs for authentic sales leadership were $r_{wg(j)} = 0.94$; ICC(1) = 0.41; and ICC(2) = 0.87. For TMS we found a mean $r_{wg(j)} = 0.88$; ICC(1) = 0.46; and ICC(2) = 0.77. Consequently, the average values of team selling performance were $r_{wg(j)} = 0.90$; ICC(1) = 0.38; and ICC(2) = 0.74. Prior studies have suggested that a value of 0.70 or above is observed as satisfactory in terms of ICC(2) and within-group inter-rater agreement (Biemann et al., 2012), which demonstrates the data suitability for the study at a team level.

Coefficient of Determination (R^2)

In Figure 2, our results show that the predictor variables explain 68.7% ($R^2 = 0.687$) of team selling performance variance. In addition, authentic sales leadership explains 3.1% of TMS

($R^2 = 0.031$), 26.4% of innovative work behavior ($R^2 = 0.264$), 13% of customer-directed OCB ($R^2 = 0.130$).

Effect Size (f^2)

We carried out multiple PLS estimation, each time eliminating a dominant variable in our conceptual model just to classify the influence of exogenous variable on endogenous variable. It is suggested by Cohen (1988), f^2 values of 0.02, 0.15, and 0.35 are considered small, medium, and large, respectively. Table 3 shows that authentic sales leadership has large effects on innovative work behavior ($f^2 = 0.359$), while it has small effects on both TMS ($f^2 = 0.032$) and customer-directed OCB ($f^2 = 0.149$). In addition, TMS has medium effects on innovative work behavior ($f^2 = 0.226$) and team selling performance ($f^2 = 0.215$). Similarly, customer-directed OCB has also medium effects on both innovative work behavior ($f^2 = 0.282$) and on team selling performance ($f^2 = 0.192$).

Predictive Relevance (Q^2)

To evaluate the predictive relevance of our framework, we performed a Stone and Geisser test by using the blindfolding method on SmartPLS. It is proposed by Hair et al. (2016), that a model contains predictive relevance if the Q^2 value of all dependent variables in the path model is exceeded zero (>0). In this study, the Q^2 values in Table 4 are all above zero, so all dependent variables in the path model have predictive relevance.

Significance of Path Coefficient

Table 5 shows the results of path relationships in the proposed model. Results demonstrate that authentic sales leadership positively relates to the TMS ($\beta = 0.176$, $p = 0.001$). Hence, H1 supporting the research. Furthermore, the results of the hypotheses suggest that authentic sales leadership has a statistically significant and positive effect on innovative work behavior ($\beta = 0.514$, $p = 0.000$), supporting H2. Similarly, authentic sales leadership is positively and significantly related to customer-directed OCB ($\beta = 0.361$, $p = 0.000$). Thus, H3 is supported. For H4a and H4b, results show that TMS is significantly and positively associated with innovative work behavior ($\beta = 0.481$, $p = 0.026$) and team selling performance ($\beta = 0.253$, $p = 0.002$). Moreover, for H5a and H5b, the results

TABLE 2 | Factor loadings of items.

Variables	Constructs/items	Standard	Alpha	CR	AVE
		Loading	α		
<i>Authentic leadership (aggregated from individual level)</i>					
(Balanced processing)			0.91	0.92	0.58
When someone criticizes my manager, he tries not to pay too much importance to it.		0.803			
My manager would rather not have individual weaknesses to be revealed.		0.784			
My manager tries to block out annoying feelings about himself.		0.774			
<i>(Internalized moral perspective)</i>					
My manager stays true to his personal values.		0.636			
Individuals can rely on my manager to behave in the same way over situations.		0.619			
My manager acts according to personal values, even if others find fault with him for it.		0.546			
<i>(Relational transparency)</i>					
My manager often pretends to like something when he does not.		0.721			
Even when my manager disagrees with somebody, he will often quietly reach an agreement.		0.879			
My manager often behaves in a way that does not replicate his true feelings or thoughts.		0.784			
My manager often pretends to be someone he is not.		0.741			
<i>(Self-Awareness)</i>					
My manager is aware of why he does the things he does.		0.692			
My manager is aware of what demotivates him.		0.711			
My manager is aware of what he truly finds important.		0.732			
<i>Transactive Memory System (aggregated from individual level)</i>					
(Coordination)			0.88	0.89	0.53
Our team worked jointly in a well-coordinated style.		0.892			
Our team had very rare confusion about what to do.		0.762			
We accomplished the task effortlessly and professionally.		0.780			
<i>(Credibility)</i>					
I was comfortable accepting practical recommendations from other fellow workers		0.703			
I trusted that other members' expertise about the task was reliable.		0.767			
I was self-assured in trusting the information that other team members brought to the discussion.		0.645			
<i>(Specialization)</i>					
Each team member has specific knowledge of some aspect of our project.		0.773			
Different fellow workers are accountable for expertise in different sectors.					
The specified knowledge of different team members was required to complete the project achievable.					
<i>Innovative Work Behavior (captured from individual level)</i>					
I create innovative solutions for problems		0.194	0.76	0.69	0.51
I invent new methods to perform tasks		0.812			
I make significant organizational members passionate for innovative ideas		0.701			
<i>Customer-directed OCB (captured from individual level)</i>					
I work more than my duty when serving customers.		0.578	0.72	0.81	0.52
I make my customer satisfied by going out of the way		0.806			
As on customer demand, I support them even if it is going more than my job requirements.		0.723			
I always help customers with problems.		0.771			
<i>Team Selling Performance (captured from managers)</i>					
My sales team goes above the sales targets.		0.438	0.81	0.86	0.55
My sales team generates a high level of sales.		0.620			
My sales team sells a full range of products.		0.746			
The sales of my team are compared to the top-performing sales group in the company.		0.346			

N = 365; CR, composite reliability; AVE, average variance extracted; OCB, organizational citizenship behavior; Items are measured on five-point Likert scale, where 1 = strongly disagree and 5 = strongly agree.

of the hypothesis suggest that customer-directed OCB is significantly and positively associated with innovative work behavior ($\beta = 0.280$, $p = 0.000$) and team selling performance ($\beta = 0.347$, $p = 0.000$), supporting H5a and H5b. In last, the positive outcomes could be seen among the linkage between innovative work behavior and team selling performance ($\beta = 0.323$, $p = 0.010$). Hence, H6 supported the study.

Findings of Moderation and Mediation

To test H7 regarding the moderating role of customer-directed OCB, we executed the moderation regression analysis to examine the interaction effect of customer-directed OCB between authentic leadership behavior and team selling performance relationship. The interaction term was added in the model to see its impact on the relationship. As we hypothesized, the findings exhibit

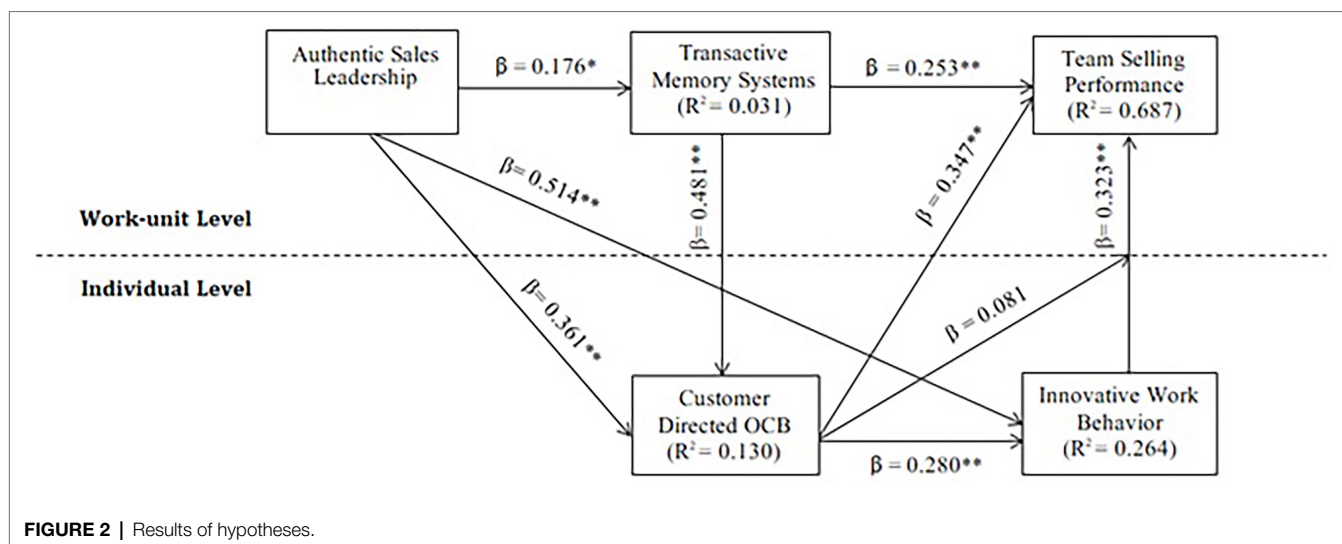


FIGURE 2 | Results of hypotheses.

TABLE 3 | Effect size (f^2) statistics for the general model.

Hypotheses	f^2	Effect
H1 Authentic leadership \rightarrow Transactive memory system	0.032	Small
H2 Authentic leadership \rightarrow Innovative work behavior	0.359	Large
H3 Authentic leadership \rightarrow Customer directed OCB	0.149	Small
H4a Transactive memory system \rightarrow Innovative work behavior	0.226	Medium
H4b Transactive memory system \rightarrow Team selling performance	0.215	Medium
H5a Customer directed OCB \rightarrow Innovative work behavior	0.282	Medium
H5b Customer directed OCB \rightarrow Team selling performance	0.192	Medium
H6 Innovative work behavior \rightarrow Team selling performance	0.175	Medium

$N = 365$; OCB, organizational citizenship behavior.

a positive and significant moderating effect of customer-directed organizational citizenship behavior ($\beta = 0.081$, $p = 0.012$). It means the effect of innovative work behavior on team selling performance will be stronger when salespeople show their extra-role behaviors toward customers.

We also measured the implication of mediating variables in the model. Table 5 and Figure 3 show that innovative work behavior ($\beta = 0.166$, $p = 0.009$) and customer-directed citizenship behavior ($\beta = 0.125$, $p = 0.000$) significantly mediate the relationship between authentic sales leadership and team selling performance. Thus, H8b and H8c fully supported the study. However, the TMS is not significantly mediate between the relationship of authentic sales leadership and team selling performance.

DISCUSSION

The primary goal of this empirical research was to establish and validate a research model intended to improve the understanding of sales leadership style toward team-related outcomes in sales organizations. To this purpose, we have established a conceptual model and examined the outcomes of sales managers' authentic leadership in the evolution of

TABLE 4 | Blindfolding statistics for predictive relevance (Q^2) for the general model.

Constructs	SSO	SSE	$Q^2 (= 1 - SSE/SSO)$
Customer directed OCB	1,460	1360.614	0.068
Innovative work behavior	1,095	982.278	0.103
Team selling performance	1,460	1160.597	0.205
Transactive memory system	3,285	3240.187	0.014

$N = 365$; SSO, sum of the square of observation; SSE, sum of the square of prediction error; and OCB, organizational citizenship behavior.

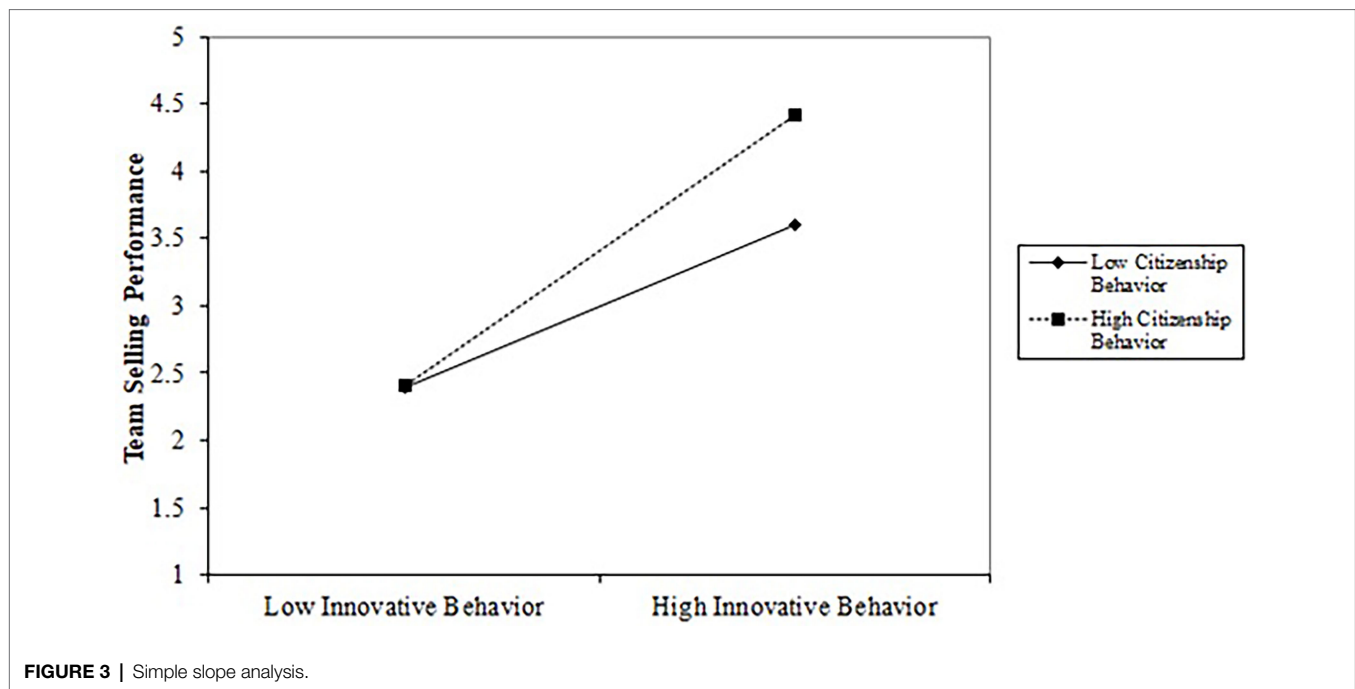
TMSs among salespeople in the B2B context. We also investigated innovative work behavior and customer-directed OCB as mediation channels between authentic leadership and team selling performance relationships.

With an emphasis on the COR theory, our examination facilitates a preliminary overview of the theoretical gap by connecting authentic leadership style to the sales employees' customer-directed OCB. Sales leaders can operate as the origin of resources (Braun and Nieberle, 2017), which can be used by salespeople to develop a positive resource strategy to obtain additional resources, experience spirals of resource acquisition, and invest their resources in behaviors above the job requirements (Halbesleben et al., 2014), such as customer-directed OCB and employee innovation. The research reveals that sales managers' authentic leadership encourages the subordinates' to engage in discretionary behaviors and boost confidence to serve customers above and beyond their minimum expectations. The study shows a positive nexus among sales managers' authentic leadership and customer-directed OCB in the B2B sales context, and the findings are parallel with the study of MacKenzie et al. (1993) and Luu (2020). These findings have claimed that authentic leaders will impact salespeople to satisfy their customers in terms of extra-role behavior. The supplementary findings further investigated the mediation mechanism of innovative work behavior for the association between authentic sales leadership and team selling performance. However, innovative work

TABLE 5 | Hypotheses testing.

Hypotheses		β	<i>p</i> -value	<i>t</i> -value	CIs		Sig. <0.05
					2.50%	97.50%	
H1	AL → TMS	0.176	0.001	3.212	0.075	0.307	Supported
H2	AL → IWB	0.514	0.000	7.427	0.351	0.628	Supported
H3	AL → CDOCB	0.361	0.000	6.379	0.250	0.469	Supported
H4a	TMS → IWB	0.481	0.026	4.574	0.040	0.249	Supported
H4b	TMS → TSP	0.253	0.002	2.179	0.016	0.487	Supported
H5a	CDOCB → IWB	0.280	0.000	0.116	0.088	0.348	Supported
H5b	CDOCB → TSP	0.347	0.000	5.577	0.120	0.395	Supported
H6	IWB → TSP	0.323	0.010	1.850	0.082	0.716	Supported
H7	CDOCB × IWB → TSP	0.081	0.012	0.102	0.014	0.120	Supported
H8a	AL → TMS → TSP	0.045	0.157	1.419	−0.111	0.012	Not Supported
H8b	A → IWB → TSP	0.166	0.009	2.267	0.038	0.265	Supported
H8c	AL → CDOCB → TSP	0.125*	0.000	4.457	0.046	0.156	Supported

N = 365; CI, confidence interval; AL, authentic leadership; TMS, transactive memory system; IWB, innovative work behavior; CDOCB, customer-directed extra role behavior; and TSP, team selling performance.

**FIGURE 3 |** Simple slope analysis.

behavior is often considered impulsive and beyond the obligation of the salesperson. Therefore, sales managers must also have an appropriate atmosphere for trust, belief, and interest in these innovative functions (Anderson et al., 2004). This mediation mechanism is not only aligned with a resource-based view of authentic leadership (Braun and Nieberle, 2017) but still in line with the recent study focused on mediation process (i.e., behaviors that creates better performance) adaptive selling behavior (Wong et al., 2015) and counterproductive behavior. The implications of this research give a clearer overview, including its outcomes of how sales managers' authentic leadership, directly and indirectly, influences internal & external behaviors of sales employees and the overall team performance.

Research Implication

This research adds to the sales literature in multiple courses of action. By following the principle of COR as a theoretical foundation, we have introduced and analyzed a conceptual model that highlights authentic leadership style as a resource for salespeople in retrieving and sharing useful knowledge among teams. Previous literature has focused on the concept of a TMS in different leadership domains such as shared leadership (Ong et al., 2020) and knowledge leadership (Zhang and Guo, 2019). However, this study shows that authentic leadership style is a vital situational predictor of a TMS in the B2B sales context, which has been largely neglected by the previous scholars. To build trust, authentic leaders should encourage their subordinates to believe in the workplace environment and be able to retrieve and exchange

useful knowledge with other colleagues (Peterson et al., 2012). Leadership literature focuses on the role of leaders in team achievement (Morgeson et al., 2010). In order to strengthen the focus on teams to address the obstacles for improving employees' knowledge requirement, the managers need insights into which various types of leadership styles are more useful when using TMS to enhance team performance (i.e., authentic leadership). Besides, our results propose that managers engaged in authentic sales leadership leads to a greater level of TMS and these findings are consistent with the study of Bachrach and Mullins (2019), who found a positive association between leadership behavior and TMS. This might have been an efficient platform for the development practices that enhances knowledge efforts and team overall performance.

Managerial Implication

This study has many implications for sales corporations and leaders. Managers should utilize their expertise to address successful TMS generation by implementing team behavioral traits that have the potential to affect the performance of different leadership styles. An authentic sales leadership seems to be a more productive strategy for producing TMS when sales teams are smaller, which would benefit overall team performance. Our study shows logical ways to manage team structures and advise managers who encourage information sharing and teamwork activities among their salespeople in order to enhance each team member's intrinsic knowledge for overall performance. Managers can inspire salespeople to develop and exchange their TMS-specific expertise.

Furthermore, sales managers can train and encourage their employees, during which they can use additional job-related resources (knowledge, skills) to engage in customer-directed OCB effectively. Organizations can set the picture for more successful use of authentic leadership style in the development of innovative work behavior. Authentic leaders must consider the execution of innovative strategies through a series of conferences, training sessions, social events, and friendly competitions, to fostering the emotional intelligence of salespeople and for the overall organizational innovation capability. Overall, the study found positive association of a supportive relationship between authentic sales leadership and innovative work behavior and has revealed that authentic leadership behaviors in sales managers will promote strategic engagement and creative performance.

Limitations and Future Research

In light of our research observations, several new opportunities for future studies are recognized. The present research investigates the consequence of authentic sales leadership on the salesperson's

behavioral antecedents. In the future, researchers could enlarge the model by adding a salesforce control system (i.e., behavior-based control and outcome-based control) as an exogenous variable in replacement for authentic sales leadership. Furthermore, many other researchers conclusively indicated three sub-dimensions of TMS (Liang et al., 1995). Consequently, our research addressed TMS as a one-dimensional paradigm, which is also the limitation of this study. Future research should investigate how authentic sales leadership influences different dimensions of TMS (specialization, coordination, and credibility).

We performed this study by conducting a survey at a single time frame, and then we matched survey responses with selling performance data provided by the sales managers. So, it would be interesting to take longitudinal data allowing the researcher to assess changes over time. In **Figure 2**, the explained variance for team selling performance is ($R^2 = 76.6\%$), which is above 10% of the threshold recommended by Falk and Miller (1992). This indicates that any other endogenous variables should be introduced to improve the predictive strength of team selling performance such as personal selling strategies (e.g., adaptive selling, up-selling or cross-selling) are treated as predominant indicators in team selling performance when employing sales leadership behaviors (Johnson and Friend, 2015; Singh et al., 2017). The study involves control variables based on the salesperson's demographics, and the future research may employ other control variables in the pharmaceutical context, i.e., (1) typology of the firms according to the business model and strategy formulation (2) typology of products, customers, and channels. There is another limitation involve in this study, the choice of a single geographical background as a target population. So in the future, data should be obtained from various metropolitan areas for the consistency of results and its generalization.

DATA AVAILABILITY STATEMENT

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

AUTHOR CONTRIBUTIONS

MS wrote the major part of the manuscript and contributed to data collection and data analysis. The introduction, literature review, and methodology sections are written and revised by TI and KB. In addition, MA greatly improved the data analysis and interpretation of the study. The final draft has been proofread and approved by BA. All authors contributed to the article and approved the submitted version.

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Responsible Leadership and Affective Organizational Commitment: The Mediating Effect of Corporate Social Responsibility

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Organizations and their leaders are challenged to assume a responsible behavior given the increase of corporate scandals and the deterioration of employee commitment. However, relatively few studies have investigated the impact of responsible leadership (RL) on employee commitment and the effect of corporate social responsibility (CSR) in this relationship. Using the social identity theory this article examined the mediating effect of CSR practices in the relationship between RL and affective organizational commitment (AOC). Data collection was done through a paper survey completed by 309 full-time Colombian employees. Structural equation modeling was used to analyze the data. The results showed that CSR fully mediated the influence of RL on AOC. Thus, RL is an effective mechanism to develop CSR practices that in turn increase the levels of AOC of employees.

Keywords: corporate social responsibility, affective organizational commitment, responsible leadership, social identity theory, stakeholders

INTRODUCTION

Corporate scandals and managerial misconduct have increased the need to reflect on the ethics and morality of corporate leaders (Voegtlin et al., 2012). Thus, there is a need to explain how those making the decisions in organizations impact corporate social responsibility (CSR) practices (Voegtlin, 2016). Because society has been losing trust in companies due to high levels of corruption, damage to stakeholders and the deterioration of natural resources it is said that we need a new conceptualization of the responsibilities of leaders (Patzner et al., 2018). Moreover, irresponsible leadership has been found to deteriorate the organizational commitment of employees (Boddy et al., 2010). These conditions suggest that society and employees demand a more responsible behavior on the part of companies and their leaders. To contribute to these issues, this research suggests that companies should promote a responsible leadership (RL) style in their managers as this favors the deployment of CSR practices that in turn increase the level of affective organizational commitment (AOC) of their employees.

On the other hand, the increase in environmental problems and the growing demands of stakeholders toward companies call for the redefinition of the responsibilities of their leaders (Maak and Pless, 2006). In the same way, it has been pointed out that companies must assume their social

Abbreviations: CSR, corporate social responsibility; RL, responsible leadership; AOC, affective organizational commitment; SIT, social identity theory; SEM, structural equation modeling.

and environmental responsibilities (Scherer and Palazzo, 2011; Aguinis and Glavas, 2012). For these reasons, the need to develop responsible leaders has been indicated (Maak and Pless, 2009; Voegtlin, 2016).

Despite businesses efforts to find effective ways to incorporate CSR into their activities, research on the internal determinants of CSR, such as RL style, is limited (Aguinis and Glavas, 2012). Relatively few studies have investigated the relationship of RL with the psychological states of employees (Miska and Mendenhall, 2018). In particular, the association between RL and AOC, as well as the mechanisms that could explain this relationship, need further investigation (Haque and Caputi, 2017; Mousa, 2017). In this sense it has been argued that RL has a positive impact on AOC because employees will try to imitate responsible leaders' behaviors as they give a sense of purpose and direction (Voegtlin et al., 2020). It has also been argued that leadership and CSR are personal and organizational factors considered key determinants of AOC (Meyer and Allen, 1991; Avolio et al., 2004; Rodrigo et al., 2019). To date no empirical studies have identified the effect of CSR in the relationship between RL and AOC. For these reasons, the objective of this study is to determine the effect of CSR practices in the relationship between RL and AOC in a group of Colombian employees.

LITERATURE ANALYSIS AND HYPOTHESIS DEVELOPMENT

Literature Review

Responsible Leadership

The first approximation to the concept of (RL) was proposed by Lynham (1998) who explained that this style of leadership is oriented to achieve much more than economic results. It implies the adoption of a systemic thinking oriented to effectiveness, ethical behavior, and sustainability over time. Later, Doh and Stumpf (2005), explaining the need to connect leadership with CSR, defined it as a value-based leadership, characterized by ethical decision-making and quality relationships building with stakeholders.

The most cited definition in the literature is the one by Maak and Pless (2006). They indicate that RL is born from the recognition that companies must respond to various stakeholders. In their definition it is explained that RL is an ethical relational phenomenon with various interest groups, where the leader seeks to achieve a greater social good. The responsible leader not only influences his subordinates (employees) but builds long term relationships of trust and influence with various stakeholders (employees, clients, shareholders, suppliers, the government, and the community in general). Thus, they define the RL as: "the art of building and sustaining positive relationships with all relevant stakeholders, with the aim of coordinating actions and achieving common, sustainable and legitimate objectives" (p. 40).

Responsible leadership builds relationships through a process of social deliberation, involvement, and mobilization with

stakeholders (Voegtlin et al., 2012) that improves the quality and legitimacy of decisions. In the context of a stakeholder society the purpose of RL is to contribute to sustainable development and the triple bottom line (Maak and Pless, 2006). Therefore, it has been indicated that the greatest challenge of RL is to get the organization to recognize and incorporate its social responsibility (SR) (Pless, 2007). Thus, the leader is responsible to various stakeholders, building relationships based on inclusion and facilitating dialogue between them to achieve a shared vision aimed at sustainable development. The involvement that this leadership style promotes with stakeholders generates the necessary knowledge to promote the innovations that allow the organization to survive and evolve (Doh and Quigley, 2014). Thus, Antunes and Franco (2016) explain that RL is a concept that emerges from the intersection that occurs between the studies of ethics, leadership, and CSR.

Conceptual discussions (see Waldman and Galvin, 2008; Waldman and Siegel, 2008) and discussions of empirical evidence (see Pless et al., 2012; Witt and Stahl, 2016), show that RL styles have different orientations. To enhance understanding and synthesize the RL phenomenon, Maak et al. (2016), explain two styles of RL from the theory of the upper echelons (Hambrick, 2007): instrumental and integrative. These two styles of leadership depend on the moral obligations that leaders perceive toward shareholders or stakeholders. The instrumental responsible leader perceives as a moral obligation the fiduciary duty assumed with the owners of the company. This instrumental approach conceives the role as the guardianship of the interests of the company's owners. This role emerges as part of a psychological contract with the shareholders in which the leader considers them his employers. On the other hand, the integrative responsible leader, assumes that his moral obligation is with a broad set of stakeholders, and perceives a social contract between the company and society as valid, therefore, considers creating value for all stakeholders a responsibility. This does not mean that the integrative responsible leader does not care about economic performance; it is seen as the result of a successful and purposeful company. In this study we use the integrative approach of RL.

Corporate Social Responsibility

Corporate social responsibility has been addressed since the 1950s. It has been gaining relevance as organizations are pressured to contribute to the solution of environmental and social problems. According to Carroll (1999), the father of CSR is Bowen (1953). In his book published in 1953, "The Social Responsibilities of the Businessman," he concluded that CSR implies the adoption of policies, decisions and actions that are desirable in terms of the objectives and values of society.

The interest in adopting CSR practices led the International Organization for Standardization (ISO) to develop the guide for incorporating SR practices (ISO 26000: Guidance on Social Responsibility) in organizations (ISO, 2010). In it, SR is defined as "the responsibility of an organization for the impacts that its decisions and activities cause on society and the environment, through an ethical and transparent behavior that contributes to sustainable development including the health and well-being of society ..." (p. 4). This study adopted the definition of

CSR proposed by Aguinis (2011), “Policies and actions in the organizational context that takes into account the expectations of stakeholders and performance based on the triple bottom line: economic, social and, environmental” (p. 855).

Affective Organizational Commitment

The study of the antecedents and consequences of employee commitment to the organization has been a topic of great interest and has been considered a connection or link between the individual and the organization (Mathieu and Zajac, 1990). AOC has particularly been investigated, as it relates to the emotional bond of employees with the organization. For example, work experiences and perceived organizational support have been found to positively influence AOC, which in turn positively impacts staff turnover rates (Rhoades et al., 2001). The meta-analysis by Meyer et al. (2002) concluded that of the three forms of commitment, AOC has had the strongest and most favorable correlations with behaviors such as performance, attendance, and organizational citizenship behaviors. Subsequent studies have found a relationship between organizational commitment and various measures of financial performance (Abdul Rashid et al., 2003).

Afterward, Mercurio (2015) concluded that the AOC is the historical and theoretical basis of the other types of commitment, and after carrying out a meta-analysis found that AOC positively affects the indicators of turnover, absenteeism, organizational citizenship behaviors, and stress. His findings lead him to conclude that AOC is the essence of organizational commitment. This is how AOC begins to be identified as one of the determinants of job performance (Sharma and Dhar, 2016; Wang et al., 2020) and as a mediator of the positive effect of human talent practices on the performance of business units (Raineri, 2017). More recently, it has been recognized as a mediator of the positive influence of supervisor feedback on innovative work behavior (Bak, 2020), and as a mediator of the positive effect of authentic leadership on individual creativity (Ribeiro et al., 2020).

Hypotheses Development

Responsible Leadership and Affective Organizational Commitment

Different leadership styles have been related to employee commitment, this includes between others transformational leadership (Avolio et al., 2004; Keskes et al., 2018; Jiatong et al., 2022), servant leadership (Lapointe and Vandenberghe, 2018), spiritual leadership (Sapta et al., 2021), and authentic leadership (Ausar et al., 2016). This can be explained because several leadership behaviors like decentralization in decision-making, perceived organizational support, perception of importance for the organization (Meyer and Allen, 1991), and perceived organizational support (Rhoades et al., 2001; Meyer et al., 2002) have been identified as determinants of AOC. The RL carries out processes of employee involvement in decision-making, promoting participatory practices that allow the employee to feel important and committed (Voegtlin et al., 2012), also assumes management practices of organizational support to employees and human talent management (Doh et al., 2011), thus can

be associated with the AOC by promoting participation and decentralization and increasing the perception of importance of employees for the organization.

In this research this relationship is explained through the social identity theory (SIT), that suggests that individuals tend to classify themselves in social categories that enable to define him or herself in the social environment, in this case the employees identify themselves with the RL role that serves as a referent (Ashforth and Mael, 1989). Particularly employees compare themselves with the dimensions of positive social value (Abrams and Hogg, 1990) that the RL demonstrate by having an ethical behavior and pursuing social and environmental goals.

On the other hand, RL behaviors are negatively related to intention to leave and staff turnover, and this relation is mediated by pride (Doh et al., 2011). RL has also been identified as a strong predictor of significant work in four dimensions: unity with others, expressing full potential, inspiration, and tension equilibrium (Lips-Wiersma et al., 2018). The effect of RL on organizational commitment have been found to be mediated by turnover intention (Haque and Caputi, 2017) and a climate of diversity and inclusion (Mousa, 2017). In this sense, a responsible employee will be linked to a responsible leader and the attributes of the group, which generates a feeling of identity and desire to remain in the company. For these reasons it is proposed that there may be a relationship between RL, and the AOC of employees as is stated in Hypothesis 1.

Hypothesis 1: Responsible leadership positively influences the affective organizational commitment of employees.

Responsible Leadership and Corporate Social Responsibility Practices

The relationships between value-based leadership styles such as transformational (Waldman et al., 2006), authentic (Iqbal et al., 2018; Kim et al., 2018b; Chaudhary, 2020), ethical (Nejati et al., 2020; Saha et al., 2020), and CSR practices have been studied. The findings indicate that, as these leadership approaches are based on strong ethical values, they can motivate employees by presenting CSR goals that align with their self-concept. Following SIT explanations of group membership, followers may identify with values that go beyond self-interest, like stakeholder needs and the needs of society (Waldman et al., 2006), and thus behave to achieve such goals.

According to the researchers of the RL field of study, there are several mechanisms that explain the RL-CSR relation, it has been explained that one of the central purposes of the RL is to ensure that companies incorporate CSR practices (Pless, 2007), and that the experience, values, and personality of the leader, shape their reasoning about the responsibility of the organization (Maak et al., 2016). Voegtlin et al. (2012) maintain that, RL promotes CSR practices through the construction of relationships with stakeholders, the promotion of an ethical culture based on deliberation practices and the process of raising awareness about the importance of CSR. Incorporating the concerns of stakeholders in decision-making allows the employees to understand the business purpose within the framework of CSR. Similarly, Stahl and Sully de Luque (2014) explain that the

RL deploys actions to benefit and to avoid negative impacts on stakeholders. These behaviors of RL contribute to the development of CSR activities, the sense of identification and engagement of employees in responsible behavior with all stakeholders (Haque and Caputi, 2017).

On the relationship between leadership styles associated with RL and CSR, Godos-Díez et al. (2011) analyzed how the leader's profile is related to the development of CSR practices, as well as the mediation of the perception of the role of ethics and SR; defining two leadership profiles: agency (characterized by selfishness and opportunistic behavior) and servant (characterized by cooperative behavior, which seeks to defend the well-being of various stakeholders) found that those managers with a servant profile were inclined to give more importance to the role and implementation of CSR. Some years later Castro González et al. (2017) identified a positive and significant relationship between RL and perceived CSR. Therefore, Hypothesis 2 is proposed.

Hypothesis 2: Responsible leadership positively influences corporate social responsibility practices.

Corporate Social Responsibility and Affective Organizational Commitment

Aguinis and Glavas (2017) recently studied how individuals proactively find meaning in their work, and how this is related to the way they experience CSR practices. In this sense, the relationship between CSR and AOC practices has been a topic of particular interest during the last decade, and several studies have indicated a positive effect of CSR on the organizational commitment of employees in various geographical locations such as North America (Peterson, 2004; Glavas and Kelley, 2014; Vlachos et al., 2014), Pakistan (Ali et al., 2010; Asrar-ul-Haq et al., 2017), Europe (Ditlev-Simonsen, 2015; Mory et al., 2016a,b), Africa (Mensah et al., 2017; Bouraoui et al., 2018), India (Gupta, 2017), and South Korea (Kim et al., 2018a). As part of the GLOBE project, Mueller et al. (2012), analyzing information collected in 17 countries and with 1084 employees, found a positive relationship between perceived CSR and AOC; their analyzes show that this relationship is strengthened in cultures where there is greater institutional collectivism, human orientation and that it weakens when there are high levels of power distance.

Another stream of research that emphasizes the multidimensionality of CSR has identified the relationship between CSR components and AOC. Internal and external CSR have showed positive effects on organizational commitment (Brammer et al., 2007) as well as CSR to social and non-social stakeholders, to employees and customers (Turker, 2009a). Additionally, AOC has been found to be influenced by CSR related to education and training, human rights, health, safety at work, work life balance and diversity at work (Al-bdour et al., 2010), by CSR with the community, consumers, and employees (Farooq et al., 2014), by CSR with employees, customers, and the government (Hofman and Newman, 2014) and CSR oriented to health, safety, education, and training (Thang and Fassin, 2017).

The relationship between CSR and AOC practices, is explained using the SIT that suggests that employees associate aspects of

their self-concept with behaviors and attitudes of certain social groups (Turner and Oakes, 1986). In this case the employees with values oriented toward SR will feel more emotionally committed to organizations that carry out CSR practices, generating a bonding process. Therefore, Hypothesis 3 is proposed.

Hypothesis 3: Corporate social responsibility practices positively influences the affective organizational commitment of employees.

Corporate Social Responsibility as a Mediator of the Relationship Between Responsible Leadership and Affective Organizational Commitment

In this research, it is proposed that a variation in the RL can cause a variation in the perceived CSR, which in turn could generate a higher level of AOC. This conjecture is argued as follows: the RL creates value for a range of stakeholders in business and in society (Pless et al., 2012), leads the company with an emphasis on the triple bottom line and justifies their decisions under a logic of what is appropriate (Maak et al., 2016). The RL influences the CSR character of the organization, making employees aware of the possible social and environmental consequences of corporate actions, by emphasizing and demonstrating with their actions the importance of involvement with different stakeholders (Voegtlin et al., 2012). These behaviors lead to higher levels of AOC in the employees as their social identity is enhanced when the organization to which the employee belongs is distinctive and more positive than other organizations (Allen et al., 2017).

Thus, RL orients decisions and behavior toward responsibility and coordinates actions to achieve a shared vision of CSR (Maak, 2007). Evidence of this relationship is found in the research carried out by Castro González et al. (2017) that signaled a positive and significant relationship between RL and perceived CSR. In turn, the adoption of CSR practices has been shown to be positively related to organizational commitment (Brammer et al., 2007; Turker, 2009b; Mueller et al., 2012; Hofman and Newman, 2014). The empirical findings of related research explain that, according to the SIT, responsible employees identify themselves with a company that implements CSR practices and has responsible leaders. Therefore, Hypothesis 4 is proposed.

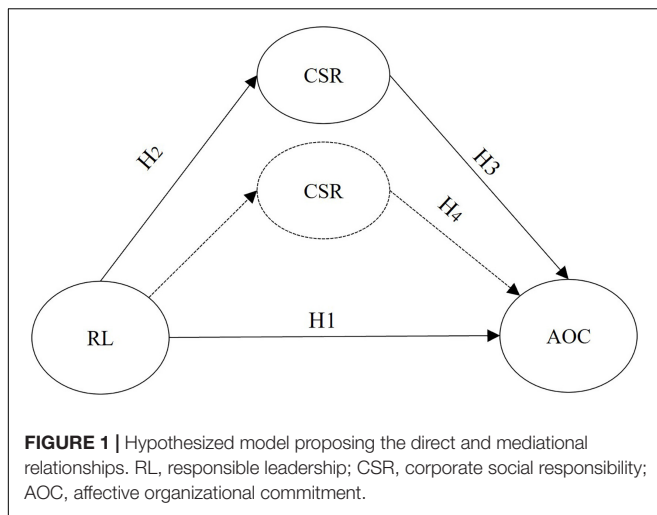
Hypothesis 4: CSR is a mediator of the relationship between responsible leadership (RL) and affective organizational commitment (AOC).

From the previous discussions, a hypothesized model for this study is depicted in **Figure 1**.

MATERIALS AND METHODS

Methodological Approach

This research aimed to determine if the RL style has a direct effect on organizational affective commitment (AOC) or if this relationship is mediated by CSR practices. The cause-and-effect explanation makes it part of the functionalist-positivistic research paradigm described by Burrell and Morgan (1979). This study is descriptive, correlational, and explicative in nature.



From the perceptions of employees recollected in one point of time, the behaviors of RL, the CSR practices, and the level of AOC are estimated.

In this study, RL influences CSR which in turn influences AOC; it has been suggested that to test this type of causal structures the technique of structural equation modeling (SEM) is adequate (Hair et al., 2009). SEM has been signaled as a robust technique due to its ability to control measurement errors, the possibility of handling different dependent variables and testing models with different assumptions of causality (Ramlall, 2017). It has been considered appropriate to verify if the hypothesized theoretical model is adequate for the sample data (Thakkar, 2020).

Data Collection Methods

The subject type sampling method was used in this study. As inclusion criteria, the participants were Colombian employees, working in the same organization with the same leader for at least the last 12 months, and with a full-time contract. The employees belonged to organizations of different economic sectors and sizes, occupied jobs in different hierarchical levels and different professional backgrounds, allowing variability regarding the type of leader and organization evaluated. This diversity minimizes the common method bias (CMB) as it explores different organizational contexts (Podsakoff et al., 2003).

The scales originally developed in English were back translated from Spanish following Brislin (1970) procedure. To minimize CMB, two blank lines were inserted between each scale, a specific instruction was given before the presentation of each set of questions and different number of Likert scale-points were used for each measurement instrument. These procedures allow to psychologically separate the measurement of the independent and dependent variables (Podsakoff et al., 2003). Complementarily, to enhance the motivation to answer the questions, a common and precise language was used, defining less-familiar concepts as could happen with the term: “stakeholders.” Printed questionnaires had spaces between items to eliminate the proximity effect. The data was collected

in different parts of the country and analyzed in the SPSS statistical software. To run the SEM procedures the AMOS package was used. Data recollection was done during the second semester of 2019, and during January and February of 2020; 640 questionnaires were answered, of which 309 complied with the inclusion criteria and were considered valid. Finally, the participants were told that their participation was anonymous voluntary, and that they could retire from the study at any time.

In relation to the demographic profile, 55.3% of the survey respondents were women and 44.7% were men. The age of the respondents ranged from 18 to 40 or above, with a 42.7% for 18–29 years and with 44.7% for 30–39 years. Among all respondents, 73.8% completed technical or professional education and 26.2% postgraduate degrees. Lastly, 50.6% of respondents had worked with the same superior for 12–28 months and 49.5% for more than 28 months. The detailed data is presented in **Table 1**.

Measures

In the case of RL the unidimensional scale developed by Voegtlin (2011), was selected as it has shown appropriate levels of reliability (Voegtlin, 2011; Castro González et al., 2017; Han et al., 2019; Zhao and Zhou, 2019). This scale is comprised of five items with a 5-point Likert scale: 1. Never, 2. Rarely, 3. Every once in a while, 4. Sometimes, 5. Almost always.

To operationalize and measure CSR practices the scale developed by El Akremi et al. (2018) was used. The scale evaluates the CSR perception of employees using 35 items in relation with the following stakeholders: employees, customers, the environment, shareholders, suppliers, and the community. This instrument has a 6-point Likert scale: 1. Strongly disagree, 2. Disagree, 3. Somewhat disagree, 4. Somewhat agree, 5. Agree, 6. Strongly agree.

To measure AOC the scale developed by Mory et al. (2016b) was selected because it is an improved version of the one built by Meyer and Allen (1991). Its unidimensional and has eight items

TABLE 1 | Sociodemographic characteristics of participants.

Feature	Frequency	Percentage
Gender		
Female	171	55.3
Male	138	44.7
Total	309	100.0
Age group (years)		
Between 18 and 29	132	42.7
Between 30 and 39	138	44.7
40 or more	39	12.6
Total	309	100.0
Education level		
Technical and professional	228	73.8
Postgraduated	81	26.2
Total	309	100.0
Time working with the immediate manager (months)		
12 and 28	156	50.5
More than 28	153	49.5
Total	309	100.0

evaluated through a 7-point Likert Scale: 1. Strongly disagree, 2. Disagree, 3. Somewhat disagree, 4. Neither agree nor disagree, 5. Somewhat agree, 6. Agree, 7. Strongly agree.

Methods of Analysis

The variables RL, CSR, and AOC, were analyzed using descriptive and correlational statistics. To test the proposed hypothesis, the two steps procedure suggested by Byrne (2010) for the SEM technique were carried out: assessing the measurement model and developing the structural model. The first step is performed to examine the validity and reliability of each of the measurement instruments and in this study was developed through a confirmatory factor analysis (CFA). The second step is to test the hypothesized structural model to see if it fits with the data from the sample, this was done using the AMOS module of SPSS. To assess data normality, skewness and kurtosis indicators were calculated. As the data showed a multivariate non-normal distribution, the “Bollen-Stine Bootstrap” (Bollen and Stine, 1992) procedure was carried out to determine if the model was acceptable and SEM fit indexes were estimated using the procedure for non-normal data distributions proposed by Walker and Smith (2017). To determine the significance of the indirect effect of RL through CSR on AOC, a Bootstrap with 5000 iterations and a confidence interval of 95% was executed following Byrne (2010) procedure.

This study considered three control variables: organization size as larger organizations have been found to develop more CSR practices than small ones (McWilliams and Siegel, 2001), sex as previous studies have identified women to score higher on AOC than men (Brammer et al., 2007) and geographical scope, as it is expected that multinational organizations are more willing to perform CSR practices than local ones. The Harman’s one-factor test was calculated to assess if the CMB affected the proposed model.

RESULTS

To determine if the RL directly affects the AOC or if this relationship is mediated by CSR, in this section the results are detailed in the following order: first the descriptive and correlation statistics of the principal variables are showed, then the results of the SEM are presented. The results of the effects of the control variables and of the single factor test for the hypothesized model are subsequently described. Finally, the results of the mediation test are presented.

Descriptive Statistics and Correlation Test

To identify associations between variables Pearson’s correlation coefficients were calculated. **Table 2** allows us to identify that in the study the highest correlation between the main variables is between CSR and AOC with a coefficient of (0.54; $p < 0.01$), followed by the coefficient (0.31; $p < 0.01$) between RL and CSR. On the other hand, the weakest coefficient among the three (0.25; $p < 0.1$) is between RL and AOC.

Structural Equation Modeling

As is detailed in **Appendix Table 1**, the (β 2) values indicated that none of the items has significant kurtosis (<7), however, the critical ratio exceeds for various items the critical value z (± 1.96) signaling a multivariate non-normal data distribution (Byrne, 2010). Since the multivariate non-normal distribution can alter the standard error of the coefficients between the latent variables in SEM (Andreassen et al., 2006), and underestimate the Tucker–Lewis index (TLI) and comparative fit index (CFI) fit indices when the maximum likelihood estimation method is used (Byrne, 2010), the procedure known as “Bollen-Stine Bootstrap” (Bollen and Stine, 1992) was carried out to determine if the model can be accepted. Subsequently, the two procedures proposed by Byrne (2010) were carried out; the first step was the evaluation of the measurement model and the second the development of the structural model. During these procedures, the SEM adjusted indices for non-normal data were calculated according to the indications of Walker and Smith (2017). Accordingly, initially the results of the CFA are detailed for the measurement model and afterward the results obtained for the structural equation model (SEM) is presented.

First Step: Measurement Model

In this study, the RL was measured using the scale developed by Voegtlin (2011) with five items to consider the employees’ perception of RL. The perceptions of CSR practices by the employees was measured with 35 items of the instrument developed by El Akremi et al. (2018) with a Cronbach’s alpha for this study of ($\alpha = 0.95$). The instrument is made up of six subscales: CSR with the community ($\alpha = 0.91$), CSR with the environment ($\alpha = 0.90$), CSR with employees ($\alpha = 0.89$), CSR with suppliers ($\alpha = 0.89$), CSR with customers ($\alpha = 0.87$), and CSR with shareholders ($\alpha = 0.91$). The AOC was measured with the one-dimensional 8-item scale developed by Mory et al. (2016b). Since the data indicated a non-normal multivariate distribution, the bootstrap procedure was executed (Bollen and Stine, 1992) and a p -value = 0.025 less than 0.05 was obtained, which indicated that the model was not consistent with the data. When reviewing the factor loadings of each of the first order dimensions in the second order dimension CSR, it was identified that the dimension “CSR with the Community” presented a standardized factor load of 0.21, so following the indications of Hair et al. (2009) was eliminated from the measurement model. With the new measurement model without the “CSR with the Community” dimension, the bootstrap procedure was executed (Bollen and Stine, 1992) and a value of $p = 0.106$ greater than 0.05 was obtained, which indicates that this model was consistent with the data. To calculate the fit indices, the results of $\chi^2 = 10461.674$ and $df = 820$ of the independence model, those of $\chi^2 = 1040.725$ and $df = 708$ of the base model, the sample size $n = 309$ and the value $p = 0.106$ were used to run the procedure established by Walker and Smith (2017). The model fit indicators are presented in **Table 3**.

Indices greater than 0.95 were obtained in the adjusted indices of CFI, TLI, and incremental fit index (IFI), and a value less than 0.08 for the adjusted root mean square error of approximation (RMSEA), which indicates that the measurement

TABLE 2 | Pearson's correlation coefficients.

	RL	CSR	CSR community	CSR environment	CSR employees	CSR suppliers	CSR clients	CSR shareholders	AOC
RL	1								
CSR	0.31**	1							
CSR community	0.03	0.55**	1						
CSR environment	0.29**	0.83**	0.50**	1					
CSR employees	0.34**	0.80**	0.22**	0.62**	1				
CSR suppliers	0.30**	0.80**	0.20**	0.53**	0.63**	1			
CSR clients	0.22**	0.77**	0.14**	0.50**	0.65**	0.69**	1		
CSR shareholders	0.22**	0.71**	0.08	0.43**	0.56**	0.60**	0.64**	1	
AOC	0.25**	0.54**	0.16**	0.39**	0.51**	0.49**	0.44**	0.47**	1

n = 309.

**The correlation is significant at the 0.01 level (bilateral).

TABLE 3 | Goodness of fit indices of the measurement model.

Unadjusted and adjusted Chi-square statistics and scaling factor

Chi-square statistic	Bollen–Stine Adjusted Chi-square equivalent statistic	Bollen–Stine Scaling factor
1040.725	755.317	1.378

Unadjusted and adjusted goodness-of-fit indices

CFI	Adjusted CFI	TLI	Adjusted TLI	IFI	Adjusted IFI
0.965	0.995	0.960	0.994	0.966	0.995

Unadjusted and adjusted residual fit indices

RMSEA	Adjusted RMSEA
0.039	0.015

SEM, structural equation modeling; RMSEA, root mean square error of approximation; CFI, comparative fit index; TLI, Tucker–Lewis index; IFI, incremental fit index.

model adjusted to the data adequately. The results of the CFA are presented in **Figure 2** indicating levels of significance and adequate standardized factor loadings (Hair et al., 2009).

Thus, the CFA results for the measurement model present appropriate fit indicators and factor loadings.

Second Step: Structural Models

In this study, a structural model was developed to test the mediating effect of CSR on the effect between RL and AOC. The standardized regression coefficients (β) are presented in bold in **Figure 3**.

Since the data showed a non-normal distribution, the bootstrap procedure was executed (Bollen and Stine, 1992), obtaining a value $p = 0.066$ greater than 0.05, which indicates that the model is consistent with the data. To calculate the fit indices, the results of $\chi^2 = 10681.241$ and $df = 946$ of the independence model, those of the base model $\chi^2 = 1229.038$ and $df = 830$, the sample size $n = 309$ and the value $p = 0.066$ were used to run the procedure established by Walker and Smith (2017). The model fit indicators are presented in **Table 4**.

Indexes greater than 0.95 were obtained in the adjusted indices of CFI, TLI, and IFI, and an index less than 0.08 for the adjusted RMSEA, which indicates that the CSR mediation model adjusted to the data adequately.

The hypothesis was tested using the estimated parameters of the structural model. As presented in **Table 5**, the direct effect of RL on AOC was not significant ($\beta = 0.06$; $p > 0.005$), rejecting Hypothesis 1, while the indirect effect of RL on AOC, through CSR, was ($\beta = 0.22$; $p < 0.001$) which confirmed Hypothesis 4. The significance of the indirect effect was calculated through the Bootstrap procedure with 5000 samples and a 95% corrected bias confidence interval in the AMOS software. The effect of RL on CSR was positive ($\beta = 0.36$; $p < 0.001$), confirming Hypothesis 2. A positive influence of CSR on AOC is also observed ($\beta = 0.62$; $p < 0.001$), confirming Hypothesis 3.

As control variables for this research, the size, geographical scope of the organization (local or multinational) and the sex of the employees surveyed were considered. As can be seen in **Figure 3**, the size of the organization has a standardized effect on CSR practices of ($\beta = 0.14$; $p < 0.05$); the geographic scope of operation a standardized effect on CSR practices of ($\beta = 0.16$; $p < 0.01$); and finally, the sex of the participants has a standardized effect of ($\beta = 0.16$; ns). To determine the existence of the common method bias, the Harman single factor test was carried out, which assesses the degree to which a latent common factor accounts for all the manifest variables. The test was carried out using an exploratory factor analysis with an unrotated factor solution (Podsakoff et al., 2003). The total

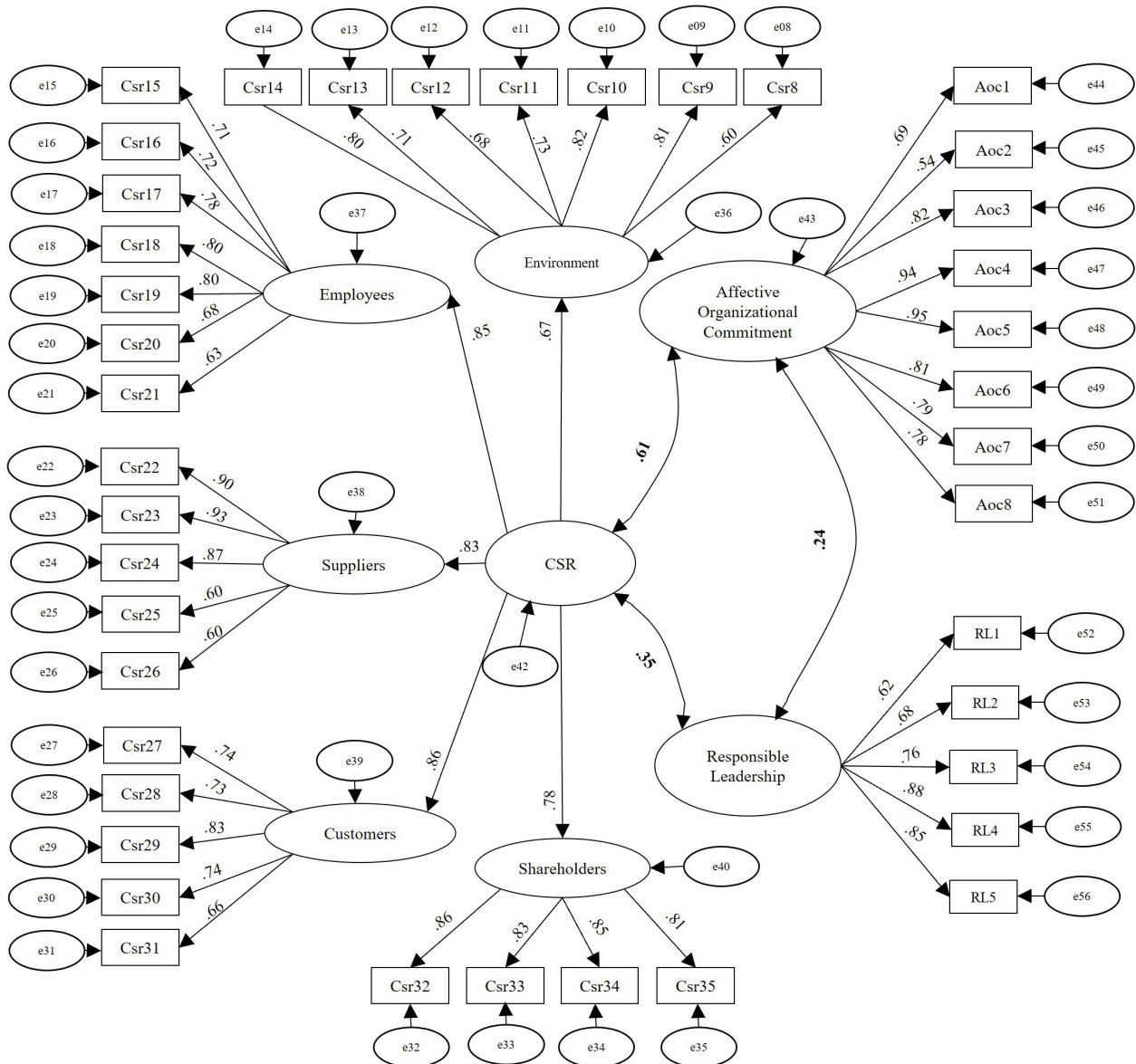


FIGURE 2 | Second-order confirmatory factor analysis of the measurement model. This figure represents the CFA of the measurement model, the values in bold correspond to correlations and the others to standardized factor loadings of the observed and latent variables, they are all significant ($p < 0.001$). $n = 309$.

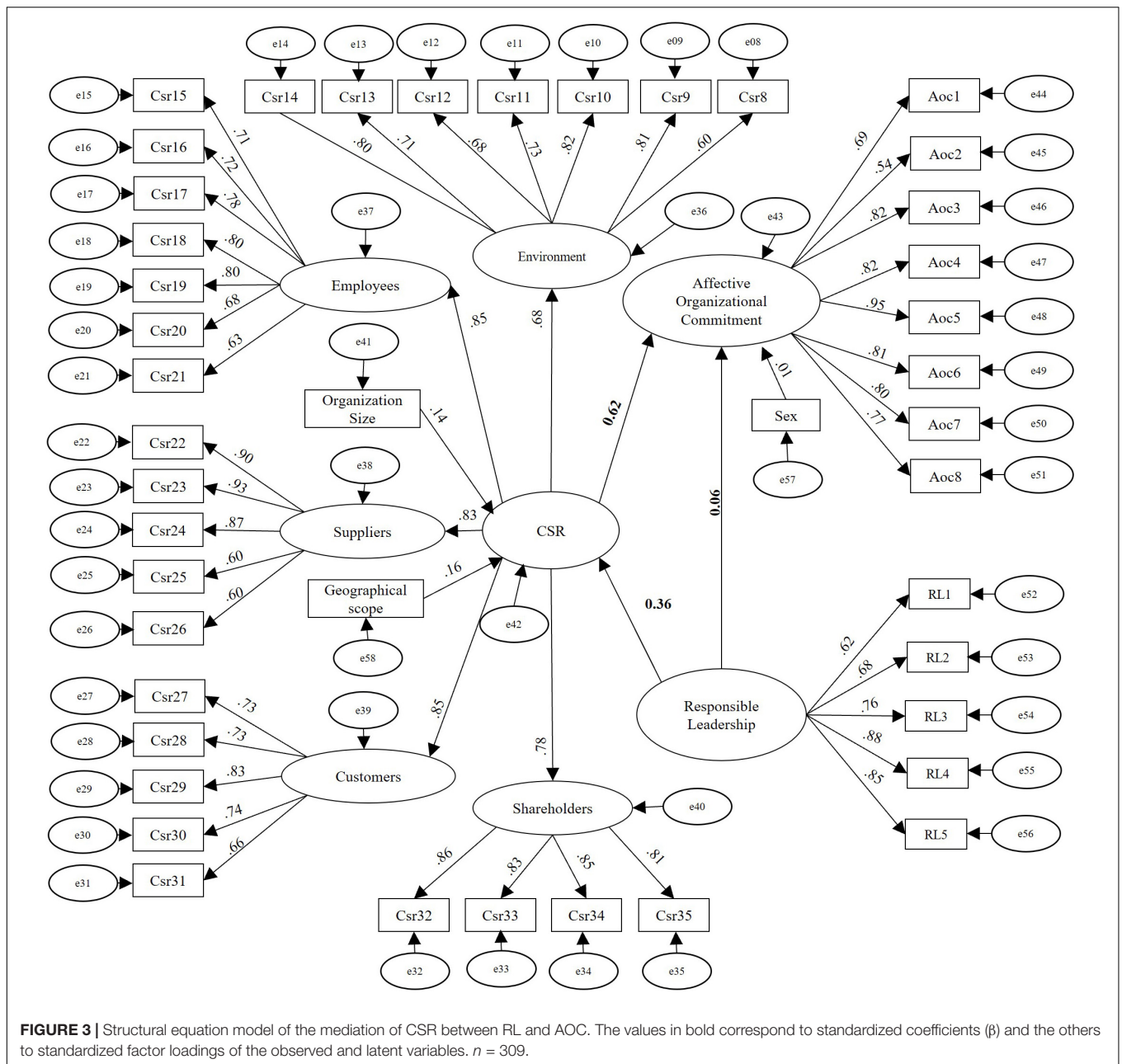
variance explained by a single factor was 36.8%, less than 50%, which indicates that the common method bias was not a risk in this study.

DISCUSSION

The purpose of this study was to determine the effect of CSR practices in the relationship between RL and AOC in a group of Colombian employees, the results showed that RL influences the level of AOC through the development of CSR practices. This demonstrate that RL can be a relevant determinant of value generation for stakeholders and the environment. Also, that it can

be a leadership style that emotionally connects the employee to the organization, through the development of CSR practices.

The claim of contributing to the challenge of sustainability from management science (Ghoshal, 2005) implies the comprehension of the leadership needed to manage environmental and social issues in organizations. Ethical scandals of several managers, environmental movements, and social expectations, have seriously questioned the vision and behavior of business leaders (Muff et al., 2020). For these reasons, this research expands the existing knowledge in the field of RL, describes it as aware of the economic, environmental, and social impact of organizations, and points out the implications of promoting spaces for collective



construction with stakeholders. It is emphasized in this research that the RL not only focuses on the relationship of influence with its employees, but also builds long-term and trusting relationships with multiple stakeholders (Maak and Pless, 2006). This conception allows to understand the role of business leaders as global citizens who seek the common good (Maak and Pless, 2009) and the dimension of responsibility in managerial practice (Voegtlin, 2016). This is how the RL is conceived responsible toward a wide set of interest groups (Maak et al., 2016) being the one that maximizes value for the different interest groups, internalizes the negative impacts, is long-term oriented and is regenerative rather than degenerative (WBCSD, 2020).

This research expands the knowledge on the outcomes of RL. It has been pointed out that the RL deploys CSR practices (Voegtlin et al., 2012) and this study presents empirical evidence of the positive and significant effect of the RL style on the development of CSR practices. This result indicates that those leaders who consider the concerns of stakeholders in their decision-making process and who seek to generate value in the triple bottom line contribute to the deployment of various CSR activities. According to SIT the followers will be proud of their responsible leaders, sharing a social category membership with the organization, and acting accordingly. It provides additional evidence to the positive influence of RL on CSR found by Castro González et al. (2017) in Spain and to the investigations that

TABLE 4 | Goodness of fit indices of the hypothesized model.

	Hypothesized model*
Absolute fit	
χ^2	892.196
Comparative fit	
CFI	0.994
TLI	0.993
IFI	0.994
Others	
RMSEA	0.016

*The values presented in the hypothesized model, correspond to adjusted indices for the non-normal multivariate data following the procedure suggested by Walker and Smith (2017).

account for the relationship between leadership styles and the development of CSR practices (Godos-Díez et al., 2011; Groves and LaRocca, 2011; Du et al., 2013; Saha et al., 2020). It provides complementary evidence of the positive relationship between leadership and organizational commitment in the Colombian context (Bohorquez, 2016; Mañas-Rodríguez et al., 2020).

In this study, the understanding of the effects of CSR is broadened, by confirming hypothesis number three that indicates the positive and significant effect of CSR practices on the AOC level of employees in Colombia. This is justified as SIT suggest that individuals have a desire for positive self-evaluation, in this case being part of an organization that behaves more responsibly than others can enhance their social identity (Abrams and Hogg, 1990). This result is in line with the findings on the positive influence of CSR on AOC in other geographical areas such as North America (Peterson, 2004; Glavas and Kelley, 2014; Vlachos et al., 2014), Pakistan (Ali et al., 2010; Asrar-ul-Haq et al., 2017), Northern Europe (Ditlev-Simonsen, 2015; Mory et al., 2016a,b), Africa (Gupta, 2017; Mensah et al., 2017; Bouraoui et al., 2018), South Korea (Kim et al., 2018a), and in the countries that have been part of the GLOBE project (Mueller et al., 2012). According to the literature review, this increase in AOC levels is due to higher levels of identification and reciprocity of the employee with the organization that is concerned with generating social, environmental, and not only economic value. This finding is in line with the positive and significant relation between internal CSR and AOC found in the Colombian context (Ávila-Tamayo and Bayona, 2022). However, the use of the multidimensional CSR scale, developed by El Akremi et al. (2018) allowed to identify

that the CSR dimension with the community was not relevant in the Colombian context; its slight manifestation may be due to organizations prioritizing other CSR dimensions. This study contributes to the body of knowledge of CSR by identifying RL as an antecedent and AOC as an outcome.

Furthermore, this research contributes to the understanding of the mechanism of influence of RL on AOC. The result of the parameter that evaluates Hypothesis 1 indicates that the direct influence of RL on AOC is almost null and not significant; while the test parameter for Hypothesis 4 indicates that the indirect effect of RL on AOC through CSR practices is positive and significant. The result of Hypothesis 1 indicates that the variations in AOC levels are not directly explained by the adoption of the RL style. According to the result of Hypothesis 4, employees will increase their AOC level when the RL achieves the effective deployment of CSR practices. This finding can be explained using the SIT (Turner and Oakes, 1986), according to which people are attracted to groups whose behaviors are framed by what they consider valuable. In this way, organizations that incorporate or develop managers with RL styles will be able to deploy CSR practices, which will increase the AOC level of employees. This finding is consistent with the results of the research carried out by Castro González et al. (2017) who identified that CSR mediates the influence of RL on the creativity of a group of vendors, those of Mousa (2017) who found that climate diversity and inclusion mediates the relationship of influence between RL on organizational commitment, those of Haque and Caputi (2017) which indicate that employee turnover intention partially mediate the effect of RL on the AOC level and those of Voegtlin et al. (2020) that found a positive relationship between RL and AOC. The result is also associated with the mediating role of CSR in the relationship between transformational leadership and AOC reported by Allen et al. (2017). In general, it is observed that the effects of the RL style on the psychological and behavioral states of employees occur indirectly. Likewise, it was observed that gender did not affect the AOC levels, while the size of the organization and the geographical scope of operation affected the level of CSR practices in a slightly but significant way.

Implications of the Study

In terms of theoretical implications, this study provides an explanation of how CSR mediates the relationship between RL and AOC using the SIT framework. Followers feel identified

TABLE 5 | Results for the hypotheses to be tested in the CSR mediation model.

Hypothesis		Direct effect	Indirect effect	Bound values		Results of the analysis
				Lower	Upper	
H1	RL → AOC	$\beta = 0.06^{ns}$		-0.06	0.18	Not accepted
H2	RL → CSR	$\beta = 0.36^{***}$		0.22	0.49	Accepted
H3	CSR → AOC	$\beta = 0.62^{***}$		0.49	0.73	Accepted
H4	RL → CSR → AOC		$\beta = 0.22^{***}$	0.13	0.33	Accepted

The β values are standardized coefficients; ^{ns}not significant; ^{***} $p < 0.001$.

with responsible leaders that act according to higher moral standards, and with organizations that are responsive to societal expectations. These higher levels of social identification with RL and organizations increase the level of AOC. This study explains how CSR practices mediate the relationship as employees are the first ones to experience the effects of RL in the operations of the organization and their impact in the wellbeing of society and the planet.

The results of this research have practical implications for managers who face the challenge of getting their organizations to regain the trust lost due to negative environmental impacts and increased inequity (Edelman, 2020). The findings indicate that managers who adopt and promote the RL will favor the development of CSR practices in their organizations, building sustainable and trusting relationships with different stakeholders and coordinating their action to achieve common goals, sustainability, and social legitimacy (Maak and Pless, 2006). Besides, organizations should recognize that developing RL behaviors can strengthen the capacity of managers to motivate and have an engaged workforce, for example in the Colombian context adopting a transformational leadership style – ethical and value-based leadership approach – can help managers increase the level of commitment of their workers (Bohorquez, 2016; Mañas-Rodríguez et al., 2020). Additionally, as organizations are pressured to contribute to sustainable development, HR departments should include responsible competencies as criteria for selecting leaders; and develop leadership training programs that emphasize the development of RL skills.

On the other hand, since the results of this research indicate the strong influence of CSR practices on the AOC of employees, it is desirable to periodically socialize the projects that the company carries out to meet the needs of the different stakeholders. Previous research has found that workers with high levels of AOC improve their job performance (Sharma and Dhar, 2016; Wang et al., 2020) and achieve higher levels of creativity (Ribeiro et al., 2020). The results also indicate that it is not enough for managers to recognize and show their willingness to incorporate CSR, it is necessary to effectively deploy CSR projects in such a way that employees perceive their development, which in turn enhance their self-identity and levels of AOC. For the Colombian context it has been found that is desirable to develop internal CSR practices to develop higher levels of AOC (Ávila-Tamayo and Bayona, 2022).

These findings suggest that managers that wish to develop CSR practices can adopt a RL style, and that this leadership style can increase AOC when CSR practices with employees, suppliers, customers, and the environment are developed. This work provides a new conceptual model which considers the mediation role of CSR on the relationship between RL and AOC and offers an empirical validation with a sample of employees in a developing country.

Limitations and Future Research

This study has limitations related to data collection, sample size and scope. Data collection was carried out through a self-report

questionnaire answered by employees, which can lead to social desirability bias; this means that the participants could tend to present a favorable image of themselves and their organizations. In future studies, this bias can be mitigated by using various sources for data collection, for example, surveying not only employees but also managers. Since it is a cross-sectional study, it does not allow the analysis of data evolution. Future studies could use a longitudinal approach that provides more complete explanations on the causality between variables under study.

This investigation used a subject type – feasible sample so a larger sample is desirable in further research to generalize. For example, future studies could use representative samples from various sectors or countries to evaluate the effect of context variables such as culture, sector dynamics or government regulations.

The hypothetical model could be refined to give more rigor to the study, for example, it is necessary to evaluate the probable mediating role of human resources practices such as: job design, organizational climate, or work life balance. Research on the effects of RL on other outcomes such as civic or environmental behaviors is needed. On the other hand, research on internal determinants of CSR, such as board composition or strategic choices is still required. Finally, future research from a qualitative approach could investigate the reasons why certain dimensions of CSR are presented with more intensity than others and how they are developed.

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 participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

RP wrote all the sections of this manuscript.

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APPENDIX

TABLE A1 | Assessment of normality.

Variable	Min	Max	Skew	C.R.	Kurtosis (β 2)	C.R.
Sex	1	2	0.22	1.54	-1.95	-7.01
RL1	1	5	-0.71	-5.06	0.20	0.70
RL2	1	5	-0.66	-4.75	-0.10	-0.37
RL3	1	5	-0.56	-4.01	-0.11	-0.39
RL4	1	5	-0.46	-3.31	-0.11	-0.41
RL5	1	5	-0.57	-4.07	-0.16	-0.55
CSR1	1	6	0.86	6.19	-0.75	-2.70
CSR2	1	6	0.31	2.25	-1.45	-5.22
CSR3	1	6	0.11	0.76	-1.59	-5.69
CSR4	1	6	1.21	8.65	0.14	0.49
CSR5	1	6	0.93	6.70	-0.52	-1.88
CSR6	1	6	0.67	4.79	-1.00	-3.58
CSR7	1	6	0.64	4.61	-1.03	-3.71
CSR8	1	6	-0.20	-1.41	-1.27	-4.57
CSR9	1	6	-0.82	-5.87	-0.33	-1.17
CSR10	1	6	-0.50	-3.56	-0.84	-3.01
CSR11	1	6	-0.45	-3.23	-1.15	-4.11
CSR12	1	6	-0.30	-2.13	-1.18	-4.25
CSR13	1	6	-0.30	-2.18	-1.10	-3.95
CSR14	1	6	-0.83	-5.99	-0.30	-1.07
CSR15	1	6	-0.79	-5.68	-0.06	-0.20
CSR16	1	6	-1.32	-9.44	1.38	4.94
CSR17	1	6	-1.44	-10.36	1.49	5.34
CSR18	1	6	-0.98	-7.06	0.05	0.18
CSR19	1	6	-1.06	-7.59	0.46	1.63
CSR20	1	6	-1.17	-8.37	0.66	2.38
CSR21	1	6	-0.53	-3.81	-0.82	-2.92
CSR22	1	6	-0.99	-7.10	0.38	1.35
CSR23	1	6	-1.05	-7.50	0.59	2.10
CSR24	1	6	-1.00	-7.20	0.45	1.61
CSR25	1	6	-0.98	-7.03	-0.07	-0.26
CSR26	1	6	-0.64	-4.62	-0.47	-1.69
CSR27	1	6	-1.07	-7.69	0.96	3.44
CSR28	1	6	-1.22	-8.72	1.14	4.08
CSR29	1	6	-1.72	-12.33	3.03	10.88
CSR30	1	6	-1.09	-7.83	0.58	2.09
CSR31	1	6	-1.18	-8.48	0.92	3.31
CSR32	1	6	-1.26	-9.05	1.22	4.38
CSR33	1	6	-1.25	-8.94	1.15	4.12
CSR34	1	6	-1.33	-9.56	1.43	5.13
CSR35	1	6	-1.33	-9.51	1.62	5.80
AOC1	1	7	-1.04	-7.44	0.26	0.93
AOC2	1	7	-0.44	-3.16	-0.97	-3.46
AOC3	1	7	-1.11	-7.96	0.59	2.13
AOC4	1	7	-1.24	-8.87	1.07	3.85
AOC5	1	7	-1.43	-10.27	1.62	5.80
AOC6	1	7	-1.47	-10.53	2.29	8.23
AOC7	1	7	-1.62	-11.64	2.52	9.03
AOC8	1	7	-1.08	-7.78	0.71	2.55
Multivariate					435.74	60.19



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Employees' emotional awareness as an antecedent of organizational commitment—The mediating role of affective commitment to the leader

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Commitment has been perceived as a strategic topic in organizations due to its positive effect on retaining talent, increasing performance, or boosting employees' innovative behavior. However there are many foci of commitment in the workplace, which has represented a challenge to human resources management, who need implement measures to improve the employee's commitment. Recent research has suggested a need to conduct studies about commitment, namely antecedents and the relationship between different foci, to understand the dynamic and directionality between them. Hence, the purpose of this work is to analyze how employees' emotional awareness relates with two foci of commitment (the leader and the organization), also assessing the mediating role of affective commitment to the leader. The study uses structural equation modeling and Lisrel to test the hypotheses considering the multidimensionality of organizational commitment (affective; normative; and continuance), employees emotional awareness (understanding self-emotions; self-control when facing criticism; and understanding others' emotions), and the affective commitment to the leader, under the scope of Social Exchange Theory. The Mackinon's Z Test was used to assess the mediation role of affective commitment to the leader. The sample is composed for 403 employees from two multinational companies. The results provide empirical evidence about the mediating role of affective commitment to the leader in the relationship between employees' emotional awareness and organizational commitment, and the employees' emotional awareness as an antecedent of commitment. The implications for theory and practice are discussed.

KEYWORDS

organizational commitment, commitment to the leader, employees' emotional awareness, dual commitment, workplace commitments

Introduction

Commitment has been increasingly considered a significant topic for organizations. Strategic interest in workplace commitment is related to the positive effects that it can have on employees, which are reflected in better organizational outcomes (Meyer, 2009; Beer et al., 2015; Markoulli et al., 2017; Culibrk et al., 2018; Klein et al., 2020; Lee et al., 2020).

Several studies have suggested a positive influence of commitment on employees' motivational levels, which leads to increased levels of performance and innovation, while turnover and absenteeism rates that can harm business results also decrease (Battistelli et al., 2013; Xerri and Brunetto, 2013; Meyer, 2016; Lapointe and Vandenberghe, 2017; Zhang et al., 2018; Bak, 2020). The studies also reveal that the positive effects of commitment are also observed at the level of employees' wellbeing, where increased prosocial behaviors in the organization lead to people-oriented organizational culture.

It can be said that the development of commitment measures in the workplace helps organizational sustainability (Murray and Holmes, 2021).

This interest and the need to undertake studies that enable a better understanding of commitment have come under attention over the last few decades. However, this need has intensified considerably in light of the changes we have witnessed regarding work relationships and how this influences how employees currently commit themselves to their workplace (Morrow, 2011; Hansen and Leuty, 2012; Heaphy et al., 2018).

This context has posed challenges to managing commitment, especially with regard to planning human resource policies that have an effective impact (Beer et al., 2015). The current difficulty in managing commitment stems not only from the change in paradigms associated with the new generations, but also from the need to better understand the multiplicity of foci for commitment that co-exist in the workplace.

Organizational commitment has been a target which has come under much study in recent years. However, research suggests that the strength of employee commitment to the organization has remained relatively stable over the last three decades. This, underline the probability of other foci of commitment gaining more relevance, such as commitment to the leader, colleagues, among others (Meyer et al., 2015; Meyer, 2016; van Rossenberg et al., 2018, 2022; Eisenberger et al., 2019; Klein et al., 2020).

Studies on commitment to the leader, whether conceptual or empirical, are relatively recent and remain scarce, despite this being a factor with a crucial effect on promoting and implementing organizational transformations, as it has a direct impact on employees (Jin and McDonald, 2017; Lapointe and Vandenberghe, 2017; Benevene et al., 2018; Bak, 2020). The role of leadership has a significant impact on organizational culture, promoting the expected values and behaviors. According with Saeed et al. (2022) ethical leadership has a great influence on the followers' knowledge sharing, what is crucial to a culture of continuous

improvement because it can influence employees development and performance, and also the quality of services. According with these authors, employees' professional commitment plays a moderating role on this behavior. In that sense, the developments of studies with different foci of commitment, and its relation with leadership, also underline the need to investigate the leader as a focus of commitment.

Likewise, there is unanimous recognition in the community of researchers that there is a need to learn more about commitment, to more thoroughly explore its different antecedents and how they influence the processes of commitment, combining studies with different foci and exploring its multidimensionality (van Rossenberg et al., 2022).

Since the commitment process is inherent to the individual's perceptual assessment, this study seeks to identify the extent to which employees' emotional awareness can be considered an antecedent of organizational commitment and affective commitment to the leader, under the scope of the Social Exchange Theory (SET; Homans, 1958) and Affective Events Theory (AET; Weiss and Cropanzano, 1996). The emotional awareness brings to the employees the ability to identify and manage emotions according with the context, being able to identify not only their own emotions, but also those of others, and adapt their behavior appropriately (Côté, 2014; Helvac and Yilmaz, 2020).

Thus, to contribute to fill this gap, supporting on AET the aims of the present study are twofold. The first goal is to analyze the extent to which employees' emotional awareness can be considered an antecedent of organizational commitment and affective commitment to the leader. Complementary, and based on SET, the second goal is to explain the leader member affective exchange. In other words, it is to analyze the extent to which affective commitment to the leader is a mediator of the process of employees' commitment to the organization. Finally, the discussion of the results of our study will provide some implications for theory and practice.

Theoretical framework and hypotheses development

Employees' emotional awareness as an antecedent of organizational commitment

Commitment is seen as a connection between an individual and a target; when it depends on extrinsic and intrinsic aspects of the individual, it can lead to behavioral stability (Meyer and Herscovitch, 2001).

One of the most quoted conceptualizations of commitment is the three-component model (TCM) put forward by Meyer and Allen (1991). This model, which has been revisited in various studies, is composed of the affective, normative, and continuance dimensions. From the perspective of organizational commitment, within the affective dimension, individuals create

an affective and emotional bond with the organization and stay because they like it, and identify with it. The normative dimension implies a duty of moral obligation, and a feeling of indebtedness to the organization. Within the continuance dimension, individuals commit based on factors of an instrumental nature (material or monetary), which generate costs associated with change (Becker, 1960; Allen and Meyer, 1996; Meyer and Allen, 1997; Powell and Meyer, 2004; Klein et al., 2009).

Recent models suggest that commitment is influenced by antecedent variables that influence commitment processes according to various commitment foci. These variables can be of close influence (e.g., the nature of the task; relationships, and the status held in the organization) and of distant influence (e.g., personal characteristics, management practices, organizational climate, and culture; Meyer and Allen, 1997; Meyer and Herscovitch, 2001; Meyer, 2014; Klein et al., 2020). Thus, as commitment is a psychological state which is based on a set of perceptual assessments, the dynamics inherent in the way individuals perform these assessments will influence their behavioral process toward one or more foci (Meyer and Allen, 1997).

In view of this, the emotional response of an individual is closely related to their degree of awareness and their ability to interpret the facts they experience. How individuals interpret emotions, cognitive dynamics, and physical sensations determines their behavior and actions. There are several studies focused on positive emotions in the leader-member exchange literature (Cropanzano et al., 2017; Herman et al., 2018). In fact, social exchanges in organizations are the basis of the two-way relationship between leaders and employees (Bishop et al., 2005; Bhal et al., 2009).

Thus, the emotional experience has an implicit physical and intellectual impact, which triggers an emotional state affecting the individual's experience and interpretation in a given situation and context.

When the emotional process is carried out with a greater degree of awareness, it implies a more constructive emotional response, as it enables the individual to re-evaluate both the specific situation and the way in which they react emotionally (Smith and Lane, 2015; Panksepp et al., 2017; Smith et al., 2018).

For this current study were considered three variables that measure individuals' emotional awareness, such as Understanding self-emotions (USE); Self-control when facing criticism (SFC); and Understanding others' emotions (UOE), based on the model developed by Rego and Fernandes (2005), previously adapted from the emotional intelligence model of Mayer and Salovey (1997). In short, employees' emotional awareness can positively influence their day-to-day experience in the organization as well as their interpersonal relationships, and therefore also positively influence their organizational commitment. Thus, following this assumption, the first general hypothesis is formulated:

Hypothesis 1: Employees' emotional awareness is positively related to organizational commitment.

According to Rego and Fernandes (2005), understanding self-emotions refers to the way in which individuals interpret their

emotions and the event that triggered the emotion. This analysis allows individuals to understand what they feel and why enables them to regulate emotion constructively. This intellectual process can lead to individuals having greater awareness regarding the aspects with which they empathize and identify, and also positively influence affective, normative, and continuance organizational commitment. In view of the above, the following specific hypothesis is formulated:

Hypothesis 1a: Understanding self-emotions is positively related to organizational commitment.

Self-control when facing criticism refers to individuals' ability to recognize and control their emotions in situations where they are the target of criticism. It implies the individual's ability to understand the reason for the criticism and, consequently, to know how to deal with it (Rego and Fernandes, 2005). As mentioned by Smith et al. (2018), when employees are criticized, they can interpret this context in several ways. Individuals with greater emotional awareness will tend to interpret criticism constructively, drawing on it to self-correct and be aligned with what is intended. On the other hand, a lesser capacity for emotional management implies that individuals interpret feedback only as criticism; this may lead to fear of losing one's job, or to becoming insecure because they think that they are not able to live up to expectations. Thus, the following hypothesis is formulated:

Hypothesis 1b: Self-control when facing criticism is positively related to organizational commitment.

Understanding others' emotions encompasses individuals' ability to identify and understand the emotions of those with whom they interact and adapt their interaction according to this interpretation. This intellectual dynamic leads individuals to regulate their behavior and communication to be in keeping with the context and the interlocutor (Rego and Fernandes, 2005). The quality of the interaction provides a greater ability to relate positively to the different stakeholders, with a certain level of emotional connection; this can promote the development of affective bonds and a sense of duty toward the organization. On the other hand, this capacity for emotional management can also provide individuals with the construction of solid relationships that foster continuity and the construction of a career in the organization. In view of the above, the following hypothesis is formulated:

Hypothesis 1c: Understanding others' emotions is positively related to organizational commitment.

Employees' emotional awareness and affective commitment to the leader

Although organizational commitment is one of the most studied constructs, the same is not the case for commitment to a leader; this target of commitment is yet to be fully explored (Meyer et al., 2015; Becker, 2016; Klein et al., 2020; van Rossenberg

et al., 2022). Leaders play a key role in promoting and implementing organizational transformations, as well as in day-to-day management and teams. As a figure who actively and continuously intervenes, the leader directly impacts employees' experience in the organization (Bycio et al., 1995; Avolio et al., 2004; Eisenberger et al., 2010). Some studies suggest that leadership style influences employees' organizational commitment (Bass et al., 2006; Zheng et al., 2015; Benevene et al., 2018; Zhang et al., 2018; Bak, 2020). However, the leader as a commitment target has only been approached relatively recently, and is still the subject of few studies, whether conceptual or empirical (Stinglhamber and Vandenberghe, 2003; Becker et al., 2009; Meyer, 2009; Strauss et al., 2009; Meyer et al., 2015; Klein et al., 2020; van Rossenberg et al., 2022).

Despite the multidimensional nature of commitment, authors such as Klein et al. (2014) and Meyer et al. (2015) argue that commitment to a leader tends to be a unidimensional construct, where the affective dimension has the greatest consistency, and where the normative and continuance dimensions are strongly correlated.

There is unanimous agreement that leaders' actions influence employees, but the extent to which employees' emotional awareness influences the way they interpret actions and interactions is not clear, as well as the role they play in the commitment process. The AFC argues that emotions are a significant part of human beings, from which they support substantially their actions and reactions. Therefore, emotions have a great impact in organizations, in the relationships between the stakeholders, as well as on commitment in the workplace. Emotions are internal events that occur within an actor as a result of social exchange emerging when two or more people exchange valued outcomes such as rewards or payoffs (Lawler and Thye, 2006). The study of emotions and affective experiences in organizations is not new (Fredrickson, 2000; Barsade and Gibson, 2007). Treating emotional awareness as central feature of social exchange the common knowledge will be updated and enriched, through the social sharing of emotions at work.

The interpretation of emotions by the individual requires an assessment of the situation they are experiencing, and they will thus create representations or will rely on representations which were previously created in similar situations (Smith et al., 2018). This analysis can be conscious or not, where the assessment carried out is based on: (i) whether the situation is new or familiar; (ii) whether or not it is relevant to the current concerns of the individual; (iii) whether or not it is congruent with their objectives; (iv) whether it is within or outside their control; and (v) whether or not it is consistent with their norms or values (Brosch and Sander, 2013; Smith et al., 2018). A study of Zia et al. (2018) presented empirical evidences that employees' emotional intelligence has a positive influence during conflict resolution strategies by supervisors, and also contribute to organizational citizen behavior among the group members. It is therefore assumed that, by providing a greater ability to analyze and manage emotions, both for individuals and for those with whom they

interact, employees' emotional awareness leads to a more constructive and healthy leader-member exchange. In view of the above, the following general hypothesis is formulated:

Hypothesis 2: Employees' emotional awareness is positively related to affective commitment to the leader.

Emotional awareness supports individuals by fostering a greater ability to face everyday situations in a satisfactory manner. Faced with the challenges that arise, they use these experiences to structure their own development (Yip and Côté, 2013; Côté, 2014; Rimé, 2015; Smith et al., 2018). Understanding self-emotions is expected to enable the individual to be aware of the affective connection to the leader, contributing to an increasing awareness of the affective bond of commitment. Thus, the following specific hypothesis is formulated:

Hypothesis 2a: Understanding self-emotions is positively related to affective commitment to the leader.

Leader-member exchanges are imbued with moments of positive and negative feedback, in which employees' emotional awareness can represent an important aspect of managing feedback. Self-control when facing criticism assumes that employees take feedback as constructive and as an integral and fundamental part of their development and alignment with objectives. Thus, Self-control when facing criticism is expected to positively influence affective commitment to the leader, with feedback being viewed as a guide to their development, and with the employee feeling grateful for having it. In view of the above, the following specific hypothesis is formulated:

Hypothesis 2b: Self-control when facing criticism is positively related to affective commitment to the leader.

Understanding others' emotions allows employees to identify and align their behavior with the emotions of those with whom they interact. Cost-benefit analysis plays a major role in the social exchange process at work according to the SET (Homans, 1958). This theory is one of the most relevant frameworks in organizational behavior at the moment in different disciplines (Cropanzano and Mitchell, 2005). Under this paradigm, employees essentially take the benefits of the relationship with the leader, and with the organization, and subtract the costs to determine how much it is worth. It is important to highlight that this form of interaction driven by the individual interest of the employees is likely to transform into collective emotions (Lawler et al., 2014) positively contributing to organizational culture (Rimé, 2020).

According with Zia et al. (2018) in conflict contexts the employees emotional intelligence allows to a better understanding of leader's conflicts resolution strategies, impacting also the employee's behaviors on the organization. In that sense, the ability to understand other's emotions permits to the individual

manage their actions and build positive relationships in the workplace, what enables the process of affective commitment to the leader. In this way, the following specific hypothesis is formulated:

Hypothesis 2c: Understanding others' emotions is positively related to affective commitment to the leader.

The relationship between affective commitment to the leader and organizational commitment

Although there is consensus around the existence of multiple foci of commitment in the workplace, the same is not the case regarding their relationships and directionality, and few studies have undertaken an approach to two or more commitment foci (Klein, 2013; Meyer et al., 2015; Becker, 2016; Klein et al., 2020; van Rossenberg et al., 2022).

A recent study by Meyer et al. (2015), as an extension of the study by Stinglhamber and Vandenberghe (2003) which focused on two commitment foci, namely the organization and the supervisor, suggests that conceptual and empirical research on supervisor commitment is necessary, as well as its relationship with organizational commitment.

According to the aforementioned, the leader is one of the main actors in the organization, with active responsibility for the success and implementation of organizational measures. As such, it is the leader who interacts with employees and has a direct effect on individuals in the daily management of their responsibilities (Stinglhamber et al., 2015; Lapointe and Vandenberghe, 2017; Wu and Parker, 2017; Zhang et al., 2018). In this process of management and interaction, the leader can be an important target of commitment. Some studies have shown that the leadership style, as well as the way leaders give feedback to their teams, and the perception of interpersonal justice, can influence organizational commitment (Lapointe and Vandenberghe, 2017; Tetteh et al., 2019; Bak, 2020).

From the perspective of the dark side of leadership, Nadeem et al. (2020) identified the negative influence of destructive leadership on workplace and personal deviance, where emotional exhaustion plays a mediation role in the relationship. In this study is clear that the leadership can be oriented to create organizational damages, and even influence employees to act accordingly with this kind of interests. In this case, the employees' emotional exhaustion conduct to workplace deviance and interpersonal deviance.

In contrast, positive leader behaviors influence many positive aspects, as Zada et al. (2022) have argued; servant leadership behavior promotes knowledge sharing, but also brings to the relationship some kind of proximity that supports psychological safety at work, where cooperative behaviors are common while discouraging immoral behaviors. The same indicates the study of Fatima et al. (2017) where participative

leadership influences employee's commitment to change, and increases their innovative work behavior. Once again, the leader plays a relevant role in commitment in the workplace, reinforcing the need to expand studies about the leader as foci of commitment, and its relationship on organizational commitment.

The study by Eisenberger et al. (2010) also suggest that the way employees perceive the leader's organizational embodiment positively influences their organizational commitment, as the leader is seen as a representative of the organization. The emotional awareness brings to the employees the ability to identify and manage emotions according to the context, being able to identify not only their own emotions, but also the others' emotions, and adapt their behavior appropriately. Similarly, Stinglhamber et al. (2015) presented empirical shreds of evidence about the influence of transformational leadership on follower's affective organizational commitment.

Based on these studies, affective commitment with the leader is expected to lead to affective organizational commitment, insofar as the affective bonds developed are directed toward a figure that represents the organization. Therefore, the quality of the leader-member exchange which maintains a satisfactory and close relationship may lead to the development of a sense of duty toward the organization, positively influencing normative-organizational commitment. Leaders have increasingly assumed an important role in the career development of their team members, establishing a relationship where the feedback is an important key for improvement (Crawshaw and Game, 2015; Bak, 2020). Therefore, this context stimulates the affective commitment to the leader, having inherent career interests, so a positive influence of affective commitment with the leader is expected in the continuance of organizational commitment. Thus, the following general hypothesis was formulated:

Hypothesis 3: Affective commitment to the leader is positively related to organizational commitment.

In the proposed model (see Figure 1) that lays out the hypotheses formulated above, a mediation relationship is also included (Baron and Kenny, 1986). The aim is therefore to identify whether the relationship between employees' emotional awareness and organizational commitment is mediated by affective commitment with the leader. Many studies have suggested that the leader influence employees' affective organizational commitment (Eisenberger et al., 2010; Stinglhamber et al., 2015; Lapointe and Vandenberghe, 2017; Benevene et al., 2018). Considering that, the leader is an important figure in the workplace, and several studies have suggested that many different types of leadership have positive influences, not only on employees positive behaviors, but also, influence the affective organizational commitment, it is expected that affective commitment to the leader play a mediating role in the relationship between employees' emotional awareness and organizational commitment.

In view of the above, the following hypothesis was formulated:

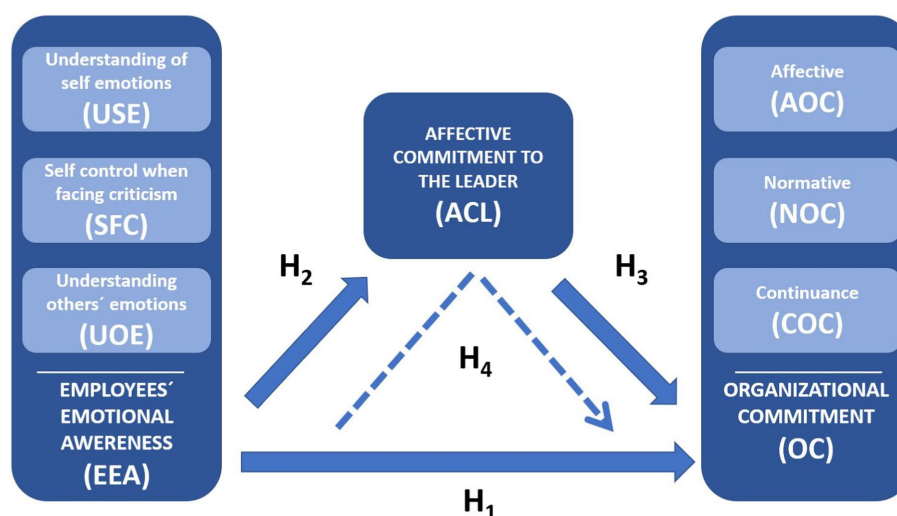


FIGURE 1
Conceptual model.

Hypothesis 4: Affective commitment to the leader positively mediates the relationship between employees' emotional awareness and organizational commitment.

Materials and methods

Sample

This study involved the participation of two large private organizations in Portugal, one of French nationality in the retail sector, and another multinational of Portuguese nationality in the food industry. These two companies were chosen to minimize the cultural country limitation, for the reason that both have employees of different nationalities. We have also decided to consider companies from different sectors to ensure sample diversity.

This convenience sample consisted of 403 respondents from two different sectors in Portugal: one company from the retail sector (14,000 employees) and the other company from the food industry company (3,000 employees). According to the calculation of samples for finite populations, we can consider that the sample of 403 is representative of the population of 17,000 and sample error less than 5%. It was composed of 56.1% female respondents and 43.9% male respondents, with an average age of 37 years; the minimum age of respondents was 20 years and the maximum age 65 years. Average tenure in the organization was 9 years, with the minimum tenure in the same organization being 1 year and the maximum 40 years.

Measures

This study used a questionnaire survey as the data collection instrument. The data were subjected to statistical

analysis and treatment using the *Statistical Package for Social Sciences—SPSS* (version 22) and *LISREL 9.2*. All measurement models were validated against the sample (with a dimension of 403 respondents) through confirmatory factor analysis (CFA). They were respecified by eliminating items with factor loading values lower than 0.5 and high modification indices (Hair et al., 2010).

The questionnaire consisted of three author scales, with answers based on a seven-point Likert scale, where “1” corresponds to “Totally Disagree” and “7” to “Totally Agree.” Employees' Emotional Awareness was measured based on the model of Mayer and Salovey (1997) in the version adapted and validated for the Portuguese context by Rego and Fernandes (2005). It is a formative measurement model with nine items and three dimensions: Understanding self-emotions, Self-control when facing criticism, and Understanding others' emotions. According to Hair et al. (2010), the three dimensions have indexes that support their convergent validity (respectively Understanding self-emotions: $\alpha = 0.875$, AVE = 81%, and CR = 0.93; Self-control when facing criticism: $\alpha = 0.761$, AVE = 58%, and CR = 0.80; and Understanding others' emotions: $\alpha = 0.690$, AVE = 61%, and CR = 0.82).

Regarding organizational commitment, a scale was used which was adapted and validated for the Portuguese context by Nascimento et al. (2008) based on the scale of Meyer and Allen (1997). This questionnaire consists of nine items using the three dimensions (affective, normative, and continuance) of organizational commitment, each measured by three items. These dimensions also present indexes that support their convergent validity, in line with what was stipulated by Hair et al. (2010) (Affective organizational commitment: $\alpha = 0.825$, AVE = 68%, and CR = 0.86; Normative organizational commitment: $\alpha = 0.846$, AVE = 69%, and CR = 0.87; and Continuance organizational commitment: $\alpha = 0.735$, AVE = 54%, and CR = 0.78).

Finally, to measure affective commitment to the leader, the questionnaire validated by Nascimento et al. (2008) for the Portuguese context on organizational commitment was adapted for leader. This questionnaire only used the affective dimension of commitment to the leader, so three items of the scale were included in the questionnaire. It presented indexes that also support its convergent validity (Affective commitment to the leader: $\alpha = 0.879$, AVE = 78%, and CR = 0.91).

To minimize the common method bias, the different scales have reversed items, and for the design of the questionnaire, the scales were also subjected to a random distribution of the items of which they are composed (Podsakoff et al., 2012). The variance associated with the common method bias was calculated using the common factor method (Podsakoff et al., 2003).

Following the process stipulated by Podsakoff et al. (2003), the model without the common factor is significantly different from the model with it [measured by all 21 items of the questionnaire; $\Delta\chi^2 = 48.37$; $\Delta df = 21$; critical value for $\Delta\chi^2(\Delta df = 15) = 32.671 < 48.37$]. On the other hand, it is also found that the inclusion of the common factor leads to a better adjustment of the model, namely in terms of RMSEA (0.068 vs. 0.059), GFI (0.906 vs. 0.928), and CFI (0.985 vs. 0.990). However, the average variance extracted (AVE) by the common factor (AVE = 20%) is lower than the reference value whereby “typical job performance measures contained an average of 22.5% method variance” (Podsakoff et al., 2003, p. 880). Considering the AVE by the common factor, despite the differences between the two models (with and without a common factor), it can be concluded that the common method biases will not have a significant influence on the estimation of the proposed model.

Results

Descriptive statistics

Based on the CFA, descriptive statistics of the latent variables are presented in Table 1. On analysis, it can be identified that the variable's averages have high values, with the dimension of continuity of organizational commitment showing the lowest average value with 3.09. They have a convergent validity determined by factor loading all of the above 0.5 and AVE above 0.5. Likewise, the internal consistency and reliability are acceptable with a Construct Reliability and a Cronbach Alpha Coefficient above 0.7 in all variables (Schermelleh-Engel et al., 2003; Hair et al., 2010).

Regarding the dimensions of emotional awareness (USE, SFC, and UOE) a significant correlation relationship was identified between Understanding self-emotions and Understanding others' emotions (0.43). This result suggests that we could be dealing with variables with different nomenclatures that measure similar factors. In this specific case, understanding emotions is a common factor; in the dimension of Understanding self-emotions, it refers to the individual's own emotions, and in the dimension of

Understanding others' emotions, it is about managing emotions while interactions with other people take place.

The correlation value between the normative and affective dimension of organizational commitment can also be emphasized (0.73). These data are in line with what is advocated by several authors regarding the need to reassess the commitment model, due to the fact that there may be an issue of a two-dimensional model (Meyer and Allen, 1997; Meyer et al., 2002; Meyer and Parfyonova, 2010).

Finally, a significant correlation was also found between the between affective organizational commitment and affective commitment to the leader (0.41). Once again, the affective component is common to both constructs, despite their different focus (organization and leader).

Given these results, a positive relationship was found between the three dimensions of emotional awareness (USE, SFC, and UOE) and affective organizational commitment, with statistically significant values. Regarding the relationship between the dimensions of emotional awareness and normative organizational commitment, they present positive and statistically significant results, with the exception of Self-control when facing criticism.

As for the relationship between emotional awareness and continuance organizational commitment, the only statistically significant correlation, to Self-control when facing criticism, is negative (-0.15^{**}). Regarding the relationship between emotional awareness and affective commitment to the leader, it can be identified that all dimensions (USE, SFC, and UOE) are positively correlated and have significantly high values.

Analysis of the structural model of the relationship between emotional awareness and organizational commitment

The model proposed has a good index for goodness of fit (Table 2).

Based on the results of the analysis, it was found that Understanding self-emotions has a positive relationship with the affective (0.33), normative (0.38) and continuance (0.23) dimensions of organizational commitment (Figure 2). In view of these results, we can state that H1_a was confirmed. Self-control when facing criticism has only a negative relationship (-0.25) with continuance organizational commitment. Thus, H1_b was rejected, as there was no relationship with affective organizational commitment or normative organizational commitment. In the case of Understanding others' emotions, it only presents a (positive) relationship with affective organizational commitment (0.20). Thus, H1_c was partially confirmed, insofar as there was no relationship with normative and continuance organizational commitment, despite the positive relationship presented above.

The determination coefficient (R^2) was also analyzed, and a relationship of influence of the dimensions of emotional

TABLE 1 Correlations between latent variables.

	M	DP	USE	SFC	UOE	A-CL	A-OC	N-OC	C-OC
USE	5.491	0.882	(0,88); [0,81]; {0,93}						
SFC	3.940	1.052	0.20**	(0,761); [0,58]; {0,80}					
UOE	4.819	0.619	0.43**	0.26**	(0,69); [0,61]; {0,82}				
A-CL	4.659	1.447	0.20**	0.25**	0.23**	(0,88); [0,78]; {0,91}			
A-OC	4.329	1.213	0.32**	0.15**	0.31**	0.41**	(0,83); [0,68]; {0,86}		
N-OC	3.938	1.380	0.27**	0.06	0.23**	0.29**	0.73**	(0,85); [0,69]; {0,87}	
C-OC	3.092	1.198	0.09	-0.15**	-0.02	-0.10*	0.08	0.10*	(0,74); [0,54]; {0,78}

USE, Understanding self-emotions; SFC, Self-control when facing criticism; UOE, Understanding others' emotions; A-CL, affective commitment to the leader; A-OC, affective organizational commitment; N-OC, normative organizational commitment; and C-OC, continuance organizational commitment.

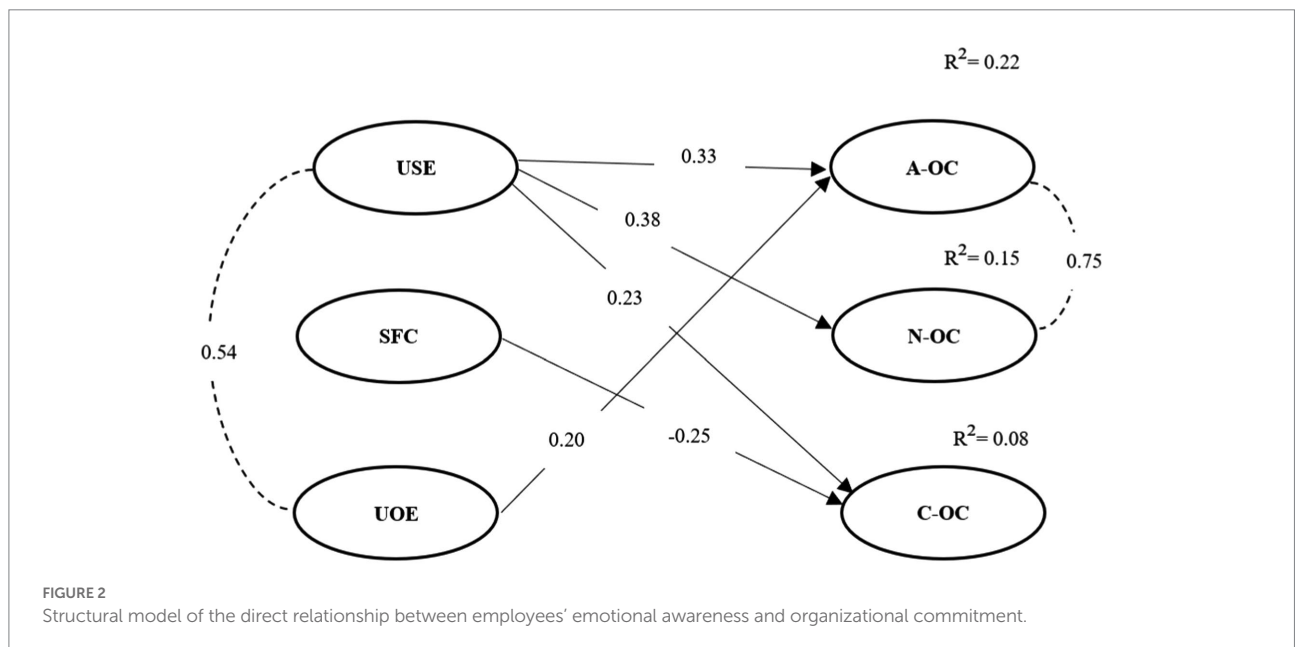
(), Cronbach's Alpha Coefficient (acceptance values of 0.70); [], Average Variance Extracted (acceptance values of 0.50); and {}, Construct Reliability (acceptance values of 0.7).

* $p < 0.05$ and ** $p < 0.01$.

TABLE 2 Goodness of fit index of the relation between emotional awareness and organizational commitment.

χ^2	df	p value	RMSEA (<0.8)	GFI (>0.9)	IFI (>0.9)	CFI (>0.93)	χ^2/df (<0.02)	AIC (smallest value)
188.10	126.00	0.000	0.065	0.917	0.950	0.950	1.49	3,136,62

(), Acceptable Fit (Schermelleh-Engel et al., 2003; Hair et al., 2010).



awareness regarding the three dimensions of organizational commitment (affective, normative, and continuance) was identified. We found that Understanding self-emotions and Understanding others' emotions explain 22% of affective organizational commitment. It is also noteworthy that

Understanding self-emotions explains 15% of normative organizational commitment. In the case of continuance organizational commitment, 8% is explained by its positive relationship with Understanding self-emotions, and by the negative relationship with Self-control when facing criticism.

Analysis of the effect of mediation of affective commitment to the leader

After analyzing the structural relationships and testing specific hypotheses between emotional awareness and organizational commitment, according to the methodology established by Baron and Kenny (1986), MacKinnon et al. (2007), and Hair et al. (2010) the mediating variable was introduced in the final model of direct structural relationships, in this case, affective commitment to the leader. The model obtained shows good goodness of fit index (Table 3).

Regarding the relationship between employees' emotional awareness and affective commitment to the leader, the analysis of these relationships started from the relationships in H1, that is, from the direct relationship between emotional awareness and organizational commitment. Thus, it was identified that, in the presence of affective commitment to the leader, relationships between the dimensions of Emotional awareness and organizational commitment changed (see Figure 3). Understanding self-emotions ceased to be positively related to continuance organizational commitment, and the strength of the relationships between the other dimensions of emotional awareness and organizational commitment decreased.

Regarding the relationship between the dimensions of emotional awareness and affective commitment to the leader, there was a positive relationship with Understanding self-emotions (0.20) and with Self-control when facing criticism (0.28). Thus H2_a and H2_b were confirmed. However, H2_c was rejected, as Understanding others' emotions did not reveal any relationship with affective commitment to the leader.

As for the relationship between affective commitment to the leader and organizational commitment, a positive relationship was identified with the affective (0.43) and normative (0.33) dimensions and a negative association with continuance (−0.14). So these results partially support the H3.

On the other hand, there was a negative relationship with the continuance dimension of organizational commitment. These results are not aligned with the established theoretical framework. As a result of including the affective commitment to the leader in the model, we identified that Understanding Self-Emotions and Self-Control when facing criticism explained 15% of affective commitment to the leader. There is also an increase in the coefficient of determination in the different dimensions of organizational commitment, where 39% of affective organizational commitment is explained by the relationships of the final model, 25% of normative organizational commitment, and 10% of

continuance organizational commitment. Thus, the data suggest that affective commitment to the leader plays a mediating role in organizational commitment.

Mackinnon's Z test of the mediation of affective commitment to the leader between employees' emotional awareness and organizational commitment

The final structural model reflects the mediation effect of affective commitment to the leader in the relationship between the dimensions of emotional awareness and organizational commitment. It identified that mediation conditions exist, as both indirect effects are statistically significant (Baron and Kenny, 1986; MacKinnon et al., 2007; Hair et al., 2010). In view of these results, the significance of indirect effects was tested using Mackinnon's Z.

General Hypothesis 4 posits the possibility of mediation existing of affective commitment to the leader in the relationship between employees' emotional awareness and organizational commitment. Thus, the final model identified the mediation relationships (Table 4).

Given the above, the results confirm the mediation relationship as presented in Hypothesis 4. Thus, the data indicate that affective commitment to the leader mediates the relationship between Understanding self-emotions and the affective, normative, and continuance dimensions of the organizational commitment, as well as mediating the negative relationship between Self-control when facing criticism and the continuance variable of organizational commitment.

Discussion

Research from different authors have suggested carrying out studies that allow identification of antecedents, different foci of commitment, causes, effects, changes over time, directionality, and profiles, and motivating to a better understanding of commitment and the behavioral phenomena that it involves (Bergman et al., 2013; Meyer et al., 2015; Eisenberger et al., 2019; Klein et al., 2020; van Rossenberg et al., 2022). A contribution that reconciles the academic and practical perspectives has also been sought.

The results of this study emerged from an analysis of the antecedence relationship of the emotional awareness dimensions

TABLE 3 Goodness of fit index of the relation between employees' emotional awareness, affective commitment to the leader, and organizational commitment.

χ^2	<i>df</i>	<i>p</i> value	RMSEA (<0.8)	GFI (>0.9)	IFI (>0.9)	CFI (>0.93)	χ^2/df (<0.02)	AIC (smallest value)
262.82	175.00	0.000	0.068	0.901	0.984	0.984	1.501	3,325.57

(), Acceptable Fit (Schermelleh-Engel et al., 2003; Hair et al., 2010).

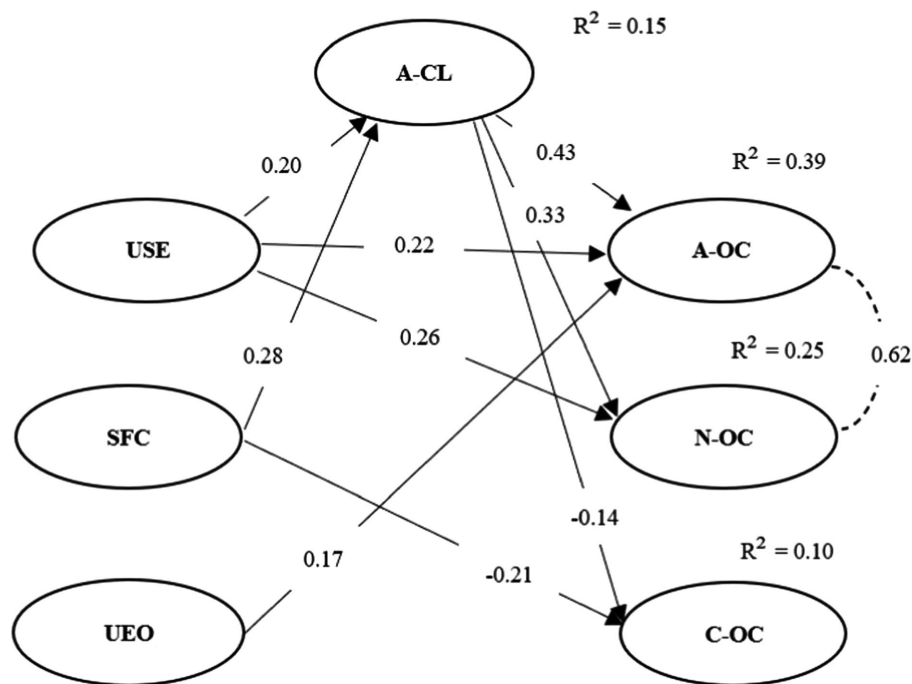


FIGURE 3

Diagram of the final model of the relationship between employees' emotional awareness, affective commitment to the leader, and organizational commitment.

TABLE 4 Mediation relationships of affective commitment to the leader in the relation between employees' emotional awareness and organizational commitment.

Mediation relationships	$Z'(Z' \geq 0.97)$	Conclusion
Mediation of A-CL between USE and A-OC	$Z' = 2.856$	Not rejected
Mediation of A-CL between USE and N-OC	$Z' = 2.688$	Not rejected
Mediation of A-CL between USE and C-OC	$Z' = -1.710$	Not rejected
Mediation of A-CL between USE and C-OC	$Z' = -1.816$	Not rejected

in relation to each dimension of organizational commitment. The results suggested that understanding self-emotions influences positively the three dimensions of organizational commitment (affective, normative, and continuance). Thus, it can be said that a greater degree of Understanding self-emotions, which is, being able to interpret and manage one's own emotions, promotes the conscious development of bonds that lead to organizational commitment. In this specific case, it can also be mentioned that this ability, despite its positive influence on the three dimensions of organizational commitment, has higher relationship values in the affective and normative dimensions (social exchange), and lower with the continuance dimension (financial exchange). This reveals that the conscious understanding of one's own emotions

favors the development of bonds of commitment, preferably affective, and of moral obligation toward the organization.

When affective commitment to the leader is included in the model of the direct relationship between emotional awareness and organizational commitment, a significantly positive relationship between Understanding self-emotions and affective commitment with the leader was found, but the relationship between Understanding self-emotions and continuance organizational commitment also disappeared. This result suggests that the strength of the affective commitment bond to the leader reduces the tendency for continuance organizational commitment.

Regarding to Understanding others' emotions, only its positive influence on affective organizational commitment was identified. This result is in line with the established theoretical framework, which states that a greater ability to consciously interpret others' emotions enables individuals to develop more satisfying and empathic interpersonal relationships. Thus, a higher level of Understanding others' emotions enhances the creation of affective or relational bonds; this will have consequences for the perception of the organizational context, and for the way in which employees analyze and assess the organization as a whole, developing affective organizational commitment.

Self-control when facing criticism showed a negative relationship with continuance organizational commitment. The theoretical framework argues that an employee's inability to constructively control emotions in feedback contexts may have an implicit rationale of fear, losing one's job, or having a lack of other

professional options (Smith et al., 2018). Therefore, this context can influence the development of organizational continuance commitment. Conversely, the greater the ability to accept criticism in a constructive and positive way and use it for one's own development, the lesser the tendency to link the context to the development of continuance organizational commitment.

The results also suggest the possibility that Self-control when facing criticism leverages affective commitment toward a personal commitment foci, and consequently a negative trend toward continuance organizational commitment. It should be recalled that in the final model (Figure 3), Self-control when facing criticism started by showing a positive relationship with affective commitment with the leader. It can be assumed that managing one's emotions and a positive attitude toward feedback may contribute to the positive relationship between employee and supervisor, strengthening affective commitment to the leader and decreasing continuance organizational commitment.

Thus, the greater the employees' emotional awareness, the greater their predisposition to affective commitment to the leader and the organization. The positive relationship of emotional awareness with two foci of commitment is linked to the possibility of having an antecedent of other foci of commitment.

Some authors such as Klein et al. (2009) or Meyer et al. (2012) argue that the affective dimension of commitment is actually the bond with the greatest strength. The results of this study corroborate this view, because both in relation to the organization and in relation to the leader, the coefficients of determination of the affective dimensions showed higher values than the continuance dimension. In view of this, it is also worth noting that affective commitment to the leader had a significant positive influence on affective organizational commitment and normative organizational commitment.

Recent studies which focused on commitment profiles, also suggested a strong correlation between affective and normative variables. The proposal is that this may constitute a moral duty profile, in which the employees are committed to the organization because they like it, but also because they feel a duty to contribute to organizational goals (Meyer and Parfyonova, 2010; Meyer et al., 2012).

Regarding the relationship between affective commitment to the leader and continuance organizational commitment, the relationship was found to be negative. We can therefore assume that, in the presence of an affective bond to the leader, the continuance bond not only loses relevance but is also inverse, i.e., negative. This result highlights the influence of commitment to the leader in forming organizational commitment.

Therefore, in line with what has also been argued by other authors, the results reveal the mediating role of affective commitment to the leader regarding the strength of the affective bond (Klein et al., 2009; Meyer et al., 2012; Klein, 2013).

The final model thus suggests that affective commitment to the leader has a mediating role in organizational commitment, specifically in the relationships between Understanding self-emotions and the three dimensions of organizational commitment

and in the relationship between Self-control when facing criticism and continuance organizational commitment (see Figure 2).

Theoretical contributions

The aim of this research was to contribute to the area of studies on commitment, reconciling two lines of research into commitment, one focused on identifying antecedent variables, and the other addressing the relationship between two foci of commitment in the workplace: the leader and the organization.

An analysis of the structural relationships was chosen in which three independent variables that reflect emotional awareness were established. An antecedent perspective was taken, with an approach to the multidimensionality of organizational commitment (affective, normative, and continuance), and the unidimensionality of affective commitment to the leader, from a relationship mediator perspective.

Thus, in view of the antecedent analysis regarding the two foci of commitment, the present study suggests that employees' emotional awareness, in particular Understanding self-emotions, Self-control facing criticism and Understanding others' emotions, influence the process of commitment to the leader and the organization, according with Affective Events Theory. The study also reveals that these relationships change according to the presence or absence of affective commitment to the leader, supporting the social exchange theory, more specifically the Leader Member Exchange Theory.

Based on the results, it can be stated that employees' emotional awareness, particularly Understanding self-emotions, can engender a greater predisposition to organizational commitment in its three dimensions: affective, normative, and continuance. Moreover, Understanding others' emotions positively influences affective organizational commitment. These results suggest that, according to Meyer and Allen's (1997) model, employees' emotional awareness may be a distant antecedent of commitment, as it is a personal characteristic of the employee.

Thus, the way in which the internal process of analyzing emotions is carried out, which may be a developed competence, is inherent to the individual around his experience with the external context. This dynamic is also subject to the experiences that individuals experience over time, carrying out different tasks in different organizational contexts. Individuals' behavior patterns are subject to the need to be permanently updated or renewed, depending on the experiences and needs of each individual's adaptive process, which is dynamic and continuous throughout life (Rimé, 2015; Smith et al., 2018).

For Rimé (2015) this process is complex, internal and in some cases time-consuming, which do not happen continually in moments of interaction with what is external to the individual. According to this author, the way in which this analysis process is undertaken internally may interfere with the way in which the individual overcomes obstacles, which may also impact an individual's commitment process.

A mediating role of affective commitment to the leader was also found, with the relationship between the dimensions of emotional awareness and organizational commitment changing. This dynamic showed that affective commitment to the leader inhibits the relationship between Understanding self-emotions and continuance organizational commitment. This result suggests that the affective bond with the leader is inverse to the continuance organizational commitment. Also, Self-control when facing criticism is shown to have a negative relationship with the continuance organizational commitment in its positive relationship with the affective commitment to the leader, which corroborates the previous interpretation of the results. Along these lines, regarding the relationship and directionality between the two commitment foci, we highlight the positive relationship between the affective commitment to the leader and affective and normative organizational commitment, and the negative relationship with continuance organizational commitment. This result again highlights the force of the affective bond in the commitment process. It should be noted that Klein et al. (2020) found that the continuance bond was more frequently reported regarding the organization than other foci. The result of our study corroborates this conclusion, from the perspective that the tendency of continuance commitment will decrease in the presence of an affective commitment to another target.

Finally, the positive correlation between the affective and normative dimension of organizational commitment should be highlighted. This result, once again, suggests the possibility that we there is a need to adjust the model, which could potentially be two-dimensional. Another interpretation, in line with studies of latent profiles, this result may suggest that what we are witnessing is a profile of moral duty (Meyer and Parfyonova, 2010; Meyer et al., 2012, 2015).

Practical implications

Commitment has been considered a significant subject in the strategy of organizations which aim to be competitive and develop a culture of high performance (Beer et al., 2015; Culibrk et al., 2018; Bak, 2020; Lee et al., 2020).

The challenges that commitment presents for management, especially people management, are fundamentally related to the difficulty of understanding what it is that enhances employee commitment; what the commitment bonds are; as well as determining the set of foci to which employees commit themselves in the organizational context (Beer et al., 2015; van Rossenberg et al., 2022).

Thus, this work identified that employees' emotional awareness has positive implications in their process of organizational commitment. It can be said that the emotional maturity of employees, that is, their ability to manage emotions more consciously, enhances their ability to satisfactorily understand and manages their daily lives, even in stressful situations (Mayer and Salovey, 1997; Smith et al., 2018; Zia et al.,

2018; Helvac and Yilmaz, 2020). According to the results of this study, understanding and conscious management of one's own emotions lead individuals to be more aware of what they want and what they seek as people and professionals. This condition enhances the creation of commitment bonds, in which the employee understands why he likes the organization, what makes him feel grateful to the organization and how he values instrumental aspects (career, salary, etc.).

The ability to understand others' emotions also has positive implications for affective organizational commitment, since this ability to manage and adapt one's emotional state according to those with whom one interacts tends to provide healthier and more satisfying relationships. This leads to a more positive perception of the organization and consequently leads to bonds of an affective nature.

It can thus be concluded that the development and emotional training of employees (from the basis until the top organizational positions) can be considered a measure that encourages the potential creation of commitment bonds in its different dimensions (affective, normative, and continuance).

It is common for organizations to opt for measures of an instrumental nature as a way to foster commitment. Investing in an attractive remuneration package may seem relatively less complex than implementing measures of a more abstract nature, such as affection, gratitude, or loyalty. However, the results show that a focus on measures for continuance organizational commitment is not necessarily more effective, whereby other organizations merely need to be willing to match or exceed the instrumental offer.

The present study highlighted the strength of the affective and normative bond in relation to the continuance bond (instrumental). On the one hand, affective and normative bonds were identified as showing stronger results in the relationship between emotional awareness and organizational commitment. On the other hand, in the presence of an affective commitment bond to the leader, there was a significant weakening of the continuance organizational commitment. These results suggest two relevant aspects; (i) the affective bond is potentially stronger and enhances commitment regarding other foci; and (ii) the leader is a commitment target with strong implications for affective and normative organizational commitment. Thus, the suggestion is that organizations should develop a culture of ethical leadership, where the leader also assumes a coaching role, contributing feedback to promote employees' development (Eisenberger et al., 2010; Bak, 2020; Saeed et al., 2022).

It should also be mentioned that development of affective commitment to the leader and positive feedback for employees significantly influences innovative work behaviors and organizational commitment (Bak, 2020). Given that, the present study suggests that a greater capacity for self-control when facing criticism favors affective commitment with the leader, developing employees' emotional awareness is suggested to enhance organizational commitment and affective commitment with the leader.

In short, a need can be identified to develop employees' emotional awareness and evolution, but also to reinforce the importance of leaders adopting a leadership style that enhances the employees' commitment to themselves and to the organization.

Limitations and future directions

This study did not identify a leadership style, nor did it measure the leaders' emotional awareness, namely from the perspective of his subordinates. This analysis could contribute to parallel readings regarding the results. This fact is not only a limitation, but also a recommendation for future studies.

The controversy that exists around the definition, measurement, and differences between emotional awareness and emotional intelligence may also be taken as a limitation, such that other scales may provide different results.

In the line of research used to carry out this work, it is also suggested to carry out studies that use other antecedent variables, such as employees' values and organizational values. The replication of this study using other scales, as well as other samples of greater size and diversity may identify similarities and differences, and contribute to new confirmations or conclusions. Undertaking studies with other objects of commitment present in the workplace is also suggested in order to identify their relationships and directions. In this vein, we also suggest to conduct multilevel studies to identify the influence of commitment between different hierarchical levels.

Longitudinal studies would also be extremely relevant for the study and understanding of commitment in order to identify the evolutions and dynamics over time of the different types, levels, and foci of commitment. The combination of this type of studies with the line of research into latent profiles would potentially reveal relevant suggestions for the study and evolution of the understanding of this construct.

Conclusion

The context to which organizations have been exposed has forced permanent organizational change. From changes in the labor market to technological transformation or even to socio-economic conditions, organizations have faced enormous challenges and uncertainties. The need to become more competitive, with a greater capacity for innovation that allows them to mark themselves as distinct in the market has led organizations to position their human capital as an important business driver (Ulrich, 2013; Strack et al., 2014; Beer et al., 2015; Markoulli et al., 2017; Culibrk et al., 2018). In this context, commitment is seen as a topic of great strategic importance, as it contributes not only to retaining talent, but also to enhancing better performance (Culibrk et al., 2018; Bak, 2020; Klein et al., 2020; Lee et al., 2020). It is thus urgent to provide organizations with knowledge that contributes to strengthening their people

management strategies, particularly within the scope of employee commitment, creating conditions for employees to deal with uncertainties and organizational changes and develop interests and commitment bonds in common with leadership and organization (Morrow, 2011; Bergman et al., 2013; Klein, 2013; Meyer et al., 2015).

In this study, the importance of employees' emotional awareness and its influence on organizational commitment and commitment to the leader was evident. It can be posited that employees' emotional maturity, namely identifying, perceiving, and learning from their emotions in the organizational context, provides more favorable conditions for commitment, considering different foci. The relevance of the affective bond with two commitment foci of the study was also noticeable, as it negatively impacted the instrumental bond of continuity organizational commitment in the presence of the affective commitment with the leader.

Data availability statement

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

Author contributions

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

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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.

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Surge in Economic Growth of Pakistan: A Case Study of China Pakistan Economic Corridor

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China Pakistan Economic Corridor (CPEC) is considered a massive investment that can change the economic scenario of Pakistan. The purpose of the study is to examine the contribution to the economic growth of the sectors where CPEC is investing. This research uses time-series data for 31 years to investigate the impact of macro-economic variables like foreign direct investment (FDI), human capital investment (HCI), transport investment, and information communication technology (ICT) on the economic growth of Pakistan. The results of Fully Modified Ordinary Least Square Regression Specification (FMOLS) show a positive nexus between FDI, HCI, and economic growth while economic growth and ICT show a negative relationship. The results for the impact of transportation infrastructure on economic growth are statistically insignificant. This research suggests that an increased focus on building knowledge, expertise, and skillset of human resources will help in reaping the benefits of CPEC's investment. Future researchers can increase the period of the study to ascertain the implicit or explicit impact of CPEC on economic growth. The results also suggest that policymakers and researchers should focus on developing human capital to reap the investment benefits of CPEC.

Keywords: IT infrastructure, FDI, human capital, transport infrastructure, economic growth

INTRODUCTION

The main idea of the economic corridor was initiated from the concept of the transport corridor. When these corridors extend to cover regions, benefits from increased investment and multilateral trade can be witnessed. However, a great deal of effort and infrastructure is required for retaining and improving such transportation networks. Therefore, a transport corridor mainly concentrating on upgraded infrastructure was established as an Economic Corridor (Arif, 2015). One Belt One Road (OBOR) is viewed as China's strategic initiative to play power on the global level. As a part of China's OBOR initiative, the China-Pakistan Economic Corridor (CPEC) is expected to provide financial and economic incentives to Pakistan. The importance of CPEC cannot be denied by both countries as Pakistan needs it to eradicate its economic, social, and energy problems, and it is needed by China because it requires safe and improved trade routes that can be used for oil supply from the Middle East countries to China (Ramay, 2016).

Amidst the crippling economic condition of Pakistan, CPEC is considered an investment that is expected to improve Pakistan's economic growth. CPEC is China's biggest foreign direct investment deal to invest in Pakistan (Shah, 2015). A huge amount is going to be spent on transportation, infrastructure, energy, and industrial zones. FDI is now commonly recognized to bring economic benefits along with technology, foreign exchange, competition, new market access, and capital

(Crespo and Fontoura, 2007). This investment through CPEC makes up almost 20% of Pakistan's Gross domestic product (GDP) (Stevens, 2015). In recent years, particularly from 2013 to 2014, Pakistan has faced a decline in FDI from the US in comparison with 2008; in such a demise, the economic corridor is expected to be an opportunity to increase economic growth (Board of Investment, Government of Pakistan, 2015). Full benefits of CPEC will be achieved by 2030 yet some rail, road, and energy projects are expected to be completed in the next few years (Ali and Faisal, 2017).

According to a report (Andrés et al., 2013) despite huge amounts being invested by the private sector, Pakistan's infrastructure services are always insufficient to fulfill domestic needs. The report suggested increasing spending of GDP on telecommunication, electricity, and transport sectors by 71, 5.5, and 1.23%, respectively, until 2020. Pakistan's economic growth and exports are suffering from a lack of necessary infrastructure. Recently, FDI increased up to 56% in Pakistan mainly due to increased investment in infrastructure through CPEC. The transport and electricity sectors have attracted huge amounts in form of FDI for the projects that are still under construction (Ahmed, 2017). Information and communication technology (ICT) infrastructure plays a substantial role in catalyzing economic growth, especially in today's era of internet and mobile telecommunication (Lee et al., 2014; Rohman and Bohlin, 2014; Pradhan et al., 2016). Technology transfer from developed countries to developing countries is one of the mechanisms, by which FDI contributes to the economic growth of a country (Balasubramanyam et al., 1996). Likewise, Romer (1990) considered FDI as a medium of technological and economic growth. To benefit from the latest technology and ICTs, Van Reenen et al. (2010) recommended that developing countries like Pakistan should invest more in the training and education sector and CPEC is going to invest in this sector to provide Pakistan with the fifth route for its telecommunication traffic.

According to past studies, the researchers recommend investigating the impact of investment in transportation projects at the corridor level (Berechman et al., 2006). However, only increasing seaports and airports can result in traffic congestion on roads if roads are not properly constructed to cater to increased needs (Diaz et al., 2016), therefore, there is a need to investigate the impact of different modes of transportation infrastructure on economic growth. Economic Growth (EG) can be instigated by having a good transportation infrastructure, although it is not mandatory to find a positive impact on EG by all transportation modes (Ding, 2013; Diaz et al., 2016). Similarly, contrasting results between theoretical and empirical studies, showing a positive and negative nexus between FDI and economic growth are found (Ray, 2012; Akalpler and Adil, 2017). This investment is expected to improve the economic condition of Pakistan, as a researcher (Bucci, 2014) claimed that all types of capital investments, namely, human, physical, and innovational capital, lead to economic benefits.

Although CPEC is considered to play a vital role in the economic development of Pakistan, less attention is being paid to its sustainability and the spillover effect of these projects on human capital sustainability. CPEC is a project of

massive investment, and such projects lead toward sustainable development (Zhuang et al., 2021) because infrastructural development affects all economic, social, human capital, and environmental policies and activities. Sustainability attempts to satisfy three major performance indicators, i.e., human, environment, and economic (Di Fabio and Peiroi, 2018). However, the human dimension of sustainability is often ignored (Pfeffer, 2010; Abid et al., 2020).

Since CPEC is a mega-investment project in Pakistan, it has the potential to change the economic scenario of not only the country but also the whole region. It is the need of the hour to investigate the sectors where investment and correct policy measures should be applied to cultivate the real economic benefits behind the CPEC. This research, therefore, is needed to identify which investment among human capital, information technology, transportation, and foreign direct investment be given prime importance. To recommend policies to make Pakistan a hub for foreign investment and to make it reap the benefits of infrastructure, information technology, enhanced human capital investments, and other economic benefits associated with CPEC; this research is much needed. To reap the benefits of this mega project, it needs time to analyze the impact of this investment on factors that will help Pakistan's economy to benefit from it to its fullest potential. Therefore, this research is aimed at having a comprehensive study that can integrate economic changes occurring due to CPEC and provide relevant answers to the role of human capital investment, transport infrastructure, information communication technology, and foreign direct investment on economic growth.

This research attempts to estimate the impact of foreign direct investment, human capital, ICT, and transport infrastructure on Pakistan's economic growth in connection with CPEC by taking data from FY-1985 to FY-2018 using fully modified ordinary least squared (FMOLS). Although CPEC regional integration analysis calls for including other countries in the analysis, the present investigation is limited to the approximation of the implicit impact of CPEC on Pakistan's economy only. The results show a positive significant impact of FDI and human capital development on the economic growth of Pakistan. The benefits of all investments coming through CPEC can be realized if Pakistan develops and train its labor with the required knowledge and skills, whereas a negative relation between ICT and the economic growth of Pakistan is found. The study shows an insignificant relationship between the density of roads and economic growth during the selected time frame enhancing Pakistan's concern to consider the route very carefully if it wants this project to provide expected benefits. This paper comprises six sections: introduction, literature review, methodology, discussions, conclusion and implications, and limitations and future recommendations.

LITERATURE REVIEW

A transport corridor is considered a network within one country or between any two countries to connect economic centers (Khan et al., 2015). OBOR is viewed as China's strategic initiative

to play as power on a global level. This endeavor was started by China's president XI Jinping in 2013 as a part of its economic integration of Eurasia through networks of roads (Aneja, 2016). OBOR is divided into two parts: the maritime Silk Road and Silk Road economic belt. As a part of China's OBOR initiative (McCartney, 2021), CPEC is going to be extremely important for China and Pakistan in competition with territorial and global nations (Ali, 2016).

According to an announcement by a government official, the initial investment in the project was almost \$46 billion, which increased up to \$55 billion at first and later up to \$62 billion (The Express Tribune, 2017). It would take almost \$34 billion to invest in energy projects that are expected to contribute almost 17,000 MW of electricity, whereas the remaining \$12 billion investment would be focused on infrastructure development out of the initial \$46 (Shah, 2015). CPEC is composed of three types of projects based on the duration including short-term projects expected to be completed by 2017, medium-term projects that would be completed by 2025, and long-term projects that are expected to be completed by 2030 (Jawad, 2013).

The CPEC is China's biggest foreign direct investment deal to invest in Pakistan (Shah, 2015). A huge amount is going to be spent on transportation, infrastructure, energy, and industrial zones (Abid and Ashfaq, 2015). The authors (Ali and Asghar, 2016) examined the sectoral impact of FDI on EG by taking the manufacturing, services, and agricultural sectors of Pakistan. Using the standard error model, they concluded that only two sectors, agricultural and manufacturing, have a significant positive impact on the outcome variables, stressing more to use the manufacturing sector as an option to enhance economic growth. Younus et al. (2014) used Two-Stage Least Squares estimation techniques and concluded a positive relation between FDI and the economic growth of Pakistan. Falki (2009) found a negative relation between FDI inflows and the GDP of Pakistan from 1980 to 2006 based on endogenous growth theory. Atique et al. (2004) concluded that FDI plays a significant role in the economic growth of Pakistan particularly under the export regime between 1970 and 2001. The said phenomenon is explained by various studies; Nabi et al. (2022) investigated the impact of ICT, trade, and financial development on economic growth using ARDL, and Majeed et al. (2021) concluded that low-to middle-income countries involved in belt and road project tend to attract larger amounts of FDI, Bahrini and Qaffas (2019) compared the impact of ICT on economic growth between Middle Eastern and Sub-Saharan African countries, Ibrahim and Alagidede (2018) concluded that a larger amount of finance, as well as a high level of per capital income, and human capital is needed for long-run economic growth. Latif et al. (2018) used OLS, FMOLS, and DOLS to examine the contribution of ICT, FDI, and globalization on economic growth, Niebel (2018) compared the impact of ICT on economic growth among developed, developing, and emerging economies. McCartney (2022) stated that owing to a lack of sound industrial policy CPEC may not have a revolutionary impact on Pakistan's economy. McCartney (2021) stressed linking the economic outcome of CPEC with increased economic activity and prosperity in Western China. Javid (2019) used FMOLS to conclude that

the impact of public infrastructure investment on Pakistan's economy is better than the private sector's investment. Khan and Liu (2019) investigated various challenges associated with CPEC including geopolitical environment, political instability, debt, terrorism, and issues with neighboring countries.

The authors (Padilla-Perez and Nogueira, 2016) stated that developing countries have witnessed an increasing trend of FDI in recent years. Both large and small economies have seen a trend of investing abroad by their domestic businesses. The researchers (Akalpler and Adil, 2017) concluded a negative relationship between GDP, gross savings, FDI, and international trade. A financial development index was developed for India in this research, and an investigation of FDI and EG showed a negative relationship both in a long and short period (Hye, 2011), while another study supports a positive relationship between FDI and EG in Pakistan (Chaudhry et al., 2013). In contrast, some studies found no link between FDI and EG, particularly in developing economies (Bende-Nabende et al., 2003); whereas a systemic link was investigated (Azman-Saini et al., 2010) between FDI and EG and concluded that there is no direct effect of FDI on EG.

Both developed and developing countries experienced a boost in their economic growth due to urbanization (Armeanu et al., 2021). Cities developed with investment in energy, transport, and infrastructure sectors attract a large amount of talent because of more economic opportunities. CPEC is expected to provide cooperation in infrastructure, telecommunication, energy, transportation sectors, and socio-economic development (Ahmed and Azam, 2016; Tasneem, 2018), some researchers (Ahmed et al., 2017) are focused on human resource development in the wake of CPEC. Pakistan neglected human resource development for decades (Abbassi and Burdey, 2008; Asrar-ul-Haq, 2015). The researchers (Ahmed et al., 2017) claimed that a proper human resource development policy will help sustain Pakistan's economy. A study (Zia et al., 2018) claimed that CPEC-related project is not only providing employment opportunities but also helps in enhancing the capacity of domestic human resources as well.

The literature supported the relationship between HCI and EG (Bryant and Javalgi, 2016). Glaeser et al. (2004) found that HC is more effective than institutions in generating EG. O'Mahony (2012) found that continuous learning and formal education contributed toward building HC that, in turn, contributed to EG. Olimpia (2013) developed a way to compute the value of HCI in OECD countries and resulted that HCI contributed toward EG despite the different levels of competencies and efficiencies among different countries. CPEC is not only focused on transport infrastructure, telecommunication, and energy infrastructure but also focuses on the necessary physical infrastructure of the whole region (Iqbal et al., 2019a). Out of 46 billion approximately 13.58 billion USD was expected to be spent on infrastructure. As per (Zia et al., 2018) almost 52,000 direct jobs were created under 6 CPEC-related road infrastructure projects. They also negated the myth of the Chinese getting more employment opportunities in CPEC projects. It is argued by authors (Xia et al., 2022) that FDI and gross capital formation lead to human capital development in both the short and long run, subsequently leading to the

economic progression of the country. Jakhon (2021) claimed that there is a close association between the workforce and the economic progress of a country. Abid et al. (2020) claimed that organizations should work on their employee's skillsets to achieve sustainability. It is also stated (Hosan et al., 2022) that any country can benefit from investments in IT or the economy if its employees are more skilled. A decrease in the skilled, motivated, and knowledgeable workforce will result in a slowdown in economic activities (Naeruz et al., 2022).

Roads and transportation infrastructure plays an important role in the economic growth of a country Zhang and Levinson (2007). The researchers (Ali et al., 2018a) used a questionnaire to determine the attitude of local people toward roads and transport infrastructure built under CPEC.

The results indicated a strong socio-economic impact of road infrastructure that in turn affected local people's attitude toward CPEC projects. Pakistan ranks at 105th position in overall infrastructure in 2019 as compared to 93rd in 2018 and 100th in 2017, its ICT adoption has also faced a decline from 127 to 131st position from 2018 to 2019 Haider (2019, Oct 10). The decline in the overall quality of infrastructure has affected adversely its economic competitiveness. Despite serious concerns for the development of infrastructure, this sector was always neglected historically (Meher, 2017). Under CPEC, 3,000 km of networks of roads, railway roads, fiber optics, and oil pipelines are expected to be built (Ali et al., 2018b). Under CPEC, a 100-km road is planned to be built between Karachi and Lahore and an approximately 2,700-km highway between Kashgar to Gwadar. Moreover, many highways will be upgraded to improve Pakistan's connectivity with China and some neighboring countries (Ranjan, 2015). Gwadar port will be used as headquarter for China and a hub for Pakistan to facilitate its trading throughout the world (Mahmood et al., 2020).

This widespread network of infrastructure is going to help the local trader in exports by providing ease of connectivity and saving their costs (Abid and Ashfaq, 2015). Extensive literature is available on the contribution of infrastructure toward economic growth (Estache and Iimi, 2008; Sahoo and Dash, 2009). The USA observed an increased volume of bilateral trade by enhancing its port efficiency (Clark et al., 2004). Improved infrastructure attracts FDI and increases the volume of trade (Edmonds and Fujimura, 2008). The researchers (Jebran et al., 2018) claimed that terms of trade have a positive impact on Pakistan's economy using the ARDL regression model. The reason behind China's prosperity and growth in the last decades is largely attributed to the huge development of its physical infrastructure (Straub, 2008). This supports the argument that the development of infrastructure in Pakistan under CPEC is going to open a new horizon of prosperity, growth, and fortune for its people (Qureshi, 2015).

In this modern era of technology, no government is ignorant of the fact of how ICTs can play a prime role in the dissemination of information that will subsequently create awareness regarding socio-political and ecological issues (Ali, 2018). The use of ICTs has witnessed a steady increase globally, from 400 million users in 2003 to 3.2 billion users in 2015 (ITU, 2015; Iqbal et al., 2019b).

A lot of research has focused on the contribution of IT investment to the economic growth of the countries. The authors (Dedrick et al., 2003) investigated the economic performance of a country in terms of profitability, labor welfare, and economic growth in response to the investment in the information technology sector. Some researchers (Piatkowski, 2004, 2006; Jalava and Pohjola, 2008; Vu, 2011; Ahmed and Ridzuan, 2013) argued that economic growth can be stimulated through ICTs. Besides investing in roads and railways, CPEC is also aimed at strengthening information connectivity in Pakistan. Construction on the Pakistan-China fiber optic project has started in May 2016 to expand the telecommunication structure in Gilgit Baltistan, while focusing on facilitating Pakistan with the 5th route for telecommunication traffic (Economic Times, 2016).

METHODOLOGY

This article attempts to estimate the impact of foreign direct investment, human capital, information and communication technology, and transport infrastructure on Pakistan's economic growth, in connection with CPEC, by taking data from FY-1985 to FY-2018. CPEC regional integration analysis calls for including other countries in the analysis, but the approximation of the implicit impact of CPEC is limited to Pakistan's economy only.

Data

To analyze the relationship between exogenous variables and economic growth we attempt to approximate the determinants of economic growth. GDP per capita in US\$ is used as an endogenous variable. The exogenous variables used for this purpose are foreign direct investment net inflow in US\$ (FDI), human capital (HC), fixed telephone subscription (FTS), and density of roads (DRO). The annual time series data is used covering the period from 1985 to 2018. All relevant variables data is taken from World Development Indicators (WDI) and Penn World Table (PWT). After that, a natural logarithmic transformation was used to normalize the data for further estimation. Sensitivity analysis is done by incorporating other macroeconomic variables, such as central government debt, real interest rate, real effective exchange rate, and the unemployment rate in the model, but the results are robust even without the inclusion of these variables. The variable's description and their specification for the empirical analysis are as follows given in Table 1.

Data Analysis

The time-series data shows the trendy behavior, i.e., deterministic or stochastic. There may be a problem of non-stationarity in time series data and approximated parameters are spurious, and it is essential to eliminate this problem for best linear unbiased estimator (BLUE) parameters. In the first step, the unit root is checked and the stationarity of the variables at I (0), or I (1) is identified. There are enormous unit root tests in econometrics literature for time series data and this analysis checks the stationarity of data through Augmented Dickey and Fuller (1979) and Phillips and Perron (1988) unit root tests.

TABLE 1 | Definition of variables.

Variable	Proxy	Definition	Source
Economic Growth	GDP per capita growth (annual %)	natural log real GDP per capita in US\$	Dhrifi, 2015
Foreign Direct Investment	Foreign Direct Investment (FDI)	Net inflow of foreign direct investment in US\$	Dhrifi, 2015
Human Capital	Human Capital Index (HCI)	Human Capital Index from WDI measures the contribution of education and health toward the productivity of next generation of workers	Ederer et al., 2007
Transportation Infrastructure	Density of Roads (DRO)	Total network of roads divided by total land area of the country	Hong et al., 2011
Information Communication Technology	FTS	Sum of active telephone lines voice over-IP and wireless local loop and fixed payphone	Sridhar and Sridhar, 2007

The results of these tests will help to select the appropriate econometric regression specification.

Unit Root Test

The Augmented Dickey-Fuller test diagnosed the stationarity or non-stationarity of the variable. The general equation with time and trend applied for the ADF test is as follows:

$$\Delta Y_i = \beta_0 + \beta_1 t + \alpha Y_{t-1} + \sum_{t=1}^m \rho_i \Delta Y_{i-1} + \varepsilon_t \dots \dots \quad (1)$$

Whereas ΔY_{i-1} is lag difference term, β_0 is a constant term and t is time trend. To incorporate lag difference in the model, no serial correlation was found among errors ε_t terms. The ADF test used additional lags of the first differenced variable. The Phillips and Perron (1988) test estimates the same equation used for checking the stationary, but they contain the first lag and difference in the unit root regression. The large negative values support accepting the null hypothesis, i.e., the series has a unit root, and the alternative is vice-versa. To check the stationarity variables, Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests are used, and estimated results are presented in the following **Table 2**.

Cointegration

A further step is to investigate common stochastic trends or cointegration among variables because growth is a long-running phenomenon rather than the short run. This research uses Johansen (1988) and Johansen and Juselius (1990), and Engle and Granger (1987) cointegration test. These tests indicate a long-run relationship in time series data. These tests estimate multiple heterogeneous cointegration vectors, i.e., preferred over traditional time series cointegration technique with the null hypothesis that “no cointegration” exists among variables.

Johansen Cointegration Test

As proposed by Johansen (1988) and Johansen and Juselius (1990), there are two test statistics for checking the cointegration vectors in the model. The Johansen test can be seen as a multivariate generalization of the Augmented Dickey-Fuller test. This generalization estimates the linear combinations of variables for unit roots. The estimation procedure of this test is to examine the cointegrating vectors through the Trace test and Eigenvalue. The trace test supports the H_0 , which implies the number of cointegrating vectors equal to (0, 1, 2, 3...). and the Eigen value checks the presence of cointegrated vectors against H_A . Therefore, H_0 for testing numbers of cointegrated vectors can

be set as $H_0 = 0$ against the $H_1 = 1$ and $H_0 = 1$ against the $H_A = 1$, and so on (Khalafalla and Webb, 2001; Dritsakis, 2004). In other words, among five variables there are three variables with unit roots and, at most, two cointegrating vectors exist. This relationship is depicted as follows:

$$\Delta Z_t = \emptyset + \Gamma_1 \Delta Z_{t-1} + \Gamma_2 \Delta Z_{t-2} \dots \dots \dots + \Gamma_{p-1} \Delta Z_{t-p+1} + \Pi Z_{t-1} + \mu_t \dots \dots \dots \quad (2)$$

Engle and Granger Cointegration Test

The cointegration vector is unknown and another way to test the existence of cointegration is the residual-based static regression method, i.e., purposed by Engle and Granger (1987). The obtained residuals are tested for the presence of unit-roots. When the estimated residuals are stationary, cointegration exists among variables. In this case, an appropriate model for long run estimation is an error correction mechanism shown below:

$$\Delta \hat{\mu}_t = \rho \hat{\mu}_{t-1} + \sum_{j=1}^k \beta_j \Delta \hat{\mu}_{t-j} + \varepsilon_t \dots \dots \dots \quad (3)$$

The outcome of the unit root is very important to check before estimating the long-run equation.

Two prominent cointegration tests check the long-run relationship among variables or not at I (1), i.e., Johansen Cointegration and Engle-Granger.

In the Johansen Cointegration test, interpretation is made based on trace statistics and maximum eigenvalue statistics. These values verified the cointegrating vector among variables. In the case of this study, there exists an exclusive long-running association between gross domestic product, foreign direct investment, human capital, fixed telephone subscription, and density of road at “none as well as at most one”. The Johansen Cointegration test estimates multiple equations for checking the long-run relationship, but the Engle-Granger test estimates a single equation. The reported results in **Table 3** confirmed that exogenous, as well endogenous variables, have a long-running relationship at a 5% significance level. In other words, gross domestic product, foreign direct investment, human capital, fixed telephone subscription, and density of road are cointegrated and have a long-running equilibrium. In the literature, multiple regression specifications exist for empirical estimation such as ARDL, VAR, and VECM. However, this analysis uses FMOLS in the empirical estimation because it can be used to estimate long-run coefficients.

Regression Specification

In the real world, every economy tries to grow at a faster rate than earlier, and scholars have been interested in the rate at which the economy is amplified. In this regard, investment in human capital, transport, telecommunication infrastructure, and FDI are being considered a determinant of economic growth for analysis as these are the major areas in which China is investing in Pakistan through CPEC.

The study adopts the Cobb-Douglas production function as follows:

$$Y_t = \alpha_0 X_t^\beta \mu_t \dots \dots \dots (4)$$

Whereas X is a vector of explanatory variables and β is a vector of parameters for period $t = 1, 2, \dots, T$. Taking the log of the above equation and transforming the function as follows we get:

$$y_t = \alpha_0 + \beta' x_t + \mu_t \dots \dots \dots (5)$$

double log-linear regression specifications are as follows:

$$\ln GDP_t = \alpha_0 + \beta_1 \ln FDI_t + \beta_2 \ln HC_t + \beta_3 \ln FTS_t + \beta_4 \ln DRO_t + \mu_t \dots \dots \dots (6)$$

Whereas $\ln GDP$ is the natural log real GDP per capita in US\$ (Hong et al., 2011; Dhrifi, 2015) and $\ln FDI$ is a net inflow of foreign direct investment in US\$ (Mun et al., 2008; Dhrifi, 2015). The variable HC is the human capital index to have smoothly stimulated economic growth (Ederer et al., 2007); whereas $\ln FTS$ fixed telephone subscriptions as a proxy of information and communication technology in the natural log (Sridhar and Sridhar, 2007) and $\ln DRO$ density of roads used as a proxy of transport infrastructure in the natural log (Hong et al., 2011).

Fully Modified Ordinary Least Squared Regression

In the empirical estimation, the presence of cointegration is usually measured through using two regression technique that has been based on the OLS method, i.e., fully modified ordinary least squared (FMOLS) or dynamic ordinary least squared (DOLS). These regression specifications, FMOLS and DOLS, were developed by Phillips and Hansen (1990) and Stock and Watson (1993), respectively. FMOLS adopts the semi-parametric method for the approximation of long-run parameters. This technique gives asymptotically efficient and reliable coefficients even when the sample size is small. Similarly, this technique solves the problem of endogeneity, serial correlation, and heterogeneity in the long-run parameters (Agbola, 2013; Al-Mulali et al., 2014; Bashier and Siam, 2014; Fereidouni and Al-Mulali, 2014). FMOLS estimates a single cointegration equation for all exogenous variables cointegrated with a time trend. Amarawickrama and Hunt (2008) reported that the FMOLS technique makes an appropriate correction to the inference problem in Engel and Granger's cointegration methodology and, hence, the long-run approximated parameters are valid. The FMOLS allows consistent and efficient estimator in the presence of cointegration, and, at the same time, it indicates the problem of nonstationary, as well as simultaneity biases in the heterogeneous cointegrated variables. The estimated parameters from FMOLS

TABLE 2 | Unit root test.

Variables	ADF fisher (chi-square)	PP fisher (chi-square)	Decision
Intercepts with no trends at first difference			
GDP	−5.2277(0.0002)	−5.2277(0.0002)	Stationary
FDI	−4.6056(0.0009)	−4.6541(0.0007)	Stationary
HCI	−5.2835(0.0002)	−5.2901(0.0000)	Stationary
FTS	−3.3021(0.0232)	−3.2549(0.0258)	Stationary
DRO	−2.7366(0.0811)	−2.7447(0.0798)	Stationary

The reported results referred that all appropriate variables have unit root properties and stationary at integrated order 1 (1). The null hypothesis for both ADF fisher and PP fisher is rejected at first difference.

are unbiased due to endogeneity determined in the I (1) and the model can be written as follows:

$$y_t^+ = y_t - \hat{\omega}_{12} \hat{\Omega}_{22}^{-1} \hat{\mu}_{2t} \dots \dots \dots (7)$$

where $\hat{\mu}_{1t}$ is the residual of the cointegration equation estimated by OLS and $\hat{\mu}_{2t}$ are the differenced residual regressors equations or the residual of the differenced regressors equations. The FMOLS estimators and their covariance are given by:

$$\hat{\theta} = \begin{bmatrix} \hat{\beta} \\ \hat{\gamma}_1 \end{bmatrix} = \left[\sum_{t=1}^T z_t z_t' \right]^{-1} \sum_{t=1}^T z_t y_t^+ - T \begin{pmatrix} \hat{\lambda}_{12}^+ \\ 0 \end{pmatrix} \dots \dots (8)$$

$$\text{var}(\hat{\theta}) = \hat{\omega}_{12} \left[\sum_{t=1}^T z_t z_t' \right]^{-1} \hat{\omega}_{12} = \hat{\omega}_{11} - \hat{\omega}_{12} \hat{\Omega}_{22}^{-1} \hat{\omega}_{21} \dots \dots (9)$$

where $\hat{\lambda}_{12}^+ = \hat{\lambda}_{12} - \hat{\omega}_{12} \hat{\Omega}_{22}^{-1} \hat{\Lambda}_{21}$ are called bias correction terms and $z_t = (x_t', d_{1t}')' \hat{\omega}_{12}$ is the estimation of long-run covariance of μ_{1t} conditional on μ_{2t} .

For analysis FMOLS developed by Phillips and Hansen (1990) is used. The advantage of this technique allows for greater flexibility in the presence of heterogeneity in the cointegration vectors. Another advantage lies with the interpretation of the point estimates if cointegrated vectors are not homogenous. This study uses FMOLS as it allows consistent and efficient estimator in the presence of cointegration (Olofin et al., 2019; Peng and Wu, 2020; Srivastava and Talwar, 2020), and, at the same time, it indicates the problem of nonstationary and simultaneity biases in the heterogeneous cointegrated variables.

The following Table 4 shows the long-run parameters from FMOLS. The overall performance of the regression specification is seemingly good because 80% of the variation can be explained and most of the coefficient signs are consistent with the theory, as well as prior empirical studies. Consequently, the t -stat of the explanatory variables shows that all variables are relevant to the model, except the independent variable of the density of road, which has often been found insignificant in some of the studies. The variables are transformed into natural logarithm for normalizing them. The expected sign of FDI is related to prior literature and estimated parameters have low elasticity due to low coefficient value, where one percentage change in FDI can bring a change in gross domestic product up to sixteen percent.

TABLE 3 | Johansen cointegration test.

Johansen cointegration test					
Liner Deterministic Constant Trend			Number of Observation: 32		
Sample Size: 1987-2018			Lags (at first difference) 2		
Trace Test					
Maximum Rank	Parameters	Eigenvalue	t-statistics	5% criticalValue	Probability
None	30	0.85804	100.1180*	69.81889	0.0000
At most 1	39	0.76883	51.31261*	47.85613	0.0228
At most 2	46	0.26671	14.69725	29.79707	0.7993
At most 3	51	0.15296	6.942031	15.49471	0.5844
At most 4	54	0.10566	2.791831	3.841466	0.0947
Maximum Eigenvalue					
Maximum Rank	Parameters	Eigenvalue	Max-Eigen Statistics	5% criticalValue	Probability
None	30	0.85804	48.8053*	33.8768	0.0004
At most 1	39	0.76883	36.6153*	27.5843	0.0027
At most 2	46	0.26671	7.75522	21.1316	0.9181
At most 3	51	0.15296	4.15019	14.2646	0.8432
At most 4	54	0.10566	2.79183	3.84146	0.0947
Engle-Granger Cointegration					
	Test Statistic	1% Critical Value		5% Critical Value	10% Critical Value
z(t)	−5.245	−5.711		−4.881	−4.482

*All variables have a long-run relationship at a 10% significance level.
Cointegration vector exists among variables.

TABLE 4 | Fully modified least squares (FMOLS).

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	0.165849*	0.089518	1.852690	0.0753
HCI	0.2780112***	0.804581	3.455354	0.0019
FTS	-0.482846**	0.239520	-2.015889	0.0543
DRO	0.1041746	1.028182	1.013192	0.3203
INTERCEPT	5.523363	2.764101	1.998250	0.0562
R-squared	0.829026	Mean dependent variance		6.480247
Adjusted R-squared	0.802722	S.D. dependent variance		0.473103
S.E. of regression	0.210133	Sum squared residuals		1.148055
Long-run variance	0.068544			

*, **, and *** show that the coefficients are significant at 10 percent, 5 percent, and 1 percent level of significance Method: Fully Modified Least Squares (FMOLS) Cointegrating equation deterministic: C Long-run covariance estimate (Bartlett kernel, Newey-West fixed bandwidth = 4).

The second predictor variable is very important in the point of explicit economic growth, i.e., investment in human capital. The sign of the human capital coefficient also supports the prior literature as well as the theory. The calculated coefficient has a large value and positive relationship with GDP; whereas one percentage change in HCI can raise the gross domestic product by twenty-seven percent and the slope coefficient is also highly significant. Correspondingly, enormous literature is available on estimating the impact of human capital on economic growth with the help of other proxy variables, such as Gross or Net enrollment ratio, but complete data on the human capital index is easily available, and HCI is used in this analysis (Ederer et al., 2007).

There are numerous proxies available for the approximation of the relationship between economic growth and technology. Prior literature has used different proxies, such as household internet connection, mobile cellular subscription, and individual internet

usage (Iqbal et al., 2019b; Asongu and Odhiambo, 2020). Most of the studies empirically estimate technology as a control variable because they indicated that this indicator has an implicit impact on economic growth. At present, there is no ambiguity that the role of technology rapidly boosts economic growth and this study used fixed telephone subscriptions as a proxy for technology. The estimated coefficient sign is negative and not inimical for economic growth, whereas percentage change in fixed telephone subscriptions significantly deteriorates gross domestic product by forty-eight percent and the slope coefficient is statistically highly significant. The proxy of transport infrastructure is the density of road and researchers used different proxies for this, such as the length of the road, railway carriages, etc. In the prior literature, the researcher verified that role of transport infrastructure plays a vital role in sustainable economic development. So, in other words, transport help to boost implicit economic growth, and the estimated coefficient is positively affiliated in the case of this research. The estimated value seems good but insignificant (Diaz et al., 2016). Economic growth has a multidimensional aspect and a lot of fundamental variables possible in the empirical estimation, but the estimated slope coefficient gives an appropriate outcome due to data constraints in this study being limited on these variables.

The residual diagnostic tests, such as LM, Q-Statistics, Normality Test, Breusch-Pagan-Godfrey, and White Heteroscedasticity tests, describe the intensity of regression specification. The calculated statistics of these tests are favorable for the estimated regression specification. Therefore, the causality among variables is also checked and found that most of the variables have a unidirectional relationship with each other. In the sensitivity analysis, the long-run parameters were also approximated with the help of an error correction

mechanism and no significant change was observed, the reason why estimated coefficients from FMOLS are more reliable.

DISCUSSION

The key objective of this research is to empirically approximate determinants of the economic growth of Pakistan from 1985 to 2018. Enormous literature is available on determining economic growth using different exogenous variables with different proxies, but this research attempts to integrate all major variables in which CPEC is going to invest. It is aimed at estimating whether the sectors in which CPEC is going to invest will empirically help in boosting Pakistan's economy.

Several empirical investigations and theoretical studies have been conducted on FDI and EG (Dhrifi, 2015). The positive impact of FDI on EG is widely recognized in the theoretical literature, but mixed results are prevalent in the empirical investigation over the past 20 years using a simultaneous equation model. Similarly, Hansen and Rand (2006) argued that, theoretically, FDI plays a substantial role in the growth of developing countries. However, literature regarding the negative impact of FDI is also available. Falki (2009) argued that the negative impact of FDI can redress the positive effects of FDI. Another researcher (Lipsey, 2004) argued that the positive effects of FDI are more in just country. Research shows mixed results for each variable's contribution to economic growth. A negative relationship between FDI and economic growth (Hye, 2011; Ray, 2012; Akalpler and Adil, 2017) and a positive nexus between FDI and economic growth (Chaudhry et al., 2013; Kalai and Zghidi, 2019). The results of this study are in line with previous studies (Azman-Saini et al., 2010; Chaudhry et al., 2013; Dhrifi, 2015; Kalai and Zghidi, 2019), showing a positive significant impact of FDI on the economic growth of Pakistan. This result also conforms to the study by Baiashvili and Gattini (2020), claiming an increased effect of FDI on low- to middle-income level countries than on high-income countries.

The result showed a significantly positive impact of human capital on the economic growth of Pakistan. The estimated coefficient of human capital contributes to economic growth by 27%. This is also in accordance with previous research (Bryant and Javalgi, 2016; Maitra, 2016; Musibau et al., 2019; Amna Intisar et al., 2020; Matousek and Tzeremes, 2021). The human capital of any country is one of the strategic factors for enhancing its economic growth. It is claimed (Affandi et al., 2019) that medium- to long-run economic growth can be achieved by investing in human capital as human capital can help in building cognitive skills, which, in turn, enhances the quality of the labor force participating in developing economy in various regions. Among all other variables, human capital seems to contribute more to the economic growth of Pakistan. The benefits of all investments coming through CPEC can be realized if Pakistan develops and trains its labor with the required knowledge and skills. Thus, it can be said that human capital directly affects economic growth by expanding knowledge and skills.

The infrastructure also plays a vital role in the economic development of a country. To approximate the impact of transport and telecommunication infrastructure, this study uses a proxy of the density of roads and ICT, respectively. The appropriate proxy of ICT used in empirical estimation is a fixed telephone subscription. In this era of globalization, ICT is considered one of the prime factors that can contribute to the economic development of countries. However, few studies support this theory. A recent study (Soomro et al., 2022) has shown a positive impact of ICT on economic growth in few countries, whereas negative in others. Previous studies have shown a bidirectional relationship between telecommunication infrastructure and economic growth in high-income countries (Shiu and Lam, 2008; Farhadi et al., 2012), and a unidirectional relationship between these two was found (Datta and Agarwal, 2004; Yousefi, 2011). However, as Pakistan is one of the developing countries that is still striving to enhance its information and communication technology infrastructure, the results of the analysis are in line with the previous literature (Yousefi, 2011), showing negative relation between ICT and the economic growth of Pakistan.

Transportation infrastructure helps in boosting economic activity. There is a time gap between which transportation infrastructure is being built and benefits start to be realized. Therefore, the literature regarding the mixed results of transportation infrastructure on economic growth is also available; an insignificant relationship between transport infrastructure and economic growth (Baum-Snow, 2013), whereas research on the positive impact of transportation infrastructure on economic growth is also available (Zhang et al., 2012; Chatman, 2014; Irshad and Ghafoor, 2022). It is also evident from the literature that transportation infrastructure contributes positively to the economy, but not all modes of transportation contribute equally to the economy (Hong et al., 2011; Diaz et al., 2016). The study shows an insignificant relationship between the density of roads and economic growth during the selected time frame. Although this study is in line with previous studies (Diaz et al., 2016), Pakistan needs to consider the route very carefully if it wants this project to provide the expected benefits.

CONCLUSION AND IMPLICATIONS

It is a widely held view that economic corridors bring several benefits to the region where they are being built. Whether be an increased economic growth or an enhanced living standard, the prosperity of a country or region is related to economic corridors. There is extensive literature available suggesting that new corridors being built in African countries have the potential to change the economic position of these countries. Similarly, as Asia is becoming a trade hub, the development of the economic corridor is necessary to fulfill the increased demands of trade (Hussain, 2017). The CPEC, a sub-project of OBOR, is also serving the same purpose. This research primarily focuses on identifying the factors where China is investing to investigate whether this investment will bring the desired benefits. The

results glorify the importance of developing human capital to reap the benefits of investment coming under CPEC.

The research concludes that among the factors chosen human capital investment contributes the most to the development of the economy of Pakistan. The researchers (Musibau et al., 2019) claim that human capital development may lead countries toward sustainable economic growth. In countries with poorly developed education and capital markets, many qualified citizens may also be unable to find the proper skills to commit to their full potential for economic growth. The development of human capital assures foreign investment that will subsequently help in reducing poverty in developing countries and is prioritized by many researchers. CPEC is going to revolutionize the business sector of Pakistan as bilateral trade between Pakistan and China will increase. As indicated by our results, if Pakistan's local business community wants to reap the benefits of CPEC, they must work on developing the human capital. It is claimed (Abid et al., 2020) that organizations can achieve sustainability by focusing on factors affecting long-term growth and by developing skillset and knowledge base of their human capital to deal with and adapting changes. These skillset enhances their make them optimistic which in turn increases their capabilities to thrive at work leading toward good human capital (Abid et al., 2021) and hence, economic growth of the country. One important aspect of the skillset of human capital, i.e., leadership, can also work wonders to utilize the benefits of CPEC to its fullest potential because ethical leadership builds the trust of employees resulting in improved work engagement and better productivity at workplace (Ilyas et al., 2020). Given the importance of human capital in reaping the benefits of CPEC investment, it is recommended to pay attention to developing a knowledge base, skillset, and fair perception of employees as it can result in subjective well-being of people (Abid et al., 2019, 2020).

One of the prime areas of investment is IT infrastructure. The role of IT investment in the economic growth of the countries cannot be denied. Although these results of the analysis show a negative relationship between ICT and Economic growth, which is in line with Farhadi et al. (2012) who states that countries with low-income levels have a weaker relationship between ICT and economic growth. One of the reasons for this relationship would be the use of the proxy as data is not available on the latest proxies.

A positive nexus between FDI and the economic growth of Pakistan during the chosen period is found, as FDI is attracted more to open economies with fewer rules and regulations and having a skilled workforce and opportunities to grow. The inflow of FDI is beneficial for the host country in terms of creating employment opportunities, creating a competitive market, raising exports, and advances in technology. This is going to be a positive contributor to the economy of Pakistan as CPEC is expected to bring massive investments to Pakistan and Pakistan would be ready to benefit from its spillover effects in many more years to come.

Quite contrary to many studies focusing more on the development of transport infrastructure for better economic growth, these results show an insignificant relationship between

transport infrastructure and economic growth. This is largely due to the spatial effect of such investments and time lags between when these investments were made and when one country starts realizing the benefits associated with the investment. These results are also in line with Berechman et al. (2006) who claimed that without consideration of the time lag between when transport investments were made and the realization of benefits, the results obtained can have an element of bias in it. Therefore, Pakistan must wait for some time in order to gauge the empirical effects of transportation infrastructure on economic growth.

As CPEC is expected to enhance imports and exports of the country and specific products of regions, particularly in route of CPEC, private investors would benefit from the study in identifying those sectors whose imports and exports would benefit them the most and have an impact on the overall economy. This research will be useful for researchers to conduct a similar type of research at corridors level projects all around the world like OBOR. Human capital investment can transform a developing country into a productive population, therefore, policy makers are required to emphasize investment in education.

LIMITATIONS AND FUTURE RECOMMENDATIONS

One of the limitations is the limited time span for study. This study can be replicated with an increased time span. Future studies can use these proxies with more reliable and complete data for selected variables for the increased time span. This research can be replicated with other proxies, or the use of indexes already developed. The study can include more variables like gross capital formation, trade openness, and exchange rates. It is yet to decide whether CPEC is going to have an implicit effect or an explicit one. To get a clear answer, the research can be done by increasing the period to gauge real times effects of CPEC-related investment. The recent economic scenario of the world has changed owing to the COVID-19 pandemic. Future studies may attempt to empirically investigate the impact of COVID-19 on CPEC investments and economic growth. The research can be extended to include the sustainability of the workforce, environment, and economic progression in the wake of CPEC before, during, and after COVID-19.

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/s.

AUTHOR CONTRIBUTIONS

MF conceived the idea, collected the data, and prepared writeup of the study. Z-u-R performed analysis and written the methodology part. MS refined the writeup of the study and re-checked flow of the study. All authors contributed significantly for this study.

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The psychological concept of social sustainability in the workplace from the perspective of sustainable goals: A systematic review

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Unlike environmental sustainability, social sustainability in the workplace is a relatively new concept that is still searching for its own definition and explanation. Therefore, in this paper, we systematically reviewed and critically evaluated recent research on this topic. In doing so, we identified important constructs that help us better define and understand the phenomenon of social sustainability in the workplace. We focused on articles from 2016 to 2022 with content related to three Sustainable Development Goals (SDGs), namely health and wellbeing (SDG-3), gender equality (SDG-5), and decent work (SDG-8). Given the harrowing events of the past 2 years, triggered by the COVID-19 pandemic and the global impact of the war in Ukraine, we also wanted to learn whether other categories, such as security (SDG-11) and peace (SDG-16), are embedded in the concept of social sustainability at work. The articles we studied were found through EBSCOhost, specifically in the Academic Search Complete, Business Source Premier, APA PsycInfo, SocINDEX with Full Text, and GreenFILE databases. We selected 67 articles and organized them according to the four levels of research and practice in work and organizational psychology. In reviewing the literature, we identified several constructs that can be classified at four levels of interest in work and organizational psychology. At the level focused on the job/work, we identified two main topics: (i) sustainable job/work characteristics and (ii) sustainable job (re)design. At the people-focused level, we identified the following topics: (i) pro-sustainable self-system, (ii) pro-sustainable job attitudes and motivation, (iii) sustainability work environment perceptions and other mediating mechanisms, and (iv) sustainable job behavior. The organization-focused level includes (i) organizations as human systems and (ii) pro-sustainable organizational policies and practices. The last (society-focused) level is defined by two main topics: (i) understanding society as a human system and (ii) pro-social mechanisms. In the discussion, we categorized specific constructs identified within the described focus levels into the theoretical model describing the psychological concept of social sustainability in the workplace from the perspective of sustainable goals.

KEYWORDS

social sustainability, workplace, sustainable developmental goals, psychology, systematic review

Introduction

The events of the last 2 years have dramatically advanced the threat to the concept of a sustainable society. The pandemic spread of the virus has thoroughly exhausted us, including psychologically (e.g., Frounfelker et al., 2022; Robinson et al., 2022; Solmi et al., 2022). In mid-February 2022, the pandemic finally ebbed somewhat, but on February 24, 2022, the world was inundated with news of the start of war between Russia and Ukraine. We were indirectly and directly involved in the war events, which caused significantly more worries and threats every day (APA, 2022). The first public opinion survey (Valicon, 2022) shows that the level of concern and pessimism (especially in Slovenia and Croatia) is higher than during the pandemic. Therefore, the concepts associated with the notion of sustainability seem like nice but once again distant wishes. Why is this so? The concepts like sustainability, sustainable development, social sustainability, etc. come from the core of humanity. Let us remember. In 1987, Norwegian politician Gro Harlem Brundtland (World Commission on Environment Development-WCED, 1987) introduced the concept of sustainable development, defining it as humanity's ability to "...meet the needs of present-day humanity without compromising the ability of future generations to meet their own needs" (World Commission on Environment Development-WCED, 1987, p. 16). This definition makes it clear that it is people who are at the center of creating and understanding the phenomenon of sustainability. It is we, the people, on whom the future of ourselves and our planet depends.

The authors of this article believe that this is precisely why it is important to explore and draw attention to the importance of sustainable development and sustainable society. We believe that in the ideas of sustainable development and social sustainability, it is possible to find the anchor points of human existence where people feel sufficiently secure and stable so that we, as individuals and as a society, pursue the goal of sustainability. One such anchor point is work and the sustainability it brings to the workplace. Blewitt defines sustainable development as "the idea that the future should be a better, healthier place than the present" (Blewitt, 2008, p. ix), and we connect this to the realm of work and believe that the future should include a "better, healthier workplace than the present." Our main question can therefore be formulated as follows: How can social sustainability be developed in the workplace in the current turbulent times? Here we focus on the psychological dimensions of finding an answer. In what follows, we introduce the basic areas of sustainability, focusing on social sustainability. We then address the understanding of sustainability in the workplace (SSWP), and in the main section we develop a method for systematic review and interpretation of the results obtained.

Since Adams (2006) formulated the model of three interlocking circles of sustainability that are in balance with each other in his book "The future of sustainability: re-thinking environment and development in the twenty-first century," this model has been used in numerous research projects on sustainability. Adams assumes three domains or intersecting circles of sustainability: environmental, economic, and social. Environmental sustainability refers to concern for the environment, rational use of natural resources and environmental management, and pollution prevention. Its goal is to find solutions that ensure that current interactions with the environment are carried out according to the principle of keeping the environment as natural as possible while constantly striving for ideal conditions. Economic sustainability includes concern for profit, business performance and growth. Its goal is to contribute to economic development, preservation, and creation of new jobs.

These two areas are quite well-defined and researched. However, the situation is different with social sustainability (SS), which still seems to be in search of its own definition and explanation. This is probably why "social" has been integrated late into sustainable development debates (Eizenberg and Jabareen, 2017). Different authors have defined SS differently, although their definitions agree on the point that SS is a cornerstone for understanding overall sustainability and sustainable development. Polese and Stren (2000), for example, define SS as "development that is compatible with the harmonious development of civil society and promotes an environment that fosters compatible coexistence among culturally and socially diverse groups while fostering social inclusion, with improvements in the quality of life for all segments of the population" (2000, p. 229). Colantonio (2010) defines it as a condition and process that improves the quality of life of a community. Other authors (Valdés-Vásquez and Klotz, 2013; Mostafa and El-Gohary, 2014) associate SS with the adequate distribution of quality of life in the present and in the future. Grum and Kobal Grum (2020) outline that "researchers agree that without socially oriented practices, sustainability efforts will be undermined because there are too many gaps in practice and theory" (Grum and Kobal Grum, 2020, p. 788).

Researchers also disagree on the structure of SS. Eizenberg and Jabareen (2017) recognize at least three components of SS: social capital, human capital, and quality of life. On this basis, sustainable social development meets all people's needs and leads to their satisfaction, happiness, security, health, and quality of life. Australian psychologists Magee et al. (2012) divide SS into four categories: economic, ecological, political, and cultural, again suggesting a slightly different understanding of SS. They divide each of these categories into three subcategories: confidence, concern, and optimism about the future. On this basis, they also developed the Social Sustainability Survey (Magee et al., 2012), which measures these four categories. Correlations with domains of wellbeing measured by the

Australian Unity Wellbeing Index (Cummins et al., 2003) were found to be relatively high for all six domains: community satisfaction, environment, personal relationships, workplace, safety, and general satisfaction. In this way, life satisfaction was confirmed as an important component of SS (e.g., Eizenberg and Jabareen, 2017).

In 2015 (The Global Goals, 2022b), United Nations member states defined 17 Sustainable Development Goals (SDGs) and presented them in a General Assembly resolution. The plan is for us as a society to meet these goals by 2030. Among the goals are three that relate directly to SSWP (Contreras et al., 2022): SDG-3: Ensure healthy lives and promote wellbeing for all at all ages; SDG-5: Achieve gender equality and empower all women and girls; SDG-8: Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all. Based on their assumptions, the same three SDGs were utilized as the baseline for our scientific review.

Employee health and wellbeing, which relate to SDG-3, are critical to both the growth of the businesses in which employees work and to economic growth and development in general. The fact that wellbeing is closely linked to SSWP is also supported by the psychological research (Magee et al., 2012). When we place SDG-3 in the context of world events over the past 2 years, we see that researchers are addressing them more urgently. Specifically related to occupational health and wellbeing, much research was conducted during the COVID-19 pandemic that has helped to enrich our knowledge of the importance of occupational health and wellbeing (e.g., Kniffin et al., 2021; Shao et al., 2021; Vu et al., 2022).

SDG-5, which addresses gender equality, is becoming increasingly important in the workplace. Research clearly shows that there is no difference in work performance between men and women. As leaders, women can create a more positive work climate and show more empathy toward subordinates than their male counterparts (e.g., Regan et al., 2018; Saleem and Ajmal, 2018). Nevertheless, research also shows that as a society we are still far from full gender equality. On average, women are still paid less than men for the same work, with wages 10–30 percent lower than men, while men still predominate in leadership positions (Albuquerque et al., 2020; The Global Goals, 2022a). Discrimination against individuals with non-binary gender identities is even greater, and they are still at risk of losing their jobs or not getting a job at all if they disclose their gender identity. Research on this topic still lags, as there is relatively little published research on this topic compared to other vulnerable groups (e.g., Goldberg et al., 2021).

SDG-8 focuses on decent work, which is closely linked to SSWP and in this way intertwined with the goals related to wellbeing and gender equality mentioned earlier. Work environments, public, private, non-governmental, service and production organizations are the fundamental building blocks of sustainable development in society, as they both ensure the achievement of the SDGs in work environments where

individuals spend most of their time in their active working lives and have a direct impact on the achievement of the SDGs in the broader society through their processes and structures. The psychological concept of decent work (Blustein et al., 2016; Duffy et al., 2016) at the individual level explains the role of decent work in a person's mental and physical health. As McWha-Hermann et al. (2021) note, a living wage is a key element of decent work and a decent life. However, it is primarily the complexity of the concepts that work and organizational psychology (WOP) deals with (individual, teams, organization, individual and organization in the broader social environment) that can pose a problem when studying SS. Indeed, the gap between micro and macro levels is one of the fundamental features of research on the social responsibility construct (Glavas, 2016). Some methods that are better suited for studying concepts directly related to social justice, such as intersectionality (Grzanka et al., 2020), are often less established in psychological science (Grzanka et al., 2020). For this very reason, the question of to what extent, with what focus, and how WOP can contribute to the SS of organizations and society in the future is a central question that we attempt to answer in this literature review.

In the last 2 years, the sense of worry, threat, and suffering related to the consequences of the pandemic COVID-19 and the war in Ukraine has greatly increased. As a result, people, especially Europeans, are also afraid of a general economic turnaround, job losses and poverty. The issues of peace and security are becoming increasingly important. For this reason, we have formulated a model of SS in the workplace based on the SDGs (Figure 1), which, considering the COVID-19 pandemic and the fear of war in Ukraine, we believe includes two additional SDGs that we need to examine very closely in the context of workplace sustainability in the coming decade. These are (The Global Goals, 2022b): SDG-11: Make cities and human settlements inclusive, safe, resilient, and sustainable, and SDG-16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels). So, there are two reasons for choosing the SDG-3, SDG-5, SDG-8, SDG-11 and SDG-16: a) the starting points set by Contreras et al. (2022) and the method of observing the global changes in the last 3 years with the emergence of COVID-19 and the war in Ukraine, which also affected the level of SSWP.

In summary, the insufficient involvement of psychological science in the study of multilevel constructs in SSWP (Blustein et al., 2016; Duffy et al., 2016; Grzanka et al., 2020) in the face of simultaneous global social situations that have changed and are changing existing concepts of work and life, has led us to the fundamental goal of this work to determine how SSWP is expressed through SDG-3, SDG-5, and SDG-8 and, given the emerging global situation, through SDG-11 and SDG-16. Figure 1 shows the theoretical framework for our study.

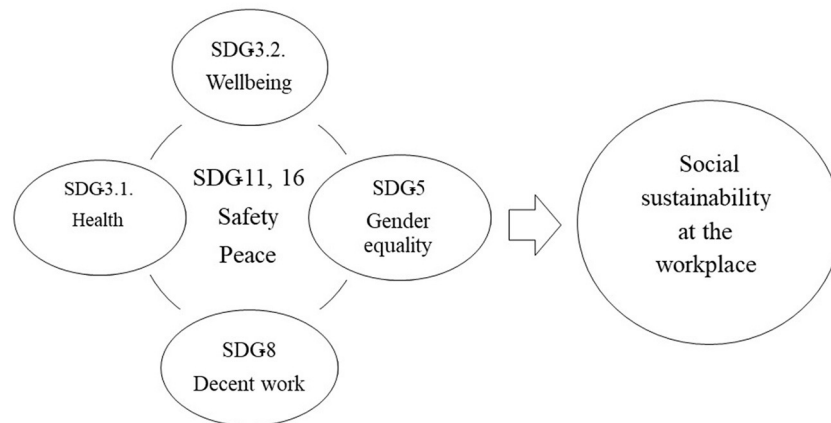


FIGURE 1
Hypothetical model of key sustainable development goals for social sustainability in the workplace at the start of the new decade.

Based on the problem of the study and hypothetical model presented in Figure 1, we systematically reviewed the literature that addresses the SS concept in the context of the research and practice of WOP. The objectives of our study were the following:

- Identify key themes or constructs through which WOP contributes to understanding and ensuring SS.
- Identify what does the present mean for the advancement of the concept of SS and the role that psychology, particularly WOP, plays in it?
- To describe what role did or do the current conditions of pandemic and social insecurity play in describing and interpreting the factors and mechanisms for achieving the SDGs (SDG 3, 5, 8, 11, 16).

By reviewing the literature, we aimed to provide a general overview of the role of WOP in the study and application of SS concepts and to provide theoretical guidance for the further development of psychological science related to SS development and work.

Materials and methods

Search protocol

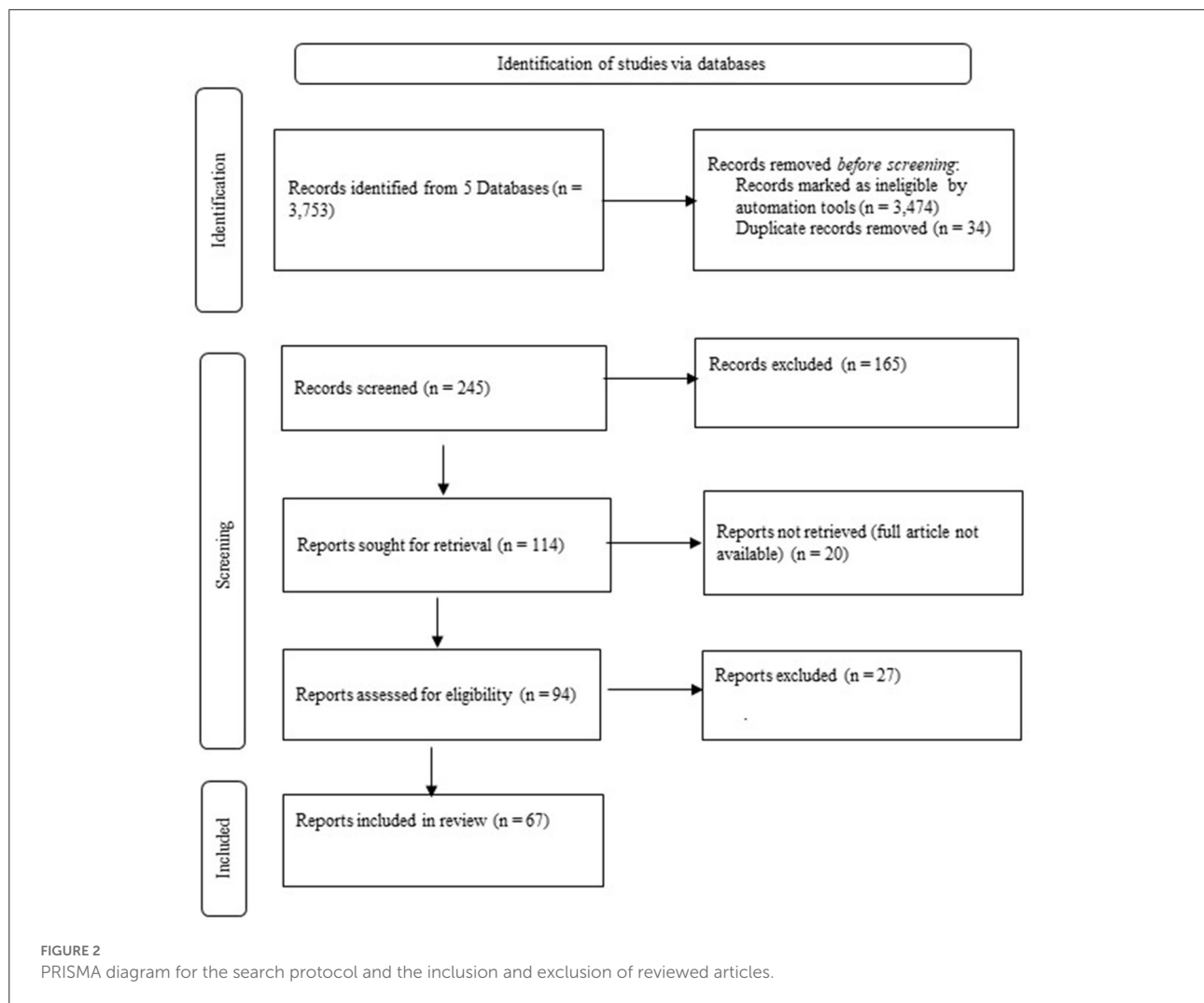
We conducted the literature search in accordance with the PRISMA protocol (Moher et al., 2009; Page et al., 2021). We searched for scholarly articles in the EBSCOhost databases, specifically Academic Search Complete, Business Source Premier, APA PsycInfo, SocINDEX with Full Text, and GreenFILE using the search term (with no restriction on where the words were found) “social sustainability AND work*.” The searches were conducted in March 2022.

Before determining the final search term, we familiarized ourselves with the results of several other search terms [“social sustainability”; “social sustainability AND business”; “social sustainability AND workplace”; “social sustainability and (work psychology OR industrial psychology OR organizational psychology,” “social sustainability AND psychology”)] that proved to be too broad (“social sustainability”; “social sustainability AND psychology”) or too narrow [“social sustainability and (work psychology OR industrial psychology OR organizational psychology”)] to provide insight into the concept of social sustainability in the context of WOP and the contribution of this psychological discipline to achieving the SS goals. A review of hits using the final search term “social sustainability AND work*” was confirmed to be stable, as hits obtained using narrower search terms [e.g., “social sustainability and (work psychology OR industrial psychology OR organizational psychology”)] were also obtained using the final search term used, while hits used as the basis for creating a literature review were also obtained using broader search terms (e.g., “social sustainability” AND “psychology”).

Inclusion and exclusion criteria

The first search (with no search criteria at all) using the search term “social sustainability AND work*” yielded 3,753 works. In the next step, we narrowed the search using automated tools based on the following criteria:

Time: We covered the period of the last full 5 years, from January 2016 to February 2022, since 2016 was the publication year of the review article which focuses on the social responsibility construct and organizational psychology (Glavas, 2016). Moreover, as we noted in the introduction, current behavior, practices, norms, and values in society have been



challenged in recent years due to the global crisis emanating from the COVID-19 pandemic.

- Type: works published in academic journals.
- Accessibility: fully accessible articles.
- Quality: peer-reviewed articles.
- Language: articles published in English.

Data extraction

According to the automatically determined criteria, 279 works remained. Of these, the system removed 34 works as exact duplicates. What remained were 245 articles, which we can divide methodologically into review articles and original scientific articles reporting research conducted using quantitative or qualitative methods, and theoretical articles. In the second stage, we screened the 245 articles by title, abstract, and topic indicators. In the first stage of the screening

process, we excluded 165 papers. The reasons for exclusion were as follows:

- Type of scientific article (editorials).
- Not relevant age group (not including working population).
- Exclusively dealing with economic or environmental aspects (energy sources, environmental analysis, ecosystems, environmental management), urban planning, aspects of public administration in communities, supply chain management.
- Too general theoretical works.
- Duplicates that the system did not automatically exclude.

We attempted to obtain the remaining 114 articles in their entirety, but found that 20 articles were inaccessible, while among the other 94 articles were 27 whose content did not fit the objectives and research questions of the review. We therefore included 67 articles in the literature review, which are presented in the Results chapter (Tables 2–5). The entire

process of the literature search is shown in the PRISMA diagram in Figure 2.

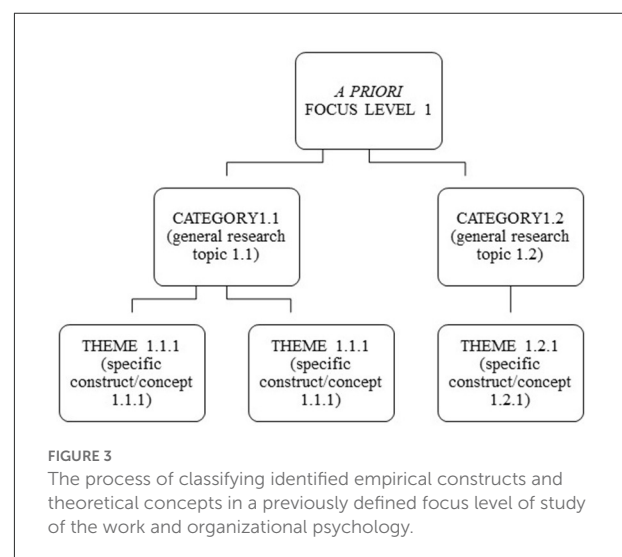
We conducted the systematic review of the articles using a combination of deductive and inductive approaches. We started from the level of focus on the WOP as described in classical textbooks in Europe and the United States (Landy and Conte, 2013; Chmiel et al., 2017). Consistent with this, we defined four content levels of literature review, namely topics focused on work (job-focused), people at work and in work organizations (people-focused), the organization as a whole and its relationships within and outside the organization (organization-focused), and society (society-focused). The first three levels are consistent with the naming of the chapters in the (Chmiel et al., 2017) monograph, and the last one was added due to current issues in WOP (e.g., multiculturalism, Landy and Conte, 2013) and the role of WOP in society. Table 1 in the Results chapter shows the identified categories within each a priori defined focus level of WOP (work, people, organization, and society). We defined the first level of identified themes based on classical constructs that have been researched and applied in practice in WOP and that are also presented in traditional textbooks on WOP (e.g., Landy and Conte, 2013; Chmiel et al., 2017). We have called them categories because they represent general Research Topics in the study and interpretation of SS. The second level is formed by the “conceptual themes” (Vaismoradi et al., 2016, p. 104), i.e., the constructs we identify in relation to SS based on specific variables or theoretical concepts discussed in the identified articles. The review of the literature was therefore based on a priori levels of focus from WOP. We described the specific focus level based on empirical constructs and theoretical concepts we identified in the review of the literature. The identified empirical constructs or theoretical concepts were categorized into two levels, namely the categories (general Research Topics) and the specific constructs or themes (subordinate level) in relation to SS. Figure 3 shows the process of classifying the identified constructs and theoretical concepts.

The authors conducted the entire process of reviewing the identified work in parallel, with intermediate coordination. This involved not only harmonizing the identified constructs and concept networks, but also interpreting them from the broader focus of psychological science, as the authors work in different psychological disciplines (personality psychology and WOP).

In the next chapter, the results of the literature review in accordance with the research questions are presented. The discussion includes a synthesis of the main findings from the literature review and a look into the future or a description of the future role of the WOP and the science of psychology in general in SS. The conclusions summarize all of this and point out the limitations of this literature review.

TABLE 1 A priori focus levels of the review and identified categories (Research Topics).

Focus level of research and practice in the WOP	Identified categories (Research Topics)
Job/work-focused	Sustainable job/work characteristics Sustainable job (re)design
People-focused	Pro-sustainable self-system Pro-sustainable job attitudes and motivation Sustainability work environment perceptions and other mediating mechanisms Sustainable job behavior
Organization-focused	Organizations as human systems Pro-sustainable policies and practices
Society-focused	Societies as human systems Pro-social mechanisms



Results

Table 1 presents the a priori defined focus areas of study and practice of WOP with the topics (categories) that we identified and named within each focus level according to the defined subordinate themes and constructs. Due to the volume of second-level constructs (themes) and citations, the themes for specific focus levels of WOP are presented in individual tables (Tables 2–5).

The review of the literature was guided by the basic focus of a multi-layered psychological discipline and thus covers four levels: the work, the individual, the organization, and the broader social system in which the work is performed

and the organization functions. On the job/work level we have identified two main Research Topics: (i) sustainable job/work characteristics and (ii) sustainable job (re)design. At the people level, we identified four topics of study: (i) pro-sustainable self-system, (ii) pro-sustainable job attitudes and motivation, (iii) sustainability work environment perceptions and other mediating mechanisms, and (iv) sustainable job behavior. The level of organization includes two fields, (i) organizations as human systems, which bring together very different constructs from the social sciences that describe and interpret the organization through the primary perspective of the organization as a human system, and (ii) pro-sustainable organizational policies and practices, which bring together constructs related to the management of the organization and people that can contribute to SS. The final level, the level of society, is not a primary level of inquiry in the WOP but emphasizes the role of the broader social context in the functioning of organizations and individuals as their members, especially in today's world, so we have defined it a priori as an independent level of focus. This level, like the organizational level, is defined by two main topics: (i) understanding society as a human system and (ii) pro-social mechanisms. In contrast to the other a priori levels (job, people, organization), the constructs and concepts described and interpreted empirically or theoretically at the society level focus on SS as a construct that describes quality of life efforts through the prism of social mechanisms to ensure equity and fairness, without any obvious link to the other dimensions of sustainability. For this reason, we called the second domain of the study pro-social mechanisms at the level of society rather than pro-sustainability as we did at the level of organization, individual, and work.

Job/work-focused fields of study and constructs

Table 2 shows the fields of study and defining constructs identified in the review of the literature, as well as the sources identified in the review of the literature that address the constructs at the level of work or job.

The first field of interest in WOP is work: its characteristics defined by job duties, tasks, responsibilities, and authority; work environment; work equipment and tools; social relationships at work; organization of work in terms of schedules, work hours, nature of employment, etc. The review of the literature revealed the following key constructs or topics relating to the characteristics of contemporary work in the context of the concept of SS: decent work, meaningful work, and sustainable work.

The issue of working conditions that ensure the basic dignity of individuals in the specific work environment or in the broader society, also compared to the concept of modern

slavery (Benstead et al., 2018; Trautrimis et al., 2020) and precarity (Forbes-Mewett et al., 2020), is one of the fundamental goals of SS, as defined in SDG-5. Conigliaro (2021) defines decent work as the main element of SS, as SS is a balance between “the right to pursue personal fulfillment and to be protected as a human being” (p. 142). In line with the definition of decent work, Conigliaro (2021, p. 148) defines five dimensions of decent work and their indicators: (i) inequality, (ii) work conditions, (iii) vulnerabilities, (iv) social protection, (v) resilience factors. Decent work is a general concept that refers to the right to work based on equality, fairness, decent working conditions and the satisfaction of individuals' needs, such as the need for meaningful work. The construct of work-family balance is also linked to the construct of decent work, as noted by Mushfiqu et al. (2018). Mushfiqu et al. (2018) define work-family balance as “the interface of work and family and the consequences of these two variables on commitment to work, job satisfaction, family roles and social related themes” (p. 870). A study conducted among female physicians in Nigeria showed that their workload, demanding work and work environment, unsupportive relationships within that environment, and specific expectations related to traditional gender roles reduce female physicians' ability to balance work and family, and thus their overall satisfaction (Mushfiqu et al., 2018).

Meaningful work refers to the character of work that combines an individual's efforts with benefits to others (e.g., Guerci et al., 2019; Rööös et al., 2019; Sun et al., 2019; Sajjad and Shahbaz, 2020). Rööös et al. (2019) investigated how sustainability assessment models contribute to the social status of livestock farmers in Sweden. Meaningful work was found to be one of the components of work characteristics (along with good financial status, comparable standard of living, stress management, reasonable working hours) associated with farmer wellbeing. Meaningful work is a mediating construct between the assessment of the harmony of an organization's social mission and the individual's concept of self, which is especially important for workers who chose to work in social enterprises (Sun et al., 2019). Working in an environment that emphasizes SS rather than just the economic component inherently increases workers' perceptions of the importance of work, which in turn promotes positive attitudes toward work (Guerci et al., 2019). Decent work and meaningful work are interrelated constructs. Decent work specifically includes the elements (indicators) of job security, decent working conditions, equality, social security, and ensuring personal development. All these elements of decent work represent sources of personal resilience to possible factors of the labor market and social systems over which the individual has no control (Mushfiqu et al., 2018; Conigliaro, 2021), thus making a lasting contribution to an individual's positive career. Meaningful work, on the other hand, is a concept associated in the reviewed literature with the characteristics of work and organizational context that convey to

TABLE 2 Job/work-focused Research Topics and constructs.

Research Topics identified in the review of the literature (categories)	Constructs identified in the review of the literature (themes)	Sources
Sustainable job/work characteristics	Decent work Meaningful work Sustainable work	Benstead et al. (2018), Mushfiqur et al. (2018), Neumann et al. (2018), Guerci et al. (2019), Rööös et al. (2019), Sun et al. (2019), Alexander et al. (2020), Forbes-Mewett et al. (2020), Sajjad and Shahbaz (2020), Trautrimis et al. (2020), Conigliaro (2021), Duval et al. (2021), Harlin and Berglund (2021)
Sustainable job/work (re)design	Ergonomics Sustainable certification systems Innovation through new organizational processes and professional roles	Andriolo et al. (2016), Lake et al. (2016), Schiavo (2016), Neumann et al. (2018), Papadopoulos (2019), Rööös et al. (2019), Alexander et al. (2020), Lombard and Viviers (2020), Medugorac et al. (2020), Duval et al. (2021), Harlin and Berglund (2021)

the worker that the goals and effects of the individual's work and the functioning of the organization are aligned with the overall social good (Sun et al., 2019).

The construct of sustainable work is linked to the construct of decent and meaningful work. For example, the adoption of agri-environmental practices had a significant impact on the work characteristics and working conditions of livestock farmers in France (Duval et al., 2021). Although improving working conditions was rarely the main motivation for farmers to adopt agri-environmental practices, they played an important role in improving the quality of working conditions. Sustainable work encompasses all three dimensions of sustainability: economic, environmental, and social (Harlin and Berglund, 2021). Harlin and Berglund conducted a longitudinal study of how new (start-up) companies address the challenges of work and ensuring SS. The goals of ensuring sustainable work were those that drove the new company to focus on innovative approaches to rapid decision making while ensuring decent work that was aligned with individual development and environmental sustainability. This insight leads directly to the next thematic set - sustainable work (re)design.

Specific certification schemes focused on assessing and recognizing the sustainable orientation of organizations are not necessarily a sufficient condition for ensuring the characteristics of work that we can describe with the construct of decent and sustainable work, as such approaches are mainly focused on compliance with labor law (Alexander et al., 2020). Such compliance is an important but insufficient measure to ensure all elements of decent and sustainable work. Similarly, it is probably not sufficient to implement ergonomic measures, although these are particularly important in industry, which is an environment with health risks due to work processes (Andriolo et al., 2016). Innovation in terms of new approaches to implementing basic processes, as demonstrated by practices in agriculture (Rööös et al., 2019; Duval et al., 2021) and in start-up companies (Harlin

and Berglund, 2021), can contribute to a more comprehensive approach in ensuring elements of SS in the workplace. Innovation can also enter companies and organizations in the form of new job descriptions and job roles. Professional roles are developed by people during their education as they acquire knowledge, skills, competencies, approaches to work, and attitudes toward work. Although this construct is closely related to the societal level (in Table 5 Society-focused: Education), these roles, especially in today's world where education is more focused on the applicability of knowledge, play an important role in changing the characteristics of work by aligning occupational roles, values, views, and goals of work with all three dimensions of sustainability (Medugorac et al., 2020) and fostering sensitivity to individuals' local community (Lake et al., 2016).

At the level of work and work environment characteristics, the reviewed articles focus on SS through an interpretation of constructs such as decent work, meaningful work, and sustainable work, and through the identification of approaches to redesign work so that such work and work environment characteristics are also achieved (ergonomic solutions, implementation of certification systems that influence work and work environment characteristics, innovations), and on the role of educational institutions and the education system in setting the work standards that guarantee a sustainable orientation through the design of professional roles. The review also shows that the majority of the presented articles within the job/work focus interpret SS through the perspective of social rights and equality; some (e.g., Rööös et al., 2019; Duval et al., 2021; Harlin and Berglund, 2021) take a broader approach to the construct of SS as "sustainable social relations" (Magee et al., 2012, p. 245), encompassing economic, environmental, cultural, and political relations as interconnected aspects of sustainability that cannot be reduced to a single dimension of sustainability.

People-focused constructs

The next level of study is people (Chmiel et al., 2017). Within this level, we identified constructs through a review of the literature that we categorized into four categories (see Table 3): pro-sustainable self-system, pro-sustainable job attitudes and motivation, sustainability work environment perceptions and other mediating mechanisms, and sustainable job behavior.

In relation to SS and work, current research examines the following constructs located in the individual's self-system: personality, particularly personality traits (Kim et al., 2017; Anwar and Clauß, 2021), which are associated with various aspects of SS, and also constructs that are more dynamic and dependent on context, as opposed to more stable personality traits, such as moral reflectiveness (Kim et al., 2017), self-awareness (Raniga, 2021), mindfulness and spirituality (Sajjad and Shahbaz, 2020), sense of calling (Wahid and Mustamil, 2017). Anwar and Clauß (2021) identified the important role of basic personality traits of business owners, except extroversion, in relation to the SS of businesses, through the individual's ability to effectively use the existing organizational resources (Anwar and Clauß, 2021). Conscientiousness and moral reflectiveness are associated with voluntary green behavior among employees and their managers (Kim et al., 2017). Sajjad and Shahbaz (2020) include mindfulness and spirituality among the psychological constructs associated with SS. At the individual level, the role of mindfulness is primarily to stimulate positive feelings, reduce negative emotional states and moods, and increase the ability to learn and solve problems. In a theoretical work, Ciocirlan (2017) describes environmental identity, which refers to the individual's conception of himself or herself as a being connected and attached to the natural environment, while the natural environment represents a value higher than humanity itself. A "sense of calling" (Wahid and Mustamil, 2017, p. 264) contributes to a balanced focus of organizations on people, nature, and economic value as it provides "meaning and purpose by making contributions to others" (p. 264).

More than the role of relatively stable individual characteristics in SS, the identified articles focus on examining the impact of various elements of sustainability on workers' attitudes, motivation, and behavior. At the heart of psychological science and its applied discipline WOP is the classic explanatory process of the role of perceptions (beliefs) and evaluations (attitudes) in behavior. In identified articles, the most often studied attitudes were job satisfaction, commitment, and work engagement. Another specific attitude that appears in the reviewed articles is trust, which we identified as a separate construct because of its "dual" role. Trust represents an attitude toward work that states that individuals feel safe to experiment and engage in various workplace behaviors, such as those related to the environment (Ciocirlan, 2017). At the same time, trust is also a general indicator of the quality of relationships and thus of life, representing a key component of social capital

(e.g., Barin Cruz et al., 2016; Sun et al., 2019), while it is also an indicator of the ability of organizations to build trust in relationships with various stakeholders (Jitmaneeroj, 2016; Harlin and Berglund, 2021). Job satisfaction appears in the articles mainly as a component of the main constructs of positive functioning—wellbeing and quality of life (Rogge and Van Nijverseel, 2019). Commitment is the bond between the individual and the group or other higher system. In SS, the studies reviewed theoretically examine, describe, or interpret the importance of organizational commitment (Carmeli et al., 2017; Guerci et al., 2019; van Dick et al., 2020), co-workers' commitment (Paillé et al., 2018), community commitment (DeMatthews and Izquierdo, 2020), environment commitment (Ciocirlan, 2017), commitment to work and the profession (Mushfiqur et al., 2018), and family commitment (Mushfiqur et al., 2018). Commitment described in these studies refers to an intense emotional attachment to the object of consideration, as it is based on mechanisms of identification (Carmeli et al., 2017; van Dick et al., 2020). Intrinsic motivation appears as a studied psychological construct in only one reviewed paper (Farooq et al., 2020). Virtually all the reviewed articles at the person-centered level, intentionally or only indirectly mention constructs such as engagement and commitment that point to the individual's intrinsic motivation in relation to SS or sustainability. Individual choices and behaviors in line with the principles of sustainability or SS should therefore be independent of external incentives and based on intrinsic motivation reflected in engagement and commitment.

The topics included in the work environment perceptions and other mediating mechanisms category include constructs that are classic mediating variables between the "objective" aspects of the work environment and employees' attitudes and behavior. In addition to organizational identification (Carmeli et al., 2017; van Dick et al., 2020), they also examine as mediating variables the perceived fit between an organizational sustainability orientation and employees' personal value system (Ciocirlan, 2017; Grimes et al., 2018; Sun et al., 2019), perceived organization's ethics of care (Carmeli et al., 2017), perceived organizational support (Mariappanadar, 2020), and peer support (Paillé et al., 2018). Justice also appears as a potential mechanism of workers' interpretations on SS of work organizations, as Rööß et al. (2019) found that comparing one's standard of living with the perceived standard of living of others is an important component of wellbeing. Important behavioral constructs that are exclusively dependent variables in the identified empirical and theoretical articles are identity work (Grimes et al., 2018) and sustainability work. Sustainability work summarizes constructs that denote employees' organization-related voluntary behaviors beyond their formal duties—organizational citizenship behavior (van Dick et al., 2020), participation in corporate voluntary programmes (Farooq et al., 2020), and environmentally friendly workplace behavior (Ciocirlan, 2017; Kim et al., 2017; Paillé et al., 2018). Identity

TABLE 3 People-focused Research Topics and constructs.

Research Topics identified in the review of the literature (categories)	Constructs identified in the review of the literature (themes)	Sources
Pro-sustainable self-system	Personality Spirituality Environmental identity	Ciocirlan (2017), Kim et al. (2017), Wahid and Mustamil (2017), Sajjad and Shahbaz (2020), Anwar and Clauß (2021), Raniga (2021)
Pro-sustainable job attitudes and motivation	Trust Positive job attitudes Intrinsic motivation	Barin Cruz et al. (2016), Jitmaneeroj (2016), Carmeli et al. (2017), Ciocirlan (2017), Kim et al. (2017), Mäkinen and Heikkilä-Tammi (2018), Mushfiqur et al. (2018), Paillé et al. (2018), Salminen et al. (2018), Guerci et al. (2019), Rogge and Van Nijverseel (2019), Sun et al. (2019), DeMatthews and Izquierdo (2020), Farooq et al. (2020), Mariappanadar (2020), Medugorac et al. (2020), van Dick et al. (2020), Wynne-Jones et al. (2020), Harlin and Berglund (2021), Raniga (2021), Yin and Jamali (2021)
Sustainability work environment perceptions and other mediating mechanisms	Perceptions of organization's (social) sustainability Person-organization fit Organizational identification Perceived distributive justice Perceived support	Carmeli et al. (2017), Ciocirlan (2017), Grimes et al. (2018), Mushfiqur et al. (2018), Paillé et al. (2018), Rööß et al. (2019), Sun et al. (2019), DeMatthews and Izquierdo (2020), Mariappanadar (2020), van Dick et al. (2020)
Sustainable job behavior	Identity work Workplace sustainability behavior	Carmeli et al. (2017), Ciocirlan (2017), Kim et al. (2017), Grimes et al. (2018), Paillé et al. (2018), Sun et al. (2019), Farooq et al. (2020), Mariappanadar (2020), Sajjad and Shahbaz (2020)

work is a process by which people enact their personal values through their choices and work behaviors, and in this way externalize and create in the organization the underlying conditions for authentic engagement and enactment of the values of SS (Grimes et al., 2018). Identity work is a mechanism of externalization of personal values that takes place only under the conditions in which the personal values are consistent with the values of the organization. Because the responsibility for decision making in organizations is most often assigned only to management, the self-initiated externalization of values through decisions and behaviors is often limited only to them. For this reason, the empirical research reviewed most often examines organizations' perceptions of sustainability initiatives. The perceived sustainability of organizations through mechanisms of assessing the congruence of personal values and those of the organization, as well as identification with the organization, promote employees' sustainable behavior (Ciocirlan, 2017; Kim et al., 2017; Sun et al., 2019; van Dick et al., 2020) and provide persistence in employment in SS organizations (Sun et al., 2019). The mechanism described is fully confirmed by the research of van Dick et al. (2020), based on which they conclude that organizations' investments in corporate social responsibility, which support both the social and environmental dimensions of sustainability, have an impact on employee motivation and behavior only when employees' values are aligned with the principles and values of SS. In this process, the social influences

of management and employees play multiple roles. Kim et al. (2017) confirmed a multilevel model that, in addition to personality traits, confirms the role of managers' green behavior (providing a resource for SS model learning) and green advocacy among colleagues in work groups on employees' green behavior (Kim et al., 2017).

Identified articles that address SS at the individual level shows that only some of them (Wahid and Mustamil, 2017; van Dick et al., 2020) address the concept of SS holistically, as a mutual intertwining of different dimensions of sustainability. Other articles focus mainly on the environmental dimension (e.g., Ciocirlan, 2017; Kim et al., 2017), which promotes a comprehensive sustainable orientation of individuals and organizations (Kim et al., 2017). SS is presented as one aspect of the broader sustainable orientation of organizations, to which employees contribute through their attitudes and behavior. We also found that a larger body of the articles reviewed addresses the role of attitudes toward work and work motivation in promoting and managing SS behavior in organizations (e.g., Carmeli et al., 2017; Ciocirlan, 2017; Paillé et al., 2018; Guerci et al., 2019; van Dick et al., 2020). Only to a lesser extent (such an approach is found in Mushfiqur et al., 2018; Raniga, 2021) do they address the impact that such behavior has on other areas of life and on workers' decent lives and general wellbeing. This suggests that the micro-level study focuses primarily on understanding the role of people as sources for achieving (social)

sustainability, rather than on work organizations as sources and mechanisms for ensuring social justice and equity.

Organization-focused constructs

We divided the review of articles studying the organization level into two categories, organizations as human systems and pro-sustainable policies and practices (Table 4). Within the category organizations as human systems we identified the topics organizational culture, organizational image, social capital, institutional commitment and engagement, and workplace diversity.

The construct of organizational culture, which has been one of the fundamental research foci of WOP in the last 20 years of the 20th century and the beginning of the 21st century, mostly does not appear directly as an object of study in the reviewed articles, but only indirectly as a construct that encompasses the set of values, norms, and behavior patterns that (co-)influence the work of individuals and organizations as a whole (e.g., Carmeli et al., 2017; Wahid and Mustamil, 2017; DeMatthews and Izquierdo, 2020) or specific organizational cultural traits that can promote organizational SS, such as the culture of exchange among organizational members that rewards cooperation among employees (Paillé et al., 2018) and promotes identification in the form of an “inclusive we-culture” (Harlin and Berglund, 2021), or a “network cooperations culture” resulting from partnership between organizations in the external environment (Barin Cruz et al., 2016, p. 1,005), and an environmentally friendly organizational culture (Ciocirlan, 2017). Organizational culture also appears as an aspect of the way organizations function in certain areas of activity, such as IT companies (Pankaj and Seetharaman, 2021). Loor Alcívar et al. (2020) define organizational culture as a component of organizational sustainability, or rather, they call it the “organizational identity,” which is composed of the “vision and mission, institutional values, and identification” (p. 326), and they include it as a new, fourth dimension of organizational sustainability (along with economic, social, and environmental) in the empirical model to analyze the relationships between corporate social responsibility (defined by the dimensions of economics, law, ethics, and philanthropy) and cooperative sustainability in Ecuador. Although by means of various structural models they confirm the predominant positive associations between the dimensions of sustainability and social responsibility, most of the variance is explained by the model that explains the SS of organizations through the dimensions of social responsibility. We therefore identified organizational culture theme not only because the construct appears in individual articles, but primarily because of the empirical work describing the relationships between the dimensions of sustainability in different samples of organizations (e.g., Jitmaneeroj, 2016; Gupta and Racherla, 2018; Loor Alcívar et al., 2020). In the case of tannery regions in India, Gupta and

Racherla (2018) found a positive reciprocal relationship between economic and environmental success, but a negative reciprocal relationship between the social and economic success of tanneries. As Jitmaneeroj (2016) stated, the relationship between different pillars or dimensions of sustainability moderates the activities of organizations (the industry), and “each pillar has unequal effects on the overall corporate sustainability and that the overall score is affected by not only the direct effects from pillar scores but also the indirect effects from the causal interrelations among pillars.” (p. 1,497). Other identified articles also point to the contradiction between effectiveness and solidarity (Lima and de Oliveira, 2017), the balance between an organization’s socioeconomic mission and exclusively economic goals (Gamble et al., 2020), and the balance between the principles of New Managerialism and Confucian ethics among teachers (Huang, 2018).

Other constructs that appear in the identified scholarly articles include organizational image (Vanderstucken et al., 2016); social capital (Barin Cruz et al., 2016; Sun et al., 2019; Alexander et al., 2020; Sajjad and Shahbaz, 2020; Raniga, 2021); institutional commitment (Barin Cruz et al., 2016; Alexander et al., 2020; DeMatthews and Izquierdo, 2020; Yin and Jamali, 2021); and workplace diversity (Mushfiquer et al., 2018; Khan et al., 2019). Workplace diversity is a key issue in pursuit of SDG-8 (decent work and economic growth) and SDG-5 (gender equality). In addition to the frequently discussed issue of gender equality in the labor market and in working and personal lives (Mushfiquer et al., 2018), there are still many barriers to labor market access and employment for people with disabilities when it comes to inclusion (Khan et al., 2019). Retention of older workers is also not a common practice in companies, especially in sectors that can themselves contribute to the extended working capacity of workers, even after meeting retirement requirements (Salminen et al., 2018). Social capital, together with human capital (knowledge, skills, values of individuals), is a defining element of corporate social responsibility (Alexander et al., 2020; Sajjad and Shahbaz, 2020), which defines the productive and trust-based exchange of the organization with the external environment, and in this way, the role of the organization’s commitment or propensity to collaborate with different actors or partners (Barin Cruz et al., 2016; Yin and Jamali, 2021), with the local community (Alexander et al., 2020; DeMatthews and Izquierdo, 2020), and the broader society (Sajjad and Shahbaz, 2020) is emphasized. Organizational image, expressed in concepts of respectable organizations (the image of the organization as SS) and impressive organizations (commercially highly successful and prestigious organizations), attracts a variety of applicants for employment, depending on whether the applicants are primarily seeking fulfillment of intrinsic or extrinsic values through employment (Vanderstucken et al., 2016).

The category of pro-sustainable policies and practices is defined by sustainable human resource management,

TABLE 4 Organization-focused Research Topics and constructs.

Research Topics identified in the review of the literature (categories)	Constructs identified in the review of the literature (themes)	Sources
Organizations as human systems	Organizational culture Organization's image Social capital Institutional commitment and engagement Workplace diversity	Appelbaum et al. (2016), Barin Cruz et al. (2016), Jitmaneeroj (2016), Vanderstucken et al. (2016), Carmeli et al. (2017), Ciocirlan (2017), Lima and de Oliveira (2017), Richardson et al. (2017), Wahid and Mustamil (2017), Gupta and Racherla (2018), Huang (2018), Mushfiquir et al. (2018), Paillé et al. (2018), Salminen et al. (2018), Khan et al. (2019), Sun et al. (2019), Alexander et al. (2020), DeMatthews and Izquierdo (2020), Gamble et al. (2020), Loor Alcivar et al. (2020), Sajjad and Shahbaz (2020), Wynne-Jones et al. (2020), Harlin and Berglund (2021), Pankaj and Seetharaman (2021), Raniga (2021), Yin and Jamali (2021)
Pro-sustainable policies and practices	Sustainable HRM Sustainable leadership Intra group relations and social influence Innovation Change management Ethics of care	Appelbaum et al. (2016), Vanderstucken et al. (2016), Carmeli et al. (2017), Ciocirlan (2017), Jansson et al. (2017), Kim et al. (2017), Mehta and Gorski (2017), Wahid and Mustamil (2017), Grimes et al. (2018), Mushfiquir et al. (2018), Paillé et al. (2018), Salminen et al. (2018), Williams (2018), Ashby et al. (2019), da Rosa et al. (2019), Guerci et al. (2019), Khan et al. (2019), McDermott et al. (2019), Rööös et al. (2019), Bojner Horwitz et al. (2020), Charni (2020), DeMatthews and Izquierdo (2020), Ellinger et al. (2020), Farooq et al. (2020), Mariappanadar (2020), Sajjad and Shahbaz (2020), Wynne-Jones et al. (2020), Duval et al. (2021), Harlin and Berglund (2021), Raniga (2021), Yin and Jamali (2021), Devkota et al. (2022)

innovation, sustainable leadership, organizational ethics of care, intragroup relations and social influence, participation, and voice, change management. Sustainable human resource management (HRM) (Mariappanadar, 2020) emphasizes the principles of an organization achieving economic success through HRM that ensure employee involvement and motivation (e.g., career development, performance management, employee benefits), in addition to minimizing potential harms that such practices have on employees by limiting the amount of time employees spend on their health. Sustainable HRM is defined as an HRM system focused on developing human capital in organizations to achieve not only economic but also social and environmental effects (Salminen et al., 2018). HRM system focused on ensuring employee engagement and motivation may have negative effects on managing health-related risks (Mariappanadar, 2020). On the other hand, such system represents an important element in older workers' decision to stay in the workforce until retirement or longer (Salminen et al., 2018). In addition to HRM systems, the identified articles focus on individual practices and their role in the SS of organizations, such as the effect of employee training on connecting and ensuring SS local self-government (da Rosa et al., 2019), attracting employees through a value system consistent with SS principles (Vanderstucken et al., 2016; Ciocirlan, 2017), employing vulnerable groups (Khan et al., 2019; Ellinger et al., 2020), career orientation to SS

activities and organizations (Mehta and Gorski, 2017), and occupational health (Rööös et al., 2019). In addition to HRM, an important factor in promoting SS is leadership. More than specific leadership styles (e.g., spiritual leadership—Wahid and Mustamil, 2017), sustainable leadership is a construct that summarizes leaders' decisions, behavior, and communications (Ciocirlan, 2017; McDermott et al., 2019; DeMatthews and Izquierdo, 2020), as important learning models for employees (Kim et al., 2017). Leadership is only one of the forms of social influence in organizations that flows “top-down.” Changes toward voluntary employee participation in sustainable initiatives, such as green behavior, cannot be ensured without horizontal influences among employees in the form of support (Paillé et al., 2018) and altruistic behaviors, such as knowledge sharing among employees (Ciocirlan, 2017).

In the context of organizational policy and practice, innovative approaches and social innovations are an important element for the development of SS in organizations. For example, Ellinger et al. (2020, p. 339) describe the modern “blue ocean strategy” approach to proactive recruitment and inclusion of workers with disabilities, which, while a social innovation, can play an important role in changing the internal organizational environment. Innovations also include the implementation of volunteer programmes within the organization in which employees participate (Farooq et al., 2020). Innovation is in the core of fast-growing start-up companies whose fundamental

TABLE 5 Society-focused Research Topics and constructs.

Research Topics identified in the review of the literature (categories)	Constructs identified in the review of the literature (themes)	Sources
Societies as human systems	Societal culture Gender equality Vulnerable groups Human and social capital Decent life	Foy Connor and Bent-Goodley (2016), Mohapi (2016), Lima and de Oliveira (2017), Leinonen et al. (2018), Mushfiquer et al. (2018), Puga and Soto (2018), Zuev (2018), Ashby et al. (2019), Rogge and Van Nijverseel (2019), Rööös et al. (2019), Aksoy and Arli (2020), Ballet et al. (2020), Ellinger et al. (2020), Forbes-Mewett et al. (2020), Sajjad and Shahbaz (2020), Conigliaro (2021), Ibrahim (2021), Raniga (2021)
Pro-social mechanisms	Social contract Politics Legislation Educational system and practices Crisis management Innovation Social partnership and voice Care-ethical approach	Foy Connor and Bent-Goodley (2016), Schiavo (2016), Lima and de Oliveira (2017), Benstead et al. (2018), Williams (2018), Zuev (2018), Khan et al. (2019), McDermott et al. (2019), Papadopoulos (2019), Pye (2019), Charni (2020), Lombard and Viviers (2020), Medugorac et al. (2020), Novitz (2020), Trautrimms et al. (2020), Conigliaro (2021), Ibrahim (2021), Raniga (2021)

management model is based on intensive management of change (Harlin and Berglund, 2021). Appelbaum et al. (2016) point out that developing sustainable organizations is a process of organizational change that often fails. This is likely in part because the primary principle of sustainability and SS of change must be an ethic of care (Carmeli et al., 2017; Williams, 2018), especially in a social environment facing a crisis of care and a financial, environmental, and social crisis. The ethical principles of care focus on people's needs, relationships, and the ethics and morality of decision-making (Carmeli et al., 2017).

The level of organization as the focus of WOP points to different but related concepts that link organizational culture, leadership, and practices to sustainability development. At this level of focus, the prevailing assumption is that sustainability is a construct that can only be addressed as a whole, with an orientation to all pillars or dimensions of sustainability. Specific SDGs can therefore be achieved through simultaneous efforts in different areas of organizational activity (social relations, attitudes toward the natural environment, financial operations). Similarly, constructs found at the macro level of society.

Society-focused constructs

The identified topics in articles studying and interpreting SS at the societal level to a large extent reflect the topics at the level of the organization as a system of people (Table 5).

The societies as human systems category includes societal culture, gender equality, vulnerable groups, human and social capital, decent life, and wellbeing. At the societal level, individual articles focus on the characteristics of specific social

environments in which the authors examine variables or processes. Predominant are studies that address cases at the level of developing countries and countries that face difficulties in securing SS and sustainability (Foy Connor and Bent-Goodley, 2016; Lima and de Oliveira, 2017; Mushfiquer et al., 2018; Ibrahim, 2021; Raniga, 2021). Like organizational culture, the dynamics between different dimensions of sustainability are also studied at the societal level. Based on the SDGs of UN and the "Happy Planet" index (Aksoy and Arli, 2020, p. 387), Aksoy and Arli (2020) conducted an analysis of the relationship between the sub-dimensions of sustainability of specific societies and the "happiness" index. The authors find that 94% of the variability (p. 388) of happiness at the societal level is explained by sustainability indicators, with the environmental and societal dimensions of SS positively associated with happiness, while the economic dimension is not associated with the societal happiness index. Gender equality and vulnerable groups are issues that appear in most of the identified items at the societal level of the study. Gender equality is one of the fundamental components of the concepts at the heart of SS—social justice, security, and cohesion (Ballet et al., 2020). Raniga (2021) notes that neoliberal social policies contribute significantly to the "feminization of poverty" (p. 592), as it is more difficult for women to break out of the vicious cycle into which they are pushed by systemic discrimination in the labor market, education, and other areas (Raniga, 2021). For other vulnerable groups modern society also does not provide a way out of the vicious cycle of insecurity and exploitation (Mohapi, 2016). Human and social capital are concepts that define positive individual and social power achieved through skills and solid social networks that are resources for development.

As Puga and Soto (2018) found, only certain forms of social capital are important for labor market participation. These are social networks that include individuals with higher social status. Access to such networks is not available to all, especially to women (Puga and Soto, 2018). Based on a selection of specific indicators of the dimensions of decent work already described, Conigliaro (2021) established the degree of fulfillment of various indicators and the overall degree of decent for EU countries. Just as we can define the level of decent work at the societal level, we can also define the level of happiness (Aksoy and Arli, 2020) and quality of life (Rogge and Van Nijverseel, 2019) at the societal level. Here, the concepts of decent work and wellbeing form the common overarching theme of decent living. However, different classifications of countries in terms of achieving SDGs do not mean much if scholars do not simultaneously examine the mechanisms that can lead to change. We have grouped these into a main area of interest, which we call pro-social mechanisms.

Crisis situations, such as the sudden outbreak of the COVID-19 pandemic, can increase risks in ensuring decent work and lives (Trautrim et al., 2020). The COVID-19 pandemic resulted in extreme changes in demand patterns, with temporary production stoppages and border closures blocking supply chains and reducing the effectiveness of risk management, while increasing workers' vulnerability to exploitation throughout the supply chain (Trautrim et al., 2020). Companies' struggle to survive distracted them from social and environmental issues and reduced the effectiveness of mechanisms that prevent worker exploitation (Trautrim et al., 2020). The functioning of organizations inside and outside their boundaries was redirected to the dimension of operating organizations to ensure their economic survival. Organizations that maintain trusting relationships with their stakeholders and have strong relationships within their scope of operations have an advantage in crisis situations, as such elements of stakeholder relationship quality are an important factor in operational resilience (Trautrim et al., 2020). A crisis can therefore threaten the key mechanisms that can support the SS of organizations—particularly the mechanisms of control over operations and functioning in terms of worker protection. The pro-social elements of the social environment that increase (or decrease) risks to social justice and equality and to decent living are economic conditions and policies (Ibrahim, 2021), legislation (Benstead et al., 2018; Khan et al., 2019; Raniga, 2021), the education system, and labor market policies (Schiavo, 2016; Papadopoulos, 2019; Medugorac et al., 2020), while social innovations in various forms adapted to situations and target groups play an important role (Lima and de Oliveira, 2017; Benstead et al., 2018). The mutual influence of all the mechanisms is most evident in efforts to change the social contract, where attempts have been made to achieve social change through revolution (Ibrahim, 2021). A revolution involves exposing oneself to threats to one's security and social peace to improve the rights and welfare

of citizens. Nevertheless, they do not necessarily achieve their goals, especially when political interests outweigh the interest in securing the fundamental rights of citizens to live in dignity. In such a society, disadvantaged (vulnerable) groups become even more deprived and vulnerable to poverty and unemployment (Ibrahim, 2021).

Social subsystems in a particular area, such as work and related social rights (Novitz, 2020) or the entire social system (Ibrahim, 2021), ensure SS only if they are based on a social contract that makes it possible to address and consider people's expectations on the one hand and the state's or community's responsibility for these expectations on the other. The very concept of social contract emphasizes participation and negotiation to achieve a balance of expectations and obligations for both partners (Ibrahim, 2021). International labor standards and social regulations represent the obligations of society and organizations to workers, but these mechanisms alone are not sufficient. Negotiations that imply participation, partnership, and voice (Novitz, 2020) are prerequisites for decent work standards to be met. Particularly in developing countries, disregard for workers' rights and lack of financial and professional incentives drive many workers into migration. The crises we have experienced in the recent past, such as the financial crisis and the subsequent intensification of austerity policies, the environmental crisis due to the exploitation of the world's natural resources, the crisis of devaluation of health services and social care, and the crisis of migration, threaten the security, solidarity, and sustainability of humanity (Williams, 2018). But these are crises that transcend narrow economic frameworks, so there is little interest in solving them. Coordinated implementation of social protection, labor and employment, and migration policies is needed, as well as positioning care (for self, for others; as policy, practice, service, or relationship) as a universal human practice and ethic (Williams, 2018). Although caregiving relationships can be inherently unequal, in relationships (between caregivers and care recipients) based on mutual responsibility, respect, and support, the giving and receiving of care are linked to trust, tolerance, and respect for diversity (Williams, 2018). Such care has cumulative (including economic) value: "The more people are supported, the better they are able to provide care" (Williams, 2018, p. 557).

Discussion and conclusions

The review of the literature was guided by the following three objectives: identification of the key themes or constructs through which WOP contributes to understanding and ensuring SS; to identify of what does the present mean for the advancement of the concept of SS and the role that psychology, particularly WOP, plays in it; to find out what role did or do the current conditions of pandemic and social insecurity play in describing

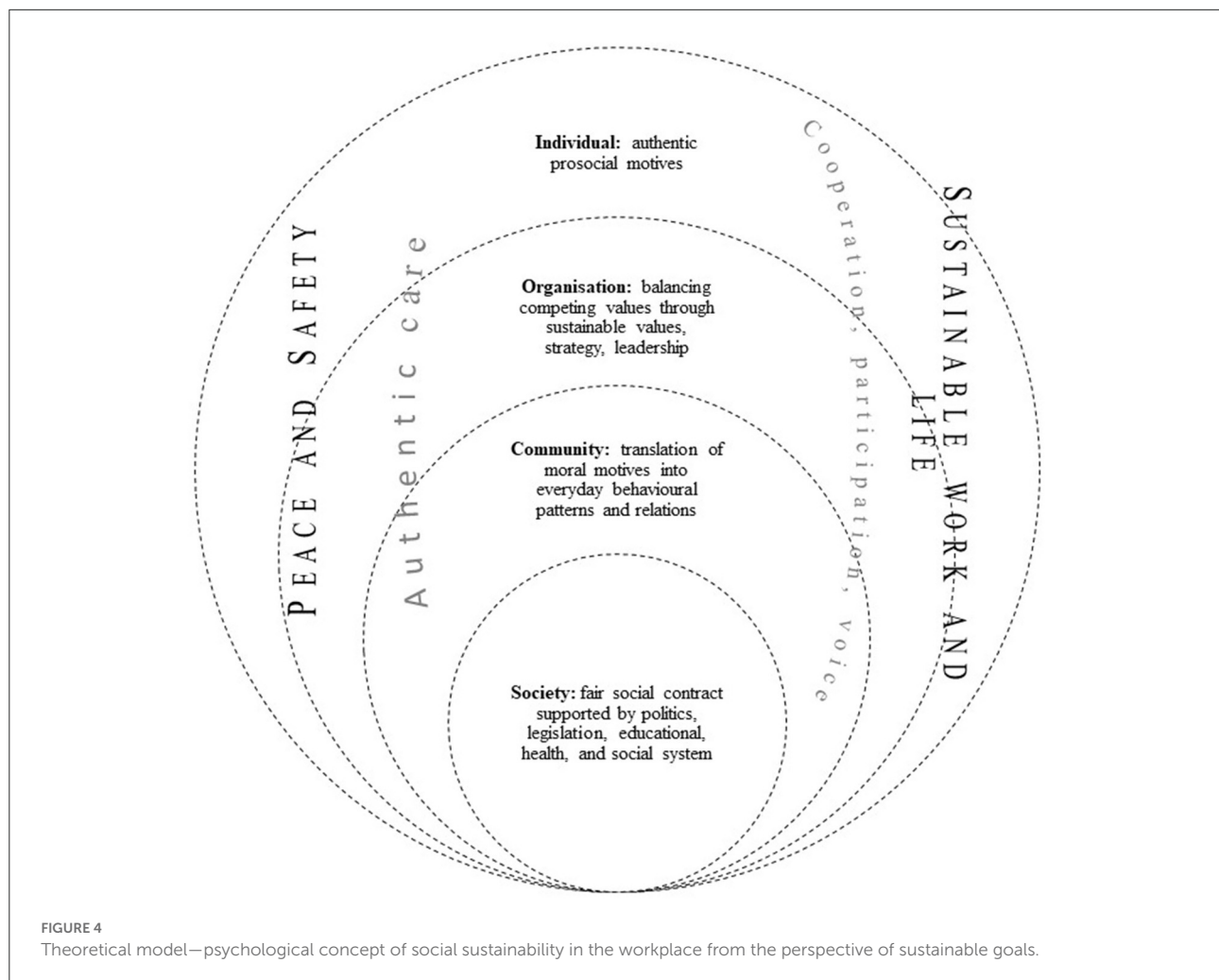
and interpreting the factors and mechanisms for achieving the SDGs. We presented the first, the identification of key constructs through which WOP contributes to understanding and ensuring SS in the present, in the Results chapter. Building on this, we have developed a comprehensive theoretical model of key constructs and mechanisms for promoting SS that simultaneously offers answers to the second goal set: What does the present mean for the advancement of the concept of SS and the role that WOP plays in it. In this chapter, we will bring the identified constructs together in a conceptual network to present the interconnectedness of the identified constructs and the SDGs and sustainability dimensions, focusing on the broader role of psychology and the WOP in ensuring SS. The major constructs or themes identified in the review of the literature are presented below and are shown merged in Figure 4.

Although some authors (e.g., Pappas and Pappas, 2015) have previously highlighted the importance of specific personality constructs that may denote an individual self-system, a review of the literature did not identify much work examining the role of individual traits in relation to SS behavior. Among the identified works are studies on the role of conscientiousness and moral reflexivity in sustainable behavior (Kim et al., 2017), the role of the five major dimensions of personality (Anwar and Clauff, 2021), intrinsic values (Vanderstucken et al., 2016), intrinsic motivation (Farooq et al., 2020), and mindfulness (Sajjad and Shahbaz, 2020). Although mindfulness provides a linking mechanism between the individual, the organization, and society (Sajjad and Shahbaz, 2020), as it allows one to step beyond the boundaries of the individual into relationships with the immediate and broader environment, further examination of the individual determinants of SS decisions and behavior must be mindful of the danger of redirecting SS-related concepts into individualistic, self-oriented need satisfaction. Stanley (2012) states that the study and application of mindfulness is based on the “inherent goodness of individual autonomy and responsibility, self-expression, personal development, enhanced subjective wellbeing, emotion regulation, and the pursuit of happiness irrespective of social conditions or ethical/moral conduct” (p. 632). Mindfulness training confirms the positive effects on wellbeing and quality of work (Mäkinen and Heikkilä-Tammi, 2018), but the conclusion that such an individual-focused approach promotes SS and sustainability may be incorrect or incomplete. This is because it implies the accumulation of wealth at the collective level without considering the dynamics within and between groups and the system or systems, which are not necessarily focused on social justice in the sense of prosperity for all, but on “exclusive” prosperity that depends directly on the social and economic status of the individual (Puga and Soto, 2018) or the collective. Sustainability can only be based on an ethic of life and work and a morality oriented to the common good that, more than utilitarian and instrumental values, emphasizes the relational component and the evaluation of decisions and actions in

the context of their impact on others, not only “here and now” but through the perspective of the future—the sustainable impact. It is precisely this relational perspective that is an important unifying element for various micro-level (individual-level) dimensions of sustainability. Kim et al. (2017) underpin the importance of moral motives for sensitivity to social and environmental issues. Fundamental respect for human dignity determines individuals’ attitudes toward people and the environment in terms of pro-social and pro-environmental attitudes and behavior (Kim et al., 2017).

Decent work is a construct that is central to all the articles presented, whether at the level of the characteristics of the workplace or at the level of society that seeks to provide a decent life for all residents, especially vulnerable groups, through decent work, despite possible disabling policies and social subsystems. The systematic review did not identify any article examining the psychological concept of decent work by Blustein et al. (2016) and Duffy et al. (2016). Drawing on well-founded criticisms of overly “Western” psychological approaches that focus on the core of individual wellbeing in relation to work constructs with a focus on personal agency beliefs and volition, which has greater interpretive power for a particular segment of the working population, Duffy et al. (2016) developed a multi-layered model or the new Psychology of Working Theory (PWT). This describes and explains the predictive factors, mechanisms, and consequences of decent work. Predictors of decent work include Duffy et al. (2016) psychological (e.g., work, career adaptability, proactive personality, social support), economic, and social (e.g., economic conditions, economic barriers, marginalization) variables that have been largely ignored in previous models of WOP. Decent work enables people to meet their needs, self-actualization at work, and wellbeing. Operationalization of the constructs described (Duffy et al., 2019a) and empirical research (Douglass et al., 2017; Duffy et al., 2019b) support the model. Review of the literature shows that the constructs we obtained in the literature review are included in the model PWT, for example, under the factors of personality or self-system, social support, vulnerable groups, economic conditions, and meaningful work. Further efforts to explain the role of WOP in SS should therefore be linked to PWT as the main explanatory model.

Sustainable work is a construct we identified in our literature review, and it describes work that encompasses all three dimensions of sustainability: economic, environmental, and social (Harlin and Berglund, 2021). Thus, it includes the dimensions of decent work, productive work, and environmentally sustainable work. Further research steps should be to improve the conceptualization, operationalization, and validation of the construct of sustainable work as a three-dimensional construct. Because previous research has well-defined the constructs of decent work and productive work and their interrelationship (Ford et al., 2011; Cerasoli et al., 2016), future research efforts should focus on the environmental



dimension of work, e.g., objective and perceived environmental factors related to work, environmentally sustainable work behavior, and positive work-related outcomes related to the preservation of the natural environment.

Quinn and Rohrbaugh's (1983) competing values model of organizational culture summarizes the results of the literature review in the construct of organizational and social culture. As we have noted, the works identified do not directly relate to the elements or characteristics of organizational and societal culture as explained by WOP but rely primarily on identifying the reciprocal relationships between dimensions of sustainability and their predictive power, while individual works also directly describe the paradox of modern society and approaches in which individual professional groups balance economic and societal needs. The basic concept of the competing values framework (Quinn and Rohrbaugh, 1983) is managing the paradox of efficiency—balancing business outcomes, ensuring internal stability of operations, openness of the organization to the outside world and to innovation, and ensuring supportive practices and relationships within the organization. Managing

(seemingly) paradoxical demands is a key responsibility of leaders and managers, who for this reason play a key role in developing culture and in ensuring organizational sustainability. This includes the identified construct of sustainable leadership, which, however, as the review of the literature shows, more than a specific leadership style, describes a sincere commitment of the leadership of organizations to achieve the goals of SS and to act according to the principles of SS, which is evident in the behavior and decisions of leaders (Ciocirlan, 2017; McDermott et al., 2019; DeMatthews and Izquierdo, 2020).

The review of the literature has shown that we should not separate SS from the other dimensions of sustainability. Each sustainability dimension contains elements of all three dimensions. SS may indeed be primarily focused on the positive social outcomes of health, wellbeing, poverty prevention, and decent living. However, the decent living component cannot be achieved in modern society unless all three dimensions of sustainability are addressed simultaneously. Further steps in the development of WOP to support the SS of organizations could focus on a theoretical upgrading and operationalization

of the competing values model, which is derived from the basic dimensions of sustainability and enables an analysis of the situation at the level of organizations and their members in terms of the organization's alignment with all three dimensions of sustainability simultaneously.

Over the past 5 years, we have also noted a lack of research that seeks to explain not only how to promote various organization-friendly behaviors among employees (e.g., organizational citizenship behavior or sustainable behavior), but also would examine the role of the organization as an agent of change in the actions of individuals in other areas of their lives. An example might be the spread of green behavior from the work environment to the home environment of employees, or the role of the organization's social justice and inclusion efforts, as well as employee sensitivity to social issues. Although the identified research also emphasizes that organizations with a particular image attract candidates with different value systems (Vanderstukken et al., 2016), organizational socialization can still play an important role in raising employees' awareness of various SS issues. Although research (e.g., Cooper-Thomas et al., 2004) does not provide consistent confirmation of changes in employee value systems as a result of organizational socialization, it does confirm changes in the degree of perceived fit between individual and organizational values. The perceived fit of the individual's value system and that of the organization may indicate an adoption (though not necessarily an assimilation or identification) of decisions, principles, values, and value systems and, as such, may have a potential influence on the individual's decisions and behavior in other life contexts. At the individual level, which is the focus of WOP, it would be useful for future research to focus on the transfer of SS principles and behaviors from the organizational setting to other areas of life.

At the levels of the workplace, the organization, and society, the review of the literature identified numerous practices that ensure decent work and the SS of organizations and society. Among them, the construct of innovation, i.e., introducing new but proven policies and practices to ensure decent work, engaging vulnerable groups, improvement of operations and minimizing the negative impacts of operations on the natural environment, or all these elements simultaneously (e.g., Ellinger et al., 2020; Raniga, 2021), emerges repeatedly at all three levels. However, implementing innovative approaches requires support from societal-level policies and legislation, as well as organizational policies and practices, even though the innovations might (or even should) initially be conceptualized as countering existing cultural norms (Raniga, 2021). The concept of sustainable HRM can be an important contribution of WOP to the advancement of SS, especially through a more precise definition of the construct and empirical research on the long-term impact on employees and the operation of organizations.

In reviewing the identified articles, both at the level of the organization and society, constructs such as participation,

cooperation, partnership, voice (Mushfiquer et al., 2018; Novitz, 2020; Yin and Jamali, 2021), as well as commitment, engagement (Carmeli et al., 2017; Ciocirlan, 2017; Mushfiquer et al., 2018; Paillé et al., 2018; Guerci et al., 2019; DeMatthews and Izquierdo, 2020; van Dick et al., 2020), and care (Carmeli et al., 2017; Williams, 2018) were described. These constructs embrace principles of relationships, processes, and work that involve all interested stakeholders in the internal and external environments of organizations, while drawing attention to the fact that the authenticity of these dynamics can only be achieved through an emotional connection (and thus an identification with stakeholder needs) and an authentic concern for all stakeholders in the organization. As such, they represent a specific *modus operandi* in systemic efforts to implement and achieve SS. They are relational by nature, as they describe the quality of organizations' relationships with individual members of the organization, with the organization's stakeholders, and with the broader society. The danger in highlighting such operating principles is that they may be trivialized as "social stuff" (Alexander et al., 2020) or associated with so-called New Age constructs (Farias and Granqvist, 2007), which may have a mimetic effect on the true meaning of supportive and collaborative approaches. For this reason, it is even more important that all social subsystems, especially those whose primary task is to educate future generations, be oriented toward linking dimensions of sustainability and toward the characteristics of individuals that ensure a cooperative, supportive, and inclusive approach to problems and to work, as well as a sincere concern for others, work tasks, and the environment.

As Glavas (2016) points out regarding the concept of social responsibility, SS is also a concept that is multi-layered. It includes the micro level (individual), the meso level (e.g., community, work organization, region), and the macro level (society, country). The study of concepts that are inherently multi-layered and transdisciplinary (Lake et al., 2016) risks fundamental errors in social science—errors at the level of data collection, pooling, and analysis, as well as errors in the application of theories that examine a particular concept from a particular level. For this reason, further investigation requires cooperation in science and an expansion of knowledge and skills in psychology. "To more fully understand the psychological nature of working, careful considerations are needed of relevant social, economic, political, and historical forces, which shape, constrain, and facilitate many aspects of contemporary working." (Duffy et al., 2016, p. 128).

In the introduction, we presented a hypothetical model that helped us define the objectives of the literature review (Figure 1). In it, we defined the reciprocal links between the SDGs of wellbeing and health (SDG-3), gender equality (SDG-5), decent work (SDG-8), safety (SDG-11), and peace (SDG-16) in ensuring the SS of the work environment. The review of the literature indirectly confirmed the interconnectedness of

societal, organizational, and individual levels, which together exert an influence on the SS principles and practices of the work environment. Crisis situations such as the COVID-19 pandemic (Trautrimis et al., 2020) or the socio-political crisis (Ibrahim, 2021) confirm that security and peace are fundamental starting points for ensuring SS and for achieving the other SDGs identified. At the organizational level, security is also a fundamental feature of SS organizations (Harlin and Berglund, 2021). Although we did not identify many articles that emphasize the role of crisis situations and change management, the identified articles that address the construct of SS and sustainability at the societal (e.g., Trautrimis et al., 2020; Ibrahim, 2021) or at the organizational level (Appelbaum et al., 2016; Harlin and Berglund, 2021) emphasize that crisis situations can wear down trust in organizations and society, increase the vulnerability of vulnerable groups (Trautrimis et al., 2020; Ibrahim, 2021), and jeopardize the implementation or maintenance of SS principles (Appelbaum et al., 2016; Harlin and Berglund, 2021). The present is therefore an opportune time to reassess efforts to make work and society more sustainable.

In the center of Figure 4 are four circles describing society as the innermost circle, in contrast to the usual psychological approach to describing environmental models for the workplace and personal development in the broader environment and its subsystems. SS is a social construct that must first be established as such in the functioning of the social system as a whole—politics, economics, legislation, labor, welfare, health, and education. Sustainable functioning cannot be achieved at the level of individual organizations and communities, nor by accumulating or increasing the inputs of individuals. Societies in which formal systems and subsystems function according to the principles and values of sustainability are in themselves supportive mechanisms for implementing the goals of SS in communities and organizations. Such societies also include mechanisms that promote pro-social and pro-environmental motives and behaviors in individuals through role models and advocacy. The fundamental ethic of action at the micro, meso, and macro levels in such a society is authentic care (Carmeli et al., 2017; Williams, 2018), which also enables sincere collaboration, participation, and voice for vulnerable groups. The model in Figure 4 therefore underscores the relational nature of the future individual, organizational, and societal development toward SS, in which WOP research and practice play a fundamental role in linking the attitudes, decisions, and behaviors of working people to societal and organizational SS goals and practices. As we predicted in Figure 1, the prerequisite for such an orientation in society and organizations is peace and safety achieved in an uncompromising social contract—a sincere social contract that prioritizes the needs of individual survival, society, and self-determination over political interests (Ibrahim, 2021). The model in Figure 4 has a particularly important implication for policymakers. Changes toward sustainable functioning at the individual and societal levels will not be achieved without changes in societal

subsystems, including the educational system in which future generations develop. To achieve changes in the relational and responsibility perspective (from the individual or individualized to the relational perspective), there must also be individual and community characteristics that include, among others, the moral and value dimensions of development.

In conclusion, it should be emphasized that the concept of SS in relation to the WOP is not new. Ultimately, of course, all efforts in this field of psychology are, by basic definition, related to the study, interpretation, and design of the work environment that contributes simultaneously to efficiency, but also to a positive impact on the lives of people, organizations, and society (Blustein et al., 2016). Especially in crisis situations, it is necessary to ensure approaches and attitudes that do not promote stereotypes, prejudice, and discrimination and do not diminish the rights of vulnerable groups. Rather, the crisis can serve as an opportunity to “unlearn” certain entrenched practices and introduce new, more sustainable (Trautrimis et al., 2020).

The review of the literature is not exhaustive and is limited by the search terms, the criteria for inclusion and exclusion of scholarly articles, and the databases we used in the search and the accessibility of the works. To some extent, it is also dependent on subjective elements and mechanisms of categorization of constructs. However, we have endeavored to control for this by working in parallel with the two authors. The breadth of the concept of SS requires different approaches and knowledge of the social sciences. For this reason, similar studies in the future should be conducted with an interdisciplinary approach, which would increase the reliability and validity of the conclusions obtained.

Data availability statement

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

Author contributions

DKG and KB designed the study, conducted the literature review, analysis, and synthesis of the results. Both authors contributed to the interpretation of the literature review, reviewed it for important intellectual content, and approved it for publication.

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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.

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Effects of intimate partner violence against women in international micro and small enterprises relationships: The mediator role of capabilities

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While previous studies have explored multiple constraints affecting women exporters, the effects of intimate partner violence against women (IPVAW) are still unexplored in the literature. Thus, this study aims to probe first whether women owners of micro and small enterprises (MSEs) in export markets experience IPVAW. Secondly, it aims to explore the effect of IPVAW on their relationship quality with business partners, mediated by the performance of export capabilities. Using a structured questionnaire applied through personal interviews, we surveyed 57 female owners of exporting MSEs in Peru. Partial least squares structural equation modeling was used to analyze the data and test the model. The preliminary findings indicate that women exporters who experience IPVAW are more likely to face problems performing export capabilities. In turn, these performance problems seem to affect the quality of their relationships with importers and suppliers. Moreover, there is a direct relationship between IPVAW and problems in performing export capabilities and between issues performing capabilities and the relationship quality. Our theoretical contribution is a conceptual model that proposes the variable "Problems Performing Capabilities" as a mediator to measure the effects of IPVAW on exporting MSEs owned by women. Our findings urge policymakers and trade organizations boosting women-owned export enterprises to include initiatives that address and prevent IPVAW in their export promotion programs.

KEYWORDS

international trade, gender, export, capabilities, relationship quality, violence against women, women owned enterprises, women exporters,

Introduction

Boosting the participation of women entrepreneurs in international trade makes countries' economies more competitive (Kabeer, 2012; International Trade Centre, 2015) and contributes to the advancement of sustainable development goals. In this mission to potentiate women-owned export businesses, various reports have explored business constraints they face in export markets (e.g., Orser et al., 2004; Brenton et al., 2011, 2013; Lee et al., 2016; Pozarny, 2016; Welch et al., 2016; Rosenbaum, 2017, 2019; Asia-Pacific Economic Cooperation Secretariat, 2017; Shepherd and Stone, 2017; World Bank, 2020; Davies and Mazhikeyev, 2021).

Nevertheless, we cannot discuss women entrepreneurs' constraints in export markets without including the gender issues affecting them. One of the most considerable gender constraints for women around the globe that has not been considered until now by the literature is intimate partner violence against women (IPVAW). IPVAW violates women's human rights and is a continuous pandemic even older than COVID-19. Worldwide, one in three women has experienced intimate partner violence and non-partner sexual violence at least once in their lifetime (World Health Organization, 2021). IPVAW does not only compromise women's wellbeing and causes tremendous costs for growth and development (Varcoe et al., 2011; Duvvury et al., 2013; Vyas, 2013), but it also affects the work productivity of owners of micro-enterprises in local markets (Vara-Horna, 2015, 2018, 2020a). On this previous evidence, it is not unwise to hypothesize that IPVAW could also affect women owners of micro and small enterprises (MSEs) that operate in export markets.

To date, it is unknown whether women-owned export businesses experience IPVAW. Besides, no study has investigated the effects of IPVAW on their export businesses. Indeed, there is a current lack of knowledge regarding the prevalence and effects of IPVAW on international women entrepreneurs. This study is the first to fill this knowledge gap by answering two fundamental questions: (1) do women owners of exporting MSEs experience IPVAW? And if so, (2) how does IPVAW affect their exporting MSEs? To answer these questions, we conducted an exploratory study with two aims: (1) to evidence that women owners of exporting MSEs experience IPVAW, and (2) to explore the effects of IPVAW on their exporting MSEs by proposing and testing a conceptual model.

This study proposes a conceptual model building on the resource-based view theory of the firm (RBV) applied to export businesses and previous evidence on the effects of IPVAW. Our model analyzes the effects of IPVAW on the relationship quality with importers and suppliers and four types of crucial exporting capabilities that enhance the export performance of small businesses. In this model, we acknowledge that the owner plays a crucial role in achieving export performance, as they are mainly responsible for making management decisions (Celec and Globocnik, 2017), obtaining resources, and performing capabilities to export. We tested the proposed model with 57

women owners-managers of exporting MSEs in Peru, one of the countries with the highest levels of physical and sexual intimate partner violence in Latin America and the Caribbean (Bott et al., 2021). As a result, we provide the first evidence that IPVAW increases the probability of women owners having problems performing capabilities, affecting the relationship quality with importers and suppliers.

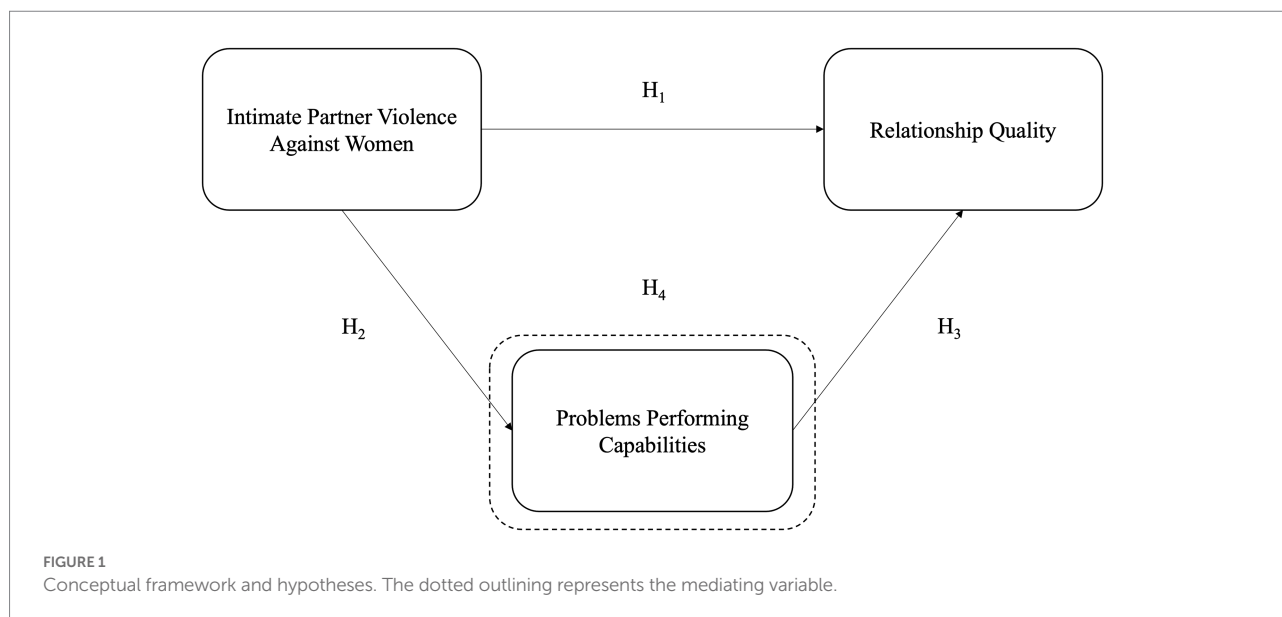
The research findings of this study offer a series of conceptual and practical contributions. First, it enriches the literature on female international entrepreneurship by revealing for the first time that IPVAW is a constraint that affects women owners of exporting MSEs and their businesses. Secondly, it provides and tests a first conceptual model to measure the effects of IPVAW on women owners of exporting MSEs and proposes the variable "problem performing capabilities" as a mediator variable. Finally, the findings provide evidence for policymakers and trade promotion organizations to design export promotion programs for women-owned businesses that include measures to prevent, assess, and combat IPVAW. Addressing IPVAW will potentiate their actions' effectiveness and tackle the constraints affecting women exporters in a better scope.

The article is organized as follows. Preceding the introduction described below, we present the proposed model to measure the effects of IPVAW together with our hypotheses. Afterward, we explain the research methodology, the research results, and a discussion of the findings. Finally, we conclude with theoretical and practical implications, limitations, and future research directions.

Conceptual model

The first and crucial hypothesis of this study is that women exporters are experiencing IPVAW in any of its forms, psychological, economic, physical, or sexual violence. We start from this affirmation to propose a conceptual model that measures the effects of IPVAW on women-owned exporting MSEs. Since there is no evidence in the literature about the effects of IPVAW on this group of women entrepreneurs, there is a need to create a conceptual model. Thus, we propose a model nourished by literature on the resource-based view (RBV) theory of the firm applied to small and medium enterprises (SMEs) in export markets, together with previous evidence about the effect of IPVAW on female employees and women owners of micro-enterprises. The conceptual model presented in Figure 1 seeks to integrate that evidence.

To measure the effect of IPVAW on women-owned exporting MSEs, we used evidence from the RBV theory of the firm applied to the SMEs' performance in export markets. The RBV states that the firm's performance and competitive advantage result from effectively using its resources and capabilities (Wernerfelt, 1984; Barney, 1991; Makadok, 2001). In the context of international SMEs, plenty of literature has examined the positive effect that a set of resources and capabilities have on the performance of SMEs in export markets (e.g., Kaleka, 2002; Zou et al., 2003; Morgan



et al., 2004; Lages et al., 2009; Celec and Globocnik, 2017; Ferreira and Simões, 2017; Monteiro et al., 2019; Gupta and Chahuan, 2021). Nonetheless, not all factors are critical for superior export performance. For example, special attention has been brought to relational resources or the relationship quality with business partners (Davis and Mentzer, 2008; Monteiro et al., 2019; Leonidou et al., 2021).

Relational resources refer to the ties between the firm and external stakeholders like customers, suppliers, and others like government institutions and competitors (Davis and Mentzer, 2008). The quality of these relations—relationship quality—is commonly measured by the punctuality, trust, quality of communication, and commitment between the business partners (Kuhlmeier and Knight, 2010; Leonidou et al., 2013, 2014, 2021; Bianchi and Abu Saleh, 2020). As found by diverse authors, strong and positive relationships with business partners and foreign customers positively influence SMEs' export performance (Lages et al., 2009; Ural, 2009; Celec and Globocnik, 2017; Haddoud et al., 2017; Hasaballah et al., 2019; Monteiro et al., 2019; Imiru, 2022). Indeed, good relationships with importers result in a better flow of information about the target market, customer needs, and competitors, allowing exporters to improve before and after-sales services, develop new products, and design better costs and pricing strategies (Ambler and Styles, 2000; Zou et al., 2003; Beleska-Spasova et al., 2012; Monteiro et al., 2017, 2019).

Given that small enterprises have limited resources developing positive relationships with foreign partners plays a crucial role in competing in international markets (Knight and Cavusgil, 2004; Lages et al., 2009). The situation is not different for women exporters, whose enterprises are mainly small and tend to have limited resources to compete in international markets (Frohmann, 2018). Therefore, close relationships with customers and suppliers are a high priority for some women exporters to earn a reputation and business deals (Reavley et al., 2005). In this context, the

question is how IPVAW could affect these crucial relationships. Since no study explored the effects of IPVAW on the relationship quality with business partners, we considered a previous study showing that women micro-entrepreneurs who experienced IPVAW had a higher prevalence of problems with their customers than those who did not suffer IPVAW (Vara-Horna, 2015, 2018). Although these studies were based on a prevalence comparison between the group of women with and without IPVAW, they gave us the insight to hypothesize that IPVAW could affect the relationship of women exporters with business partners such as importers and suppliers. Therefore, our first hypothesis states:

H1: IPVAW has a direct effect on the quality of the relationship between women exporters with importers, and suppliers

Moving forward with our model, possessing resources is insufficient to develop a competitive advantage and ensure export success. Following the RBV theory, the performance of capabilities is needed to differentiate from competitors and offer value to export markets. The literature suggests four particular types of capabilities influencing the export performance of SMEs: operational, informational, product-development, and relationship-building capabilities (e.g., Piercy et al., 1997; Kaleka, 2002; Morgan et al., 2004; Fernandes et al., 2017; Ramon-Jeronimo et al., 2019; Aghazadeh et al., 2022). We consider these four capabilities together as export capabilities.

Operational capability is the ability to exploit resources (Nonaka, 1991; Bromiley and Rau, 2014) to perform the enterprise's basic functional or daily activities (Winter, 2003; Pavlou and El Sawy, 2011). In the context of exports, these are basic critical activities needed to export, such as obtaining export documentation like certificates, compliance with quality standards, and compliance with the legal export procedures and regulations to export (Sharma, 2013). Informational capability is

acquiring relevant information about the international market, customers, competitors, and the export market environment (Souchon and Diamantopoulos, 1996) to make better decisions and perform better (Morgan et al., 2004). This capability provides a competitive advantage in export markets (Kaleka, 2002) and is positively related to the SME's export performance (Kaleka, 2012; Celec and Globocnik, 2017; Keskin et al., 2021). For others, it is considered an export success factor (Ferreira and Simões, 2017; Monteiro et al., 2019). The third capability is Relationship-building, which refers to establishing and maintaining close business relationships with customers and suppliers (Kaleka, 2002; Morgan et al., 2004). Building good and lasting relationships, especially with international customers, is essential to achieving a competitive export advantage and improving export performance (Kaleka, 2002; Ramon-Jeronimo et al., 2019; Malca et al., 2021). It also includes negotiation skills (Atkin and Rinehart, 2006), as a coercive or non-cooperative negotiation can negatively affect the negotiation's success perception and, ultimately, their relationship. Finally, Product-development capability means the development of new products, improvement, modification, or adaptation of existing ones, and adoption of new methods and ideas in the production process (Morgan et al., 2004; Ferreira and Simões, 2017; Ramon-Jeronimo et al., 2019) to satisfy the needs of international customers (Zou et al., 2003). The performance of this capability provides a competitive advantage and creates and delivers superior value to international customers (Zou et al., 2003; Morgan et al., 2004; Aghazadeh et al., 2022).

Previous reports have also highlighted the relevance of these capabilities for women exporters (Brenton et al., 2013; International Trade Centre, 2015; Pozarny, 2016; World Bank, 2020). In this scenario, IPVAW could affect women exporters' performance in the export capabilities described below. For instance, previous research in Bolivia, Peru, Ecuador, and Paraguay found that IPVAW has diminished the work productivity of female employees, who had more problems concentrating at work and difficulties fulfilling their usual tasks (Vara-Horna, 2019, 2020b). Similarly, local women entrepreneurs who suffered IPVAW have diminished their work productivity and lost working days compared to women without IPVAW (Vara-Horna, 2015, 2018, 2020a). With these antecedents, we hypothesize that women exporters who experience IPVAW will likely face more problems performing export capabilities. Hence, we propose the following hypothesis:

H2: IPVAW directly affects women exporters' problems performing export capabilities.

Nevertheless, based on the RBV theory, resources and capabilities are interrelated (Morgan et al., 2004), meaning that the resources could leverage the development of capabilities and vice versa (Morgan et al., 2004; Wu, 2006; Lin and Wu, 2014). The performance of organizational capabilities, such as market, learning orientation, and innovativeness, positively influences the quality of the relationships with suppliers and, consequently,

enhances the business performance (Chong Tan et al., 2011). For exporting SMEs, the performance of some competencies, such as managerial, positively influences the relationship quality with importers, which, in turn, affects its competitive advantage (Ismail et al., 2014). While these authors analyzed different capabilities, we hypothesize that if the owner has problems performing export capabilities, the relationship quality with importers and suppliers could be affected. Initially, without including the effects of IPVAW, we hypothesize that women exporters' poor performance of export capabilities could affect the relationship quality with importers and suppliers. Hence, we formulate the following hypothesis:

H3: Women exporters' problems performing export capabilities have a direct negative effect on their relationship quality with importers and suppliers

Finally, building on the hypothesis above described and previous evidence on the effects of IPVAW on local women micro-entrepreneurs, our model proposes a potential relationship between IPVAW, export capabilities performance, and the relationship quality with business partners. We hypothesize that women owners of exporting MSEs experiencing IPVAW could have problems or difficulties performing export capabilities, which could affect their relationship quality with importers and suppliers. Our model situates the variable "problems performing export capabilities" as a mediator between IPVAW and the relationship quality with the business partners. Therefore, the last and central hypothesis of this study is:

H4: IPVAW negatively affects women exporters' relationship quality with business partners, mediated by women's problems performing capabilities.

Methodology

Research design

This study uses an exploratory approach since it is the first study exploring the effects of IPVAW on exporting MSEs owned by women. While the instrument used during the data collection was a structured questionnaire, we conducted personal in-depth interviews with women exporters to gain the respondents' trust and clarify the questions.

Participants and data collection process

In outlining the population of women exporters in Peru, we discovered that there were no statistics, directories, or official databases of women-owned export enterprises that could give us a reference for the population, their location, or the sector's participation. Thus, there was the need to build an official

directory of women-owned export MSEs collecting and crossing official databases from three different national institutions: the National Superintendence of Customs and Tax Administration (SUNAT), the Ministry of Production, and the Comprehensive Foreign Trade Information System (SIICEX). In the first stage, we requested the database of all enterprises with exports in 2018 and 2019, their location, and the owner's gender. Surprisingly, information about the owner's gender was unavailable in the national statistical system. Therefore, we could only access the owners' names of all enterprises. With this, we built up a database of MSEs with three criteria: (1) The enterprise was categorized as MSE according to the Peruvian legislation. Their total annual sales were not more than S/0.7,140,000 soles or US\$2,106,194. (2) The MSEs exported in 2018 and 2019, signifying that they are not sporadic exporters but have 2 years of exporting knowledge and experience; and most importantly, and (3) The MSEs were managed and owned by women at an equal or greater percentage than 50%.

In the second stage, we conducted a desk validation, tracking the identification number of each enterprise and verifying that they were active by December 2019. We reviewed the official status of all companies in the official national online system. Companies with the status of suspended, not locatable, or in liquidation were not discarded. After that, we compiled the companies' telephone and e-mail available on diverse web pages. As a result of the desk validation, Lima and Arequipa were the regions with more women exporters in Peru.

In the third stage, we made phone calls to all the MSEs from the filtered database to confirm that the enterprises were currently operating (active) and to verify that the owners and general manager of the company were women. Nevertheless, the telephone numbers were not working most of the time, and the owner was unavailable. Therefore, we sent invitations to all the enterprises' e-mails that we compiled with an invitation to participate in this research.

We called and sent e-mail invitations to 228 MSEs in Lima, of which 146 did not answer e-mails or phone calls. We contacted 82 women exporters by phone, of which 39 did not agree to participate in this study. In Arequipa, we called and sent invitations to 25 eligible companies, from which three did not answer. Five refused to participate due to the lack of time or availability. We arranged personal meetings with the women owners at their enterprises' premises or cafeterias near their workplaces. Only two interviews were conducted by video call due to the COVID-19 outbreak in Peru.

As a result, we interviewed and surveyed 60 women from Lima (43) and Arequipa (17). Nevertheless, one survey in Lima and two in Arequipa were invalid because interviews were interrupted and questionnaires could not be completed. In total, we collected answers from 57 women owners of exporting MSEs. They were, at the same time, the general managers of the exporting MSEs. Each interview to administer the questionnaire lasted between 40 and 60 min.

The empirical material was collected through a structured survey using an interview technique to gain the respondents' trust and confidence. The data collection period was from January to March 2020. First, we started the interviews by briefly introducing the research. Then, we informed the anonymity of their answers and requested their consent to start the interview. During the interview, we read every question and filled out the survey according to their answers.

In some cases, the interviewees provided more details about their experiences running their exporting enterprises and their experiences with IPVAW. As suggested by [Ellsberg and Heise \(2007\)](#), we applied an ethical protocol that assured the informants' confidence, security, anonymity, and protection. If someone approached the informants during the meeting, we changed the conversation topic and did not mention IPVAW. At the end of the meeting, we offered information about support lines and current public services that addressed IPVAW.

Questionnaire and measurements

The questionnaire was validated in two stages. Firstly, by a group of experts on IPVAW and its effects on businesses. Secondly, we ran a pilot survey with 10 women exporters to try the easiness of the questions and improve the questions' content. This questionnaire included items related to five themes: (1) General demographic information, (2) MSEs' export activity, (3) Relational resources, (4) Problems performing export capabilities, and (5) IPVAW. In addition to demographic information of the women owner and the MSEs' export activity, three main variables were measured:

Relationship quality

A 12-item scale measured the relationship quality of the women exporter with importers that are (1) customers (final consumers or companies that use the product as input for manufacture or transformation) and (2) distributors (clients that resale the product). Moreover, we included the relationship quality with suppliers (local or international that provide them the final product or input for production). The quality of the relationship was measured by analyzing four dimensions: punctuality, trust, quality of communication, and commitment ([Kuhlmeier and Knight, 2010](#); [Leonidou et al., 2013, 2014](#)). The constructed scale was created using items with the highest reliability from the dimensions developed by [Kuhlmeier and Knight \(2010\)](#) and [Leonidou et al. \(2013\)](#). To answer the questions, women exporters evaluated how they think customers/distributors/suppliers have perceived them in the last year in terms of punctuality, trust, communication, and commitment. The response options were a 7-point Likert scale ranging from unpunctual to very punctual (punctuality), not at all reliable to reliable (trust), poor and limited communication to fast and relevant communication (communication), and without commitment to very committed (commitment).

Problems performing export capabilities

This construct measured the number of times women entrepreneurs faced problems or difficulties performing four types of export capabilities in the last 12 months. Each item is measured with a 7-point Likert scale developed by [Vara-Horna \(2015; 2020a\)](#) with ordinal response alternatives for the number of incidents: never; happened only before 2019, one or two times; 3–5 times, 6–10 times; between 11 and 20 times; and more than 20 times.

Operational capabilities

Five-item scale measured if women exporters face problems or difficulties performing operational activities or procedures entirely necessary to export ([Katsikeas and Morgan, 1994](#)), such as (1) obtaining documentation to export like certificates (origin certificate and specialized certificates according to the product), (2) compliance with quality standards requested by the clients, (3) compliance with the legal export procedures and regulations to export, and (4) achievement of the delivery of products in the requested times.

Informational capabilities

A four-item scale adapted from [Celec and Globocnik \(2017\)](#), [Kaleka \(2002\)](#), and [Morgan et al. \(2004\)](#) measured if women exporters had problems obtaining information such as (1) identification of potential customers, (2) capturing important market information, (3) in acquiring relevant information, and (4) in making contacts in the export market.

Relationship-building capabilities

A five-item scale measured problems or difficulties: (1) understanding overseas customer requirements, (2) establishing and maintaining close business relationships with customers, distributors, and suppliers. These items were obtained from [Morgan et al. \(2004\)](#), [Ferreira and Simões \(2017\)](#), and [Ramon-Jeronimo et al. \(2019\)](#). We included the item “*Negotiation with international clients*” after the validation with experts.

Product-development capabilities

A three-item scale measures problems or difficulties on: (1) the improvement or modification of existing products according to international requirements developing new products, (2) the development of one or more new products for international markets, and (3) the adoption of new methods and ideas in the production/manufacturing process. Items from this scale were used by [Morgan et al. \(2004\)](#) and [Kaleka \(2002\)](#).

Intimate partner violence against women

The last variable measures the presence of violent acts perpetrated by the present or former partner (boyfriend, fiancé, spouse, and partner) against the participants. These violent acts are typified by psychological, economic, physical, and sexual and are measured on an additive scale. The 20-item-scale was adapted from [Vara-Horna \(2015, 2019, 2020a\)](#), the Conflict Tactics Scale—CTS 2 ([Straus, 2007](#)), and the national IPVAV survey of the

Center for Disease Control and Prevention ([Saltzman et al., 2002](#)). After conducting the surveys, we excluded three items that did not have prevalence: two items that measured sexual violence and one that measured physical damage as a consequence of violence. All items included in the analysis are listed in [Table 3](#). IPVAV scales showed internal consistency and construct and discriminant validity. The average extracted variance by scale ranged between 87.8% and 91.8%, with high composite reliability (between 0.845 and 0.957) and discriminant validity ([Vara-Horna, 2019](#)). Each item has ordinal response alternatives for the frequency of IPVAV that range from never; it happened only before 2019; one or two times; 3–5 times, 6–10 times; between 11 and 20 times; and more than 20 times. In addition, the scale differentiates two time periods: (a) IPVAV last year: any act of IPVAV occurred within the last 12 months (the year 2019) and (b) IPVAV during lifetime: IPVAV occurred in the last year and in before the last year.

Participants description

Fifty-seven Peruvian women owners and managers of exporting MSEs from the regions of Lima and Arequipa participated in this research. The average age of the women exporters was 46 years, ranging from 19 to 76 years. According to the educational level, more than half of women exporters have a graduate or postgraduate degree (64.7%). Most women speak a second language (82.4%), principally English (80%), and French (20%). The majority had an intimate partner (63.2%) and a son or daughter (71.9%). According to their firm's information, their companies have 12 years of creation on average, ranging from 2 to 40 years. Their economic sector is principally the textile sector (45.6%), followed by agro-export (8.8%), Handicrafts (8.8%), Metal-Mechanical (7%), Food and Beverages (7%), and other sectors. Only 24.6% of women exporters were unique owners, while 75.4% had a business partner, mostly family members (47.7%) and an intimate partner (20.5%). Nevertheless, all women interviewees oversaw the management of the enterprise. As per the full-time employees, the majority had 1–10 employees (61.4%) and 11–20 employees (17.5%). While 8.8% had between 21 and 60 employees and 12.3% had no employees. Considering the employees involved in export management, half of the women have at least one employee that supports them (50.9%), and 10% have the support of two to four employees. However, 38.6% manage the export activities alone.

Data analysis

To analyze the data and test the model, we applied partial least squares structural equation modeling (PLS-SEM) using the statistical package SmartPLS 3.3.2. The reliability and validity of the scales were optimal. The Cronbach's Alpha value ranges from 0.751 to 0.866, and the Average Variance Extracted is more than 50% (see [Table 1](#)).

TABLE 1 Reliability and validity of the constructs.

Constructs	Alfa de Cronbach	rhoA	Composite reliability	Average variance extracted
Intimate partner violence against women	0.751	0.787	0.813	0.539
Problems performing capabilities	0.760	0.719	0.744	0.521
Relationship quality	0.866	0.793	0.865	0.636

TABLE 2 Heterotrait-Monotrait ratio—HTMT for discriminant validity.

Construct	IPVAW	Problems performing capabilities	Relationship quality
IPVAW			
Problems performing capabilities	0.689		
Relationship quality	0.400	0.488	

We consider the PLS-SEM approach the most suitable method to test the model for various reasons (Hair et al., 2019). First, PLS-SEM is a non-parametric method that does not require normally distributed data. In this regard, we found that the constructs were not normally distributed after running Kolmogorov–Smirnov and Shapiro–Wilk tests into our data. Therefore, we needed a non-parametric test to analyze the correlation between variables. Second, PLS-SEM is used in exploratory research to discover new relationships, develop a theory, or explore the extension of existing ones (Hair et al., 2019). Fourth, PLS-SEM has been increasingly used to improve the explanatory capacity of variables and their relationships (Hair et al., 2014; Matthews et al., 2018), especially in social and behavioral sciences (Benitez et al., 2020) and international business research (Richter et al., 2016). Indeed, this research is exploratory and aims to detect a relationship between IPVAV, Relationship quality with business partners, and women's problems performing capabilities which other studies have not proved. Finally, PLS-SEM is used when the model's structure is complex and analyzes the relationships considering a mediator variable (Henseler et al., 2016; Matthews et al., 2018). Indeed, the proposed model aims to explore the mediation effect of the variable "problem performing capabilities" to prove the effects of IPVAV.

The discriminant validity was estimated using the Heterotrait-Monotrait (HTMT). According to Henseler et al. (2015), the HTMT criterion is more precise in measuring discriminant validity as it can achieve superior specificity and sensitivity rates (97–99%) in comparison to the Fornell–Lacker criterion and cross-loadings (Henseler et al., 2015). In addition, the HTMT criterion states that the constructs' independence is confirmed when the values are less than one, meaning that there is no redundancy. In contrast, values close to one mean a lack of discriminant validity. To use the HTMT, some authors recommend a threshold of 0.85 or 0.90 (Fornell and Larcker, 1981; Kline, 2015). As observed in Table 2, all HTMT values are below one and the suggested threshold, meaning that the constructs have discriminant validity.

A bootstrapping method was implemented to examine the trajectory of beta coefficients and determine if these relationships are significant. Bootstrapping is a resampling technique that creates artificial parameters. It reproduces 5,000 times the analysis and all indicators obtained by combining the data from the 5,000 analyses. This technique estimates the standard errors to calculate the Student's *t*-values and the significance of the Beta coefficients (significance value of *p*). The relationships are considered significant if $p < 0.05$ and *T* is greater than the critical value (1.96, with a significance level of 5%; 2.57, with a level of significance of 1%) (Hair et al., 2014, 2017). As control variables, non-statistical differences were found between the group of women who experienced IPVAV and who did not experience IPVAV in terms of age ($F = 0.005$, $p = 0.994$), educational level ($F = 1.221$, $p = 0.275$), precedence from Lima or Arequipa ($X^2 = 0.243$, $p = 0.073$), civil status ($X^2 = 7.03$, $p = 0.218$) and age of the business ($F = 0.003$, $p = 0.995$).

Results

Of all women exporters, 61.4% of women exporters have experienced IPVAV at least once in their lives, and 40.4% in the last 12 months (see Table 3). The types of violence with the highest prevalence were psychological (61.4%), physical (17.5%), and economic violence (10.5%). Psychological violence is the most common type of IPVAV experienced in 2019 (40%). None of the interviewed women experienced sexual violence by their partners or former partners.

A summary of the annual and lifetime prevalence of the difficulties performing export capabilities is presented in Table 4.

Applying partial least squares (PLS) for structural equations, we tested our model and explored the direct, indirect, and total effects of IPVAV on the relationship quality and export capabilities performance (see Table 5). The analysis shows that IPVAV has no significant direct impact on the relationship quality with business partners, rejecting Hypothesis 1 ($\beta = -0.120$; $p = 0.508$). In contrast, IPVAV has a positive direct relationship

TABLE 3 Prevalence of women exporters who suffered IPVAW by their partner or former partners.

	Prevalence	
	Life (%)	Last 12 months (%)
Psychological violence	61.4	40.4
Has he humiliated you, making you feel bad about yourself	43.9	26.4
Has he harassed you while you were working or while you were not at home	21.1	8.8
Has he forbidden you, through warnings or threats, to chat with friends, clients, or other men	10.5	5.3
Has he forbidden you, through warnings or threats, from traveling for business	8.8	5.3
Has he threatened to kill himself if you leave him or hurt you and your family	10.5	1.8
He has insulted you verbally, said rude or aggressive words	43.9	28.1
Economic violence	10.5	1.8
Has he forced you to obtain credit against your will	1.8	0
Has he taken your money, personal belongings, or property away from you	7	1.8
Has he destroyed your belongings, clothes, or documents	5.3	0
Has he taken money, destroyed supplies, products, or documents from your business	1.8	1.8
Physical violence	17.5	0
Has he slapped you or pulled your hair	8.8	0
Has he pushed you against the wall or floor	12.3	0
Has he punched or kicked you	3.5	0
Has he hit you with a leash, sticks, or other objects	0	0
Has he tried to strangle you	3.5	0
Has he attacked or threatened you with sharp weapons (knife) or guns	1.8	0
Total IPVAW	61.4	40.4

TABLE 4 Prevalence of problems performing export capabilities.

	Prevalence	
	Life (%)	Last 12 months (%)
Operational capabilities		
Obtain certificates or other documentation for export	68.6	47.1
Comply with quality standards or requirements of the export product	35.1	21.1
Comply with export procedures and regulations	36.8	26.3
Achieve the delivery of the orders in the requested times	63.2	49.2
Informational capabilities		
Identify potential customers	61.4	52.6
Capture/acquire important information from international markets	54.4	45.6
Make new contacts in the international market	63.2	52.6
Monitor competitive products in the international market	45.6	35.1
Relationship-building capabilities		
Negotiate with your international customers	50.3	32.8
Understand the requirements of your international clients	40.4	28.1
Establish and maintain close relationships with your international customers (who are not distributors)	22.8	14
Establish and maintain close relationships with your international distributors	33.3	21
Establish and maintain close relationships with your suppliers	42.1	19.3
Product-development capabilities		
Improve/adapt your existing product(s) to international requirements	45.6	29.8
Develop one or more new product(s) for international markets	45.6	36.8
Adopting new methods and ideas in the production/manufacturing process	42.1	38.8

TABLE 5 Hypotheses testing results.

Hypotheses	Path	Beta	t	Confidence interval 95%		Result
H1	IPVAW > RQ	−0.120	0.662	−0.571	0.141	Rejected
H2	IPVAW > PPC	0.460	3.041**	0.332	0.778	Approved
H3	PPC > RQ	−0.436	2.992**	−0.715	−0.167	Approved
H4	IPVAW > PPC > RQ	−0.200	2.012*	−0.442	−0.070	Approved

PPEC, problems performing capabilities; IPVAW, intimate partner violence against women; RQ, Relationship quality. * $p < 0.05$; ** $p < 0.01$.

with women's problems performing export capabilities ($\beta = 0.460$; $p < 0.01$), confirming Hypothesis 2.

Moreover, we found that women's problem performing capabilities negatively affect the relationship quality with business partners ($\beta = -0.436$; $p < 0.01$), supporting Hypothesis 3.

We tested our model and confirmed Hypothesis 4. IPVAW indirectly affects the relationship quality of women's business partners, mediated by the problems performing export capabilities ($\beta = -0.200$; $p < 0.05$). In other words, women owners of exporting MSEs who experience IPVAW have more probability of facing problems performing capabilities, which tends to affect their relationship with business partners.

Discussion

This study evidence for the first time that women owners of exporting enterprises suffer intimate partner violence, affecting their performance. Indeed, we tested an initial conceptual model finding that IPVAW increased the probability of facing problems performing capabilities, affecting their relationship quality with importers and suppliers. Since no study has explored IPVAW as a constraining factor for women entrepreneurs in export markets nor explored how it could affect women's export businesses, our research makes significant theoretical and practical contributions.

Similarly to the findings of previous studies on women micro-entrepreneurs in local markets (Vara-Horna, 2013, 2015, 2018, 2020a), our study evidence that women owners of MSEs in export markets also experience IPVAW, mainly psychological, economic, and physical violence. A possible explanation of why these international businesswomen, who have a higher educational level, experience IPVAW, is because empowerment is not immediate protection against violence, as the male backlash theory predicts. As has been reported by various studies, female empowerment in terms of employment opportunities and higher educational achievement tend to increase domestic violence and abuse (Heath, 2014; Erten and Keskin, 2018, 2021; Bhalotra et al., 2021; Guarnieri and Rainer, 2021). Furthermore, even in a gender-equal country like Sweden, intimate partners tend to react with hostility and violence to an improved economic position of women (Bergvall, 2022). In this regard, women owners of exporting MSEs are not exempt from suffering IPVAW; their role as business owners and economic position could trigger a male backlash response from the partners, who react with hostility and violence against them.

While this study confirmed that IPVAW is a problem affecting women owners of exporting MSEs, we also aimed to explore the effects of IPVAW on women-owned exporting MSEs. As previously mentioned, there is no evidence on how IPVAW can affect them. Therefore, we proposed and tested a model built-up on the literature about the resources and capabilities needed by SMEs in export markets, together with evidence on the effects of IPVAW on the productivity of female workers and women micro-entrepreneurs. Our model includes the relationship quality with business partners and a set of capabilities needed by an SME to be successful in export markets. As a result, we explored the direct effects of IPVAW and indirect effects of IPVAW on the relationship quality with importers and suppliers, mediated by women exporters' problems performing capabilities.

Our first hypothesis explored if IPVAW directly affects the relationship quality with importers and suppliers. After analyzing the data, we found that IPVAW does not have a direct effect on the relationship quality, rejecting hypothesis 1. With this result, it seems IPVAW does not affect the relationship quality of women exporters with these business partners. However, this analysis was without considering a mediator variable. Previously, Vara-Horna (2015, 2018) suggested that IPVAW could be related to the relationship of women micro-entrepreneurs. However, these studies on micro-entrepreneurs did not aim to evaluate the effect of IPVAW and the relationship with clients but exposed that women with IPVAW had a higher prevalence of problems with customers compared to the women that did not suffer IPVAW. In comparison, our analysis explored the direct effect of IPVAW on the relationship quality of women exporters with business partners.

In terms of the effect on capabilities, we found that IPVAW has a direct effect on women's problems performing export capabilities. In other words, women exporters that experienced IPVAW had a higher probability of facing problems performing export capabilities. This finding is consistent with previous studies evidencing that female workers and owners of local microenterprises who experienced IPVAW were more likely to have a diminished work performance, being less concentrated, and motivated at work compared to those who do not suffer from IPVAW (Vara-Horna, 2015, 2018).

Without considering the IPVAW variable, we aimed to evidence a relationship between the problem performing capabilities and the relationship quality with importers and suppliers. Our findings confirm a direct relationship between women exporters' export capabilities and the relationship quality with importers and suppliers. This goes in line with previous

studies, where the performance of capabilities enhanced the quality of the relationship with customers and suppliers (Chong Tan et al., 2011; Ismail et al., 2014).

Building on this relationship, we probe our model when the variable *problems performing capabilities* is a mediator between IPVAW and relationship quality. In other words, women exporters who experience IPVAW are more likely to face problems performing export capabilities. These performance problems tend to affect their relationship quality with importers and suppliers. Contrary to our proposed model, previous studies used morbidity as a mediator variable to estimate the effect of IPVAW on labor productivity (Vara-Horna, 2013, 2015, 2016, 2018; Asencios-Gonzalez et al., 2018; Duvvury et al., 2020). Nevertheless, these studies concentrated on female employees of medium or big firms, women owners of formal and informal enterprises, or women surveyed in their households. These groups had a higher annual and monthly prevalence of all four types of violence, psychological, physical, economic, and sexual. They also had severe physical damage due to violence. However, in the case of women exporters, our study found that the most declared type of violence at an annual prevalence was psychological, and no one had physical damage due to violence. In this regard, our study suggests that the variable *problem performing capabilities* could be potentially used as a mediator variable to estimate the effects of IPVAW on women's businesses when women entrepreneurs have mainly suffered psychological violence.

Theoretical contribution

While the literature on female entrepreneurship is vast, the stream of international female entrepreneurship remains in its developing stage. Our research enriches the literature on international female entrepreneurship and contributes to the body of knowledge in two ways. First, we evidence that women entrepreneurs in export markets are affected by IPVAW. A constraint that was not explored by any study on women exporters. Secondly, our most important theoretical contribution is the proposal of the first conceptual model to estimate the effects of IPVAW on women-owned exporting MSEs. Our research provides the first evidence that women exporters affected by IPVAW are more likely to have problems performing export capabilities, affecting the relationship quality with their importers and suppliers. We tested our model and proposed that the variable "*problem performing export capabilities*" has a mediator role in estimating the effects of IPVAW on the relationship quality with business partners. This finding opens the discussion to include this new mediator variable to measure the effect of IPVAW when women entrepreneurs have mainly suffered psychological violence. Future research should continue exploring this mediator variable to estimate the effects of IPVAW on their businesses. Our findings are an initial step for future research on international female entrepreneurs to continue testing the conceptual model in other countries' contexts with higher or lower prevalence of IPVAW, in a specific productive sector, or even expanding and adapting the model. Overall, our study

opens new directions for future investigation on the inclusion of IPVAW as a constraint for women exporters.

Practical contribution

Our research findings are relevant for policymakers and trade promotion organizations (TPOs) aiming to empower and boost women entrepreneurs in export markets. While some have recognized a series of constraints that women exporters face and developed export support programs, IPVAW was not considered a constraint until now. We proved that women exporters face IPVAW, which negatively affects their export businesses. Our findings are an emergency call for policymakers and TPOs to destinate actions and resources to prevent and tackle IPVAW. These institutions might use our findings to act and include initiatives to address, combat, and prevent IPVAW in every export promotion program targeted at women entrepreneurs. For example, training programs could include topics related to self-empowerment, reflection on traditional gender roles, prevention of IPVAW, and the legal framework against IPVAW, among others, that seek to moderate women. NGOs or civil associations with higher expertise on those topics could be great allies in running training in this thematic.

Intergovernmental organizations, such as the Asia-Pacific Economic Cooperation and the International Trade Center (2020) with the worldwide initiative SheTrades, aiming to advance the economic integration of women entrepreneurs in international trade and empower them, might also benefit from our findings. These organizations could bring awareness about the effects of IPVAW on women exporters among their partner countries and include actions to prevent and combat IPVAW in their initiatives. In doing so, they will also contribute toward achieving Sustainable Development Goal 5, "Gender equality and women's empowerment," and Goal 8, "Decent work and economic growth" and respond to the "Buenos aires declaration on trade and women's economic empowerment" (ITC, 2020). Certainly, IPVAW should not be considered a private issue that remains at home but a social and business concern that must be prevented and eliminated—with the alliance of different sectors—to guarantee women's wellbeing and the development of their export businesses.

Limitations and future research directions

This study has some limitations and brings new opportunities for future research. First, we acknowledge that our sample size makes it difficult to generalize our results to all women owners of exporting MSEs in Peru. Indeed, obtaining a representative sample size was challenging because women exporters were geographically dispersed. Moreover, they were not members of a business union or network, and it was necessary to invest many economic resources to locate them. Therefore, further research should continue testing the model with a more significant sample

of women exporters from other emerging economies and more advanced ones. For instance, this study could be replicated in pioneer countries on gender equality in international trade such as Canada (Global Affairs Canada, 2018).

Second, our study could not examine the effects of IPVAV on the performance of each export capability and how each influenced the relationship quality with business partners. Our conceptual model proposes four key export capabilities (operational, informational, relationship-building, and product-development capabilities). Further studies could explore specific relationships between IPVAV and each export capability in robust samples. In addition, academics could use our model as a starting point and test how IPVAV affects other resources and capabilities, as suggested by the RBV theory. Finally, our study could not determine how each type of IPVAV affects women exporters and their enterprises.

Further research could inspect in depth the prevalence of the types of violence and its impact. For example, we identified that some few women exporters suffer economic violence. Academics explore further and analyze how economic violence possibly affects women exporters' economic resources to export. Overall, our study opens a new research field in the literature on international female entrepreneurship and provides directions for further studies. We reached our aim to uncover that IPVAV is an actual constraint affecting women owners of exporting enterprises and moved one significant step in proposing and testing a conceptual model to estimate the effects of IPVAV on women-owned exporting MSEs.

Data availability statement

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

Author contributions

JP-G: contributed to the literature review, conceptualizing, performing data collection, discussion, and references. AV-H:

contributed to methodology, research design, and data analysis. AV-M: contributed to conceptualizing, discussion, and overall proofreading. UD: contributed to writing and editing of the original draft. All authors contributed to the article and approved the submitted version.

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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.

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Talent acquisition and technology: A step towards sustainable development

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Purpose: The purpose of the research is to highlight the use of social media and information technology in employee recruitment by providing a conceptual recruitment model in the aspects of theoretical foundations and empirical evidence on the factors and outcomes leading to the use of social media recruiting technology (SMART).

Design/methodology/approach: A total of 4,481 organizations are listed as the population of the study, and a total of 589 responses are used in the study for data analysis. Selection of the sample is done based on the simple random sampling technique. Appropriateness of sample size is confirmed with the help of G*Power (3.1.9.2) software, which calculated a sample size of 326 with 99% power, a multiple correlation (R) of 0.30, and at a significance level of 0.05.

Findings: The paper provides empirical insights into the elements of the extended unified theory of acceptance and use of technology; i.e., performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, habit, and price value have positive relations with the intention to adopt social media recruiting technology, and the intention impacts use of social media recruiting technology. Furthermore, the use of social media recruiting technology impacts outcome variables, i.e., social media recruiting time, cost, and recruitment quality, which establish the extension of the recruitment model with all factors and outcomes.

Originality: This study provides a model of employee recruitment to win the battle of acquiring human capital using social media recruiting technology as a step toward sustainable development, which has been conceptually defined and empirically tested. The comprehensiveness of the model has never been discussed in earlier studies.

Practical implications: Through this research, organizations will get an opportunity to experience enhancement in the scope of recruitment as a whole instead of considering recruitment as a traditional procedure, and the use of information technology can be expanded for progressive measures for future purposes and pandemic situations.

KEYWORDS

social media recruiting technology, recruitment, UTAUT2, information technology, human resource management, sustainable development

Introduction

To attract the pool of potential candidates, the organizations preferred to utilize the mediums such as television advertisements (Taylor and Schmidt, 1983), newspapers (Breugh, 1981; Jones et al., 2006), radio (Saks, 1994), web advertisements (Llorens and Kellough, 2007), and outsourcing (Ordanini and Silvestri, 2008; Shih and Chiang, 2011). The organization's employee recruitment process has undergone significant transformations in the recent years. Across the globe, recruitment departments of the organizations have employed electronic channels, which are exclusively asserted by an en route progression of technologies (Bondarouk et al., 2017; Vetráková et al., 2018; Van Esch et al., 2019). Keeping the breast up with changing world scenarios and dealing with the prevailing situation of the current pandemic, the organizations have realized the need and use of social networking websites (SNWs) for recruiting top and rare talent to achieve innovation and sustainability. SNWs have given a new face to recruitment trends (Villeda et al., 2019; Nikolaou, 2021; Rehman et al., 2021). Social networking websites are no longer just a place to keep in touch with social circles, but they have entered the workplaces (Chang et al., 2022) in the form of social media recruiting technology (SMART) and becoming a standard mode of employee recruitment and selection.

Recruitment managers in the organizations are now experiencing advancements in recruitment using SNWs such as LinkedIn, Facebook, Twitter, YouTube, Xing, and Plaxo (Chua et al., 2018; Golovko and Schumann, 2019). These websites provide a user-friendly interface through the interaction of humans and information technology (Suen, 2018). SNWs are the authentic and reliable medium for talent hunting and have become a comprehensive source of hiring decisions. Equally, SNWs use specialized algorithms to provide convenient recruitment processes and help organizations reach sustainability. Prior literature (Toft et al., 2014; Peñarroja et al., 2019; Rehman et al., 2021) suggested that social networking websites help in the advertisement for a job, targeting and creating a larger pool, screening potential applicants, talent hunting based on specific organizational criteria, and focusing

on specific skills required for hiring decisions. However, there is a knowledge gap: "Which pre-hire recruitment objectives can be achieved using SNWs?" Therefore, the use of SNWs in organizations must be explored further to develop a comprehensive recruitment model for devising better strategies. Hence, it is imperative to seek theoretical and practical corroboration on the feasibility of the social media recruiting technology (SMART) use decision and how this technology can help to achieve desired recruiting outcomes of an organization for organizational sustainability.

The primary purpose of this research was to highlight the use of social media and information technology in employee recruitment by providing a comprehensive recruitment model in the aspects of theoretical foundations and empirical evidence on the factors and outcomes leading to the use of social media recruiting technology. There are two main reasons for the motivation to focus on Pakistani (Asian) organizations. First, according to the figures from Internet World Stats (2021), Pakistan has witnessed a significant and rapid increase in internet use (current users: 100,679,752) compared to other countries. Similarly, the number of users of social media websites has also increased, and approximately 43.55 million users use the Facebook platform only (Statista, 2022). Second, although the number of social media users has increased, the use of social networking websites in hiring employees is still the less studied area, especially regarding its outcomes such as time, cost, and recruitment quality.

The findings can support Pakistani organizations and relevant stakeholders in devising better strategies to use social networking websites for hiring, leading to employee retention for organizational sustainability. Through this research, organizations will get an opportunity to experience enhancement in the scope of recruitment as a whole instead of considering recruitment as a traditional procedure and the expansion in the use of information technology for future purposes and pandemic situations. Also, the potential candidates and employees excessively use several social networking websites, which can be an opportunity for further enhancing understanding and use of social networking websites because they can investigate the

relationship between SNWs and post-hire recruitment outcomes. The current study will help managers modify traditional recruitment through social media and technological advancements. In conclusion, a model of social media recruiting technology for employee recruitment has been validated in the contextual framework of Pakistan (Asian) to fill the theoretical and empirical gap in the current body of knowledge.

Background literature and hypothesis development

Social networking websites (SNWs) are considered a vital recruitment tool though recruiting through social media technology is an ongoing credible area of concern for researchers and practitioners (Villeda et al., 2019; Dwivedi et al., 2020). Prior research raised issues such as technological advancements in employee recruitment requiring organizations to allocate additional assets, administrative support, and substantial changes in existing recruitment methods (Ellabban and Abu-Rub, 2016). Similarly, anecdotal shreds of evidence were presented in the business context but only in periodicals and industry reports (Kashi, 2015; Rehman, 2018). A little empirical and hypotheses-driven research has been done to understand the prevailing advancements regarding using SNWs and incorporating technology in recruitment (Dwivedi et al., 2020). Therefore, a model of employee recruitment using social media recruiting technology (SMART) has been conceptually defined and empirically tested in this study as a step toward sustainable development. The current study used the Extended Unified Theory of Acceptance and Use of Technology (UTAUT2) (Venkatesh et al., 2012) as the underpinning theory in the use of SMART and for the evaluation of pre-hire outcomes of SMART in an organizational setting.

The Extended Unified Theory of Acceptance and Use of Technology is the most widely-used model in the technological community and is a refinement of earlier models. This model attempts to centralize previously scattered research on end-users' use of technological change into a coherent framework. There are many reasons why the extended UTAUT (Venkatesh et al., 2012) should be used as the appropriate model for SMART adoption. The utility of UTAUT2 lies in its ability to foresee people's intent to adopt new technologies based on its emphasis on utilitarian value, which is inextricably related to extrinsic motivation. In addition to the original four constructs of UTAUT, the extended version, known as UTAUT2, added hedonic motivation, price value, and habit as key predictors to measure intention. Hedonic motivation refers to the pleasures of using technology in the workplace, whereas price value refers to the financial investment required to acquire and set up new technologies. One final component in UTAUT2 that shapes a manager's decision to embrace SMART is a habit.

Relationship between extended unified theory of acceptance and use of technology factors and intention to adopt social media recruiting technology

After reviewing the relevant literature on social media recruiting technology, it has been observed that the intervention of technology concept has gained much scholarly attention in recent years. In the study of Barba-Sánchez et al. (2021), the model illustrates the connection between a secondary school's technological aptitude and a smart city's commercial activities. The study also demonstrates a favorable correlation between secondary schools' IT capabilities and the entrepreneurial activity in the city. Similarly, the new production model appears to depend heavily on managing information and knowledge in an environment of economic instability and intense competition between businesses. Corporate performance is significantly impacted by a firm's adoption of information and communications technology (ICT) and industry attractiveness. This research recommends complete ICT integration inside businesses (Barba-Sanchez et al., 2018). Prior studies (Kashi, 2015; Nikolaou, 2021; Rehman et al., 2021) highlighted the seven factors influencing the intention to adopt social media recruiting technology.

Performance expectancy

Performance expectancy can be defined as a level of expectation an individual may have from technology that the utilization of technology will assist him in enhancing the level of performance at a job (Kemp et al., 2019). Venkatesh et al. (2003) discussed performance expectancy as the degree of belief an individual may have that using a system will help an individual to achieve job outcomes for increasing organizational performance. The expected outcomes of high performance from technology will be a driving source of intention for an individual to use technology. As per the different models mentioned above, performance expectancy is the most substantial factor influencing the intention to utilize technological means (Alalwan et al., 2018). When Venkatesh et al. (2003) removed two essential factors of the technology adoption model, i.e., performance expectancy and effort expectancy, to see the impact of the remaining factors, the results were diminished. Therefore, performance expectancy will represent the degree to which an individual believes that using technology and social networking websites in recruitment will positively impact his job performance. As per the above literature, the following hypothesis has been proposed in the current research.

H1a: Performance expectancy positively relates to the intention to adopt social media recruiting technology.

Effort expectancy

The concept of effort expectancy can be defined as the degree to observe an association between conveniences of the utilization of the system (Bhatiasavi, 2016). The convenience of using technology has a positive relationship with the intention of technology adoption as if someone believes that he has the skills and competency to use technology, then there is a high probability of accepting technology utilization (Kurfal et al., 2017; Nahla Aljojo, 2020). Venkatesh et al. (2003) have discussed effort expectancy as the most important factor along with performance expectancy, which significantly impacts the intention to adopt the technology. Thus, effort expectancy denotes individuals who believe that accepting social media in the recruitment process is not a rigid or multifarious procedure and that utilizing this technology will positively impact their job performance. As per the above literature, the following hypothesis has also been proposed.

H1b: Effort expectancy positively relates to the intention to adopt social media recruiting technology.

Social influence

According to Venkatesh et al. (2003), social influence plays a vital role in developing the intention to adopt technology and make decisions for an individual. Gershman et al. (2017) and Rehman et al. (2017) highlighted that there are some significant factors present in individuals' social systems that shove them to decide their influence and it can be about adopting some technology. Social influence in technology adoption can be defined as the ability to perceive that people important to him believe he should utilize and adopt the technology. In the initial phase of SMART adoption, social influence in the variable is known to impact the individual's intention significantly, strengthening the relationship between these two constructs. If someone around is giving importance and significance to work or the use of technology, then there is a likelihood of the individual being more inclined toward the work (Rehman et al., 2017) and technology adoption (Ifinedo, 2016). Thus, under this research, social influence is the degree to which an individual perceives that people around him believe that he should accept the use of social media and technology in the context of recruitment. As per the above literature, the following hypothesis has also been proposed.

H1c: Social influence positively relates to the intention to adopt social media recruiting technology.

Facilitating conditions

The construct of facilitating condition can be defined as the degree to which an individual has faith that organizational and technical infrastructures positively impact the system's

utilization (Venkatesh et al., 2003). The facilitating conditions include human resources, an existing system with adequate technical competency, internal and external support, financial strength, and training and development programs to enhance the skills and competencies. Upon analyzing when the individual believes that infrastructure supports the use of the system, he/she is more likely to adopt the technology (Oliveira et al., 2016; Macedo, 2017). Under this research, the variable of facilitating condition is considered as the degree to which an individual believes that the organizational infrastructure supports financial, human, technical, and intellectual resources along with the presence of technological infrastructure that will support the use of social media and technology in the context of the recruitment process. As per the above literature, the following hypothesis has also been proposed.

H1d: Facilitating conditions positively relate to the intention to adopt social media recruiting technology.

Hedonic motivation

For the understanding of hedonic motivation, Sitar-Tăut (2021) performed an empirical investigation regarding mobile learning use in the social distancing of COVID-19 and highlighted its mediation role. Research on hedonic motivation relates it to the fun factor achieved through individuals' technology experiences (Baabdullah, 2018; Tamilmani et al., 2019; Al-Azawei and Alowayr, 2020). Thus, hedonic motivation is considered one of the significant factors that impact the intention of an individual to adopt a technology. Using this construct is integrated with the fun side of using technology, and considering work as enjoyment can positively influence SMART adoption. In the context of technology adoption, hedonic motivation serves as the joy and fun elements derived from technology utilization, which is evidence that hedonic motivation plays a vital role in the use and adoption of technology in the recruitment process. Thus, in this research, the construct of hedonic motivation represents the degree to which an individual perceives using and adopting social media recruiting technology, which will be fun and joy during the recruitment process. As per the above literature, the following hypothesis has also been proposed in the current research.

H1e: Hedonic motivation positively relates to the intention to adopt social media recruiting technology.

Habit

In the context of behavioral intention, habit is known to have a direct or indirect impact on behavioral intentions (Baabdullah, 2018). A habit of using technology can be defined

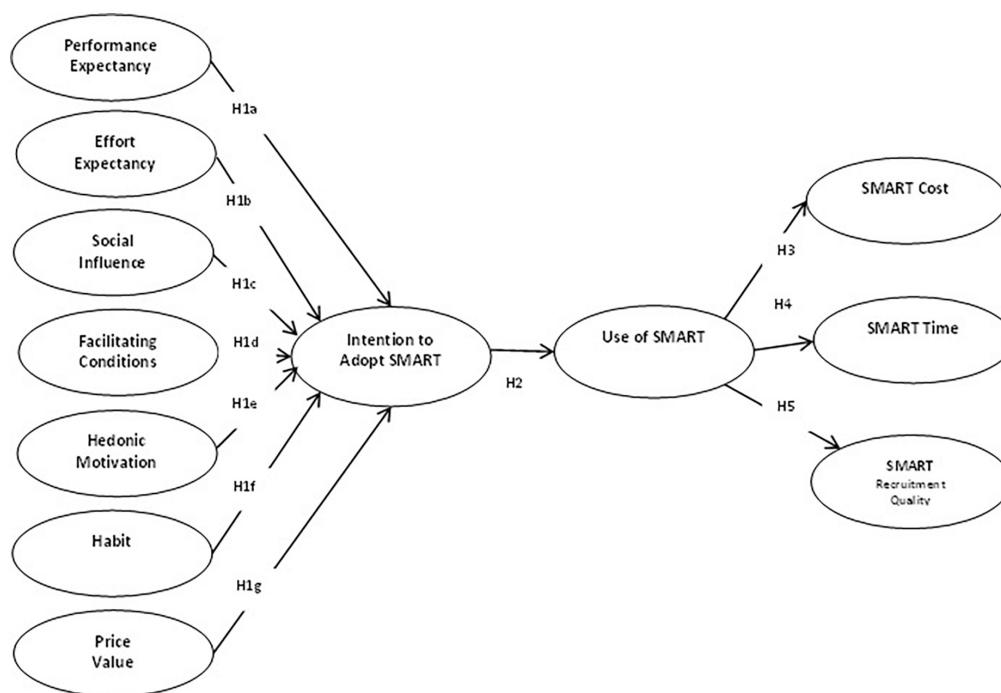


FIGURE 1
Research model and proposed hypotheses.

as an automated process that comes into its realization when an individual experiences using technology time and again. An individual needs to have an experience of using technology, but it is not enough to develop a habit; thus, the habit is developed when an individual explores and experiences the technological features in multiple periods (Morosan and DeFranco, 2016; Tamilmani et al., 2018). Thus, the habit variable can be positively related to social media recruiting technology adoption by considering the impact of previous learning experience and know-how about technology. Venkatesh et al. (2012) stated habit as a construct in which individuals are automatically bound to behave in a certain way due to learning. As per the above literature, the following hypothesis has also been proposed.

H1f: Habit positively relates to the intention to adopt social media recruiting technology.

Price value

Cost connected with the use of technology is an essential factor. Venkatesh et al. (2012) defined price value as a tradeoff between the perceived advantages associated with technology and the cost required to adopt a technology. This tradeoff between benefits and cost has a significant influence on developing consumer's intention about using technology. On the one side, the consumer spends costs for adopting new

technology; on the other side, there are so many financial paybacks that consumers will acquire from using technology (Faqih and Jaradat, 2021). Therefore, the perceived value of the technology is directly proportional to the cost incurred and other financial benefits gained after its adoption (Merhi et al., 2019). Organizations consider technology necessary if the benefits are improved efficiency, time-saving, and cost-effectiveness (Chen et al., 2021).

The literature has also highlighted some contrary results that perceived higher cost of technology adoption might negatively influence the consumer's intention (Verkijika, 2018; Beh et al., 2021). Factors that can convert this negative influence into positive are the perceived associated benefits of the technology (Tamilmani et al., 2021). As per the above literature, the following hypothesis has been proposed.

H1g: Price value positively relates to the intention to adopt social media recruiting technology.

Intention to adopt social media recruiting technology and use of social media recruiting technology

The intention of technology adoption can be defined as an individual considering to assume an act that leads to a prediction

of similar behaviors when individual acts as per his willingness (Al-Okaily et al., 2020). The intended behavior can be known as the motivational factor that impacts behavior and determines the potential indicators of an individual's willingness and also defines the level of effort to engage in a particular act or behavior (Parry and Wilson, 2009; Li et al., 2021). Thus, the intention to adopt social media recruiting technology is the main factor that impacts an organization's decision to utilize technological or innovative systems.

In UTAUT2, behavior is the outcome one expects after implementing the theoretical model and concepts, whereas the consideration of the use of SMART is a behavioral factor in the model. The use of SMART can be denoted as the implementation and use of technology for employee recruitment processes, which is led by the intentional behavior of SMART adoption (Olasina and Mutula, 2015). As per Venkatesh et al. (2012), the use of technology includes the strength, intensity, and frequency of technology used for some purposes in the companies; thus, Kashi (2015) mentioned the use of technology as gathering a pool of potential candidates by attracting, sourcing, and approaching them through an initial contact list for a specific job role with making effective use of social networking websites. As per the above literature, the following hypothesis has also been proposed in the current research.

H2: Intention to adopt social media recruiting technology is positively related to the use of social media recruiting technology.

Research about pre-hire recruitment outcomes using social media is still in its earlier phases. However, for the current aspect of the study, three outcomes of the use of SMART are highlighted through literature, i.e., SMART Cost, SMART Time, and SMART Recruitment Quality, whereas for pre-hire objectives, extensive research conducted by Kashi (2015) has been used and all definitions are extracted as per need and criteria. SMART cost is the conception of an individual in the association of cost with attracting, sourcing, and hiring candidates. The cost incurred for recruiting is one of the significant factors in HRM that affects the usage of technology; as for organizations, the use of technology is highly relevant to reducing costs in HR operations (Alsultanny and Alotaibi, 2015; Okolie and Irabor, 2017). Geyskens et al. (2006) highlighted that organizations constantly strive to minimize the cost of operations, and use of social media recruiting technology can reduce the overall cost of employee recruitment. Finding the right employee for the right position at the lowest possible cost is challenging for the organization (Melanthiou et al., 2015). Therefore, the high cost to perform the recruitment activity through traditional ways may be the encouraging or relative advantage that organizations may seek from SMART where this cost is comparatively lower. By considering the literature discussed, the SMART cost can be taken as one of the pre-hire outcomes of the use of SMART, and the following hypothesis can be proposed in the current research.

H3: Use of social media recruiting technology is positively related to SMART cost.

Use of social media recruiting technology and social media recruiting technology cost

A recruitment process model by Breagh (2008) suggested that aligning and devising a suitable recruitment process is similar to achieving recruitment goals. Several researchers stated that the objectives or outcomes of recruitment could be further segregated into two dimensions, i.e., pre-hire and post-hire objectives (Breagh, 2008, 2017; Kashi, 2015; Rehman, 2018; Pessach et al., 2020). Extensive research has been conducted in this perspective and pondered multiple features of post-hire outcomes, whereas the amount of information and research on the technological use aspect of pre-hire outcomes is less. The post-hire objectives include a low rate of turnover, positive retention rate, increased job satisfaction, employee engagement, and employee loyalty toward the company, and these variables have been measured and evaluated by the researcher repeatedly. Thus, another aspect of this research is to scrutinize pre-hire outcomes after accepting social media recruiting technology in the recruitment process.

Use of social media recruiting technology and social media recruiting technology time

By referring to the pre-hire objectives, employee recruitment is attracting, screening, selecting, and hiring the best among a larger pool of quality candidates for finding the person-organization fit. This activity, which comprises many hierarchical steps, takes extensive time and cost for successful completion; therefore, the traditional employee recruitment process is more time-consuming than social networking websites (Melanthiou et al., 2015). Other than the more extended period taken by the usual hiring process, authenticating the information provided by the candidates is also one of the biggest challenges for the recruiters (Ullah and Rehman, 2018). To improve the time required for the hiring process, organizations shifted toward online recruitment channels, and nowadays the best form is hiring through SNWs (Jin et al., 2016; Sengupta et al., 2021). The way organizations hire employees is changing quickly, and the tools developed for this purpose have evolved rapidly (Claus, 2019). It is a clear shift toward innovation and modernization

(Kashi, 2015); therefore, SMART time can be described as a conception of an individual considering association of time required for the fulfillment of a vacant job position.

Considering the literature discussed, SMART time can be taken as one of the pre-hire outcomes of the use of SMART, and the following hypothesis can be proposed in the current research.

H4: Use of social media recruiting technology is positively related to SMART time.

Use of social media recruiting technology and social media recruiting technology recruitment quality

It has become the norm for recruiters to believe that using social networking websites for hiring purposes enables better and quality candidates (Kashi, 2015; Ruparel et al., 2020). Through SNWs, quality candidates can be targeted by identifying the required knowledge, skills, and abilities. Furthermore, using the right social media platform is crucial as it dramatically affects recruitment quality and the number of applications received through used media (Villeda et al., 2019). Selection of the wrong platform to communicate and process job openings could result in receiving massive or unrelated

applicants in the form of negligent hiring, or this situation can be vice versa. Therefore, recruiters seemed to comprehend these facts and were inclined to accept social media technology to search for and recruit new candidates (Alexander et al., 2019). SNWs enable recruiters to set out their recruitment strategies to access quality recruits, and their management has improved using these platforms during the hiring process (Manuaba and Darma, 2021). An organization that accepts the social media recruiting technology will be in a position to attract potential passive candidates who might not apply for an advertised vacancy otherwise, and it also helps in getting more statistics about the candidates for assessing them better earlier to take final hiring decision (Manuaba and Darma, 2021; Wenzhi et al., 2021). SMART recruitment quality can be described as the quality and potential of human capital that can be accessed in the shape of a larger pool through social media recruiting technology.

Considering the literature discussed, SMART recruitment quality can be considered one of the pre-hire outcomes of use of SMART, and the following hypothesis can be proposed in the current research.

H5: Use of social media recruiting technology is positively related to SMART recruitment quality.

TABLE 1 Demographic attributes.

Demographic characteristics		n = 589	%
Gender of recruiting managers	Male	494	83.4
	Female	095	16.1
Age of recruiting manager (in years)	18–25	017	2.9
	26–35	230	39
	36–45	264	44.8
	46–55	070	11.9
	55 above	012	02
Designation	CEO	003	0.5
	General managers	005	0.8
	HRM heads	191	32.4
	Recruitment managers/HR head	384	65.2
	Others	006	1
Size of organization	Less than 100	075	12.7
	101–200	214	36.3
	201–300	156	26.5
	301–500	143	24.3
	501 and above	001	0.2
Operating sectors	Services	311	52.8
	Manufacturing	278	47.2

A conceptual framework

Based on the review of prior literature, the current study developed the conceptual framework and proposed hypotheses (refer to Figure 1).

Research methodology

Sample and procedure

The primary respondents of the study were HR managers or managers involved in recruitment activities of different organizations in Pakistan. For the generalizability of results, organizations operating in four diverse industries were taken, and they included manufacturing, services, exports, and trades. These organizations were listed with the Pakistan Stock Exchange (PSX) and the Lahore Chamber of Commerce. A total of 4,481 organizations were listed as the population of the study and a total of 589 responses were used in the study for data analysis. The selection of the sample was done based on the simple random sampling technique. Appropriateness of the sample size was confirmed with the help of G*Power (3.1.9.2) software, which calculated a sample size of 326 with 99% power, multiple correlations (R) of 0.30, and a significance level of 0.05. Another confirmation of sample size was acquired from the

study of Johnson and Gill (2010) and Taherdoost (2017), which described the sample size as 357 when the population size is 5,000 with a variance of population of 50%, a confidence level of 95%, and a margin of error of 5%. Data analysis was performed using SPSS and AMOS version 20.

In Table 1, demographic information is shown, revealing that male respondents (83.4%) are more in numbers than female respondents (16.1%). In total, 3% of the participants belonged to the age group of 18–25, whereas 39% of the respondents were under the age group of 26–35, respondents belonging to the age group of 36–45 were 45%, 12% belonged to the age group of 46–55, and the 2% above 55 years. Therefore, we can say that majority of the respondents belong to the middle age of 26–45. Respondents worked at different positions but were involved in recruitment decisions, and 1% of the respondents' profiles belonged to the post of CEO and general managers, 32% of respondent profiles were of managers, 65% of the profiles were of HRM persons/heads, and only 1% of the respondents were from different departments. In total, 12.7% of the organizations approached had an employee population less than 100, 36% of companies had an employee population ranging from 101 to 200, 26.5% of companies had an employee population ranging from 201 to 300, 24.3% of companies had an employee population ranging from 301 to 500, and less than 1% companies had an employee population of above 500. Data were collected through the manufacturing and service industries, of which 47% were from manufacturing organizations and 53% were from the service sector.

Measures of the constructs

The established measures were adopted in the study, and all used items were measured using a seven-point Likert scale. An extensive literature review was conducted to develop the questionnaire based on pre-existing measures. For the face validity of the questionnaire, three Ph.D. experts in the field of human resource management and five HR managers were contacted to review and suggest possible changes if required. Minor changes were made to the survey questionnaire based on the suggestions of experts and managers. The measures and the items of each variable in the current study are mentioned in Table 2.

Analysis methods

The recruitment model proposed in the study was assessed using a two-stage structural equation modeling (SEM). Research suggests that SEM has a beneficial impact on assessing complex models such as models involving higher-order constructs and relationships involving mediation or moderation (MacKenzie et al., 2011; Hair et al., 2012). SEM analysis adopted in this study

has a two-step approach involving a measurement model and a structural model analysis suggested by Anderson and Gerbing (1988). In the first step, the fit indices of the measurement model along with instrument validity and reliability were assessed, and in the second stage, structural model fit and relationship among variables were assessed to test the research hypotheses.

Data analysis and results

Construct reliability and validity

The reliability of measures used in the study was assessed with two essential values, i.e., Cronbach's alpha values and composite reliability (CR) values. Nunnally (1978) highlighted that Cronbach's alpha values and CR values should be greater than 0.70, and all values are within the range of cut-off values (Table 3). Fornell and Larcker (1981) recommended that average variance extracted (AVE) values should be greater than 0.50 for the assessment of convergent validity, and the values in Table 3 show the establishment of good convergent validity.

Discriminant validity analysis

For discriminant validity, the square roots of all AVE values of respective constructs were calculated and shown in the diagonal (bold values) of Table 3; all values were greater than the corresponding inter-correlation values, which concluded that the measurement model of the study has discriminant validity. In CFA, each indicator's mean of items and scores were computed. To establish the measurement model, confirmatory factor analysis (CFA) was performed. The CFA results are shown in Table 4, which demonstrated that all values are significant and meet threshold values, also all model fit indices exhibited good model fit including $\chi^2 = (1070.77)$, $p < 0.01$; NFI = 0.952; CFI = 0.989; IFI = 0.988; and RMSEA = 0.02.

Assessment of the structural model and hypotheses testing

The structural model for the current study revealed a good model fit. The assessment of the structural model (Table 5) showed that the construed model fulfills the fit criteria; $\chi^2 = (50.31)$, $p < 0.01$; NFI = 0.993; CFI = 0.996; IFI = 0.996; RMSEA = 0.04.

The sign, size, and significance of the structural path coefficients and R² values allowed an initial evaluation of the structural model. The standardized path coefficient (β) and t -values shown in Table 6 indicate that all the hypotheses were supported. The structural model gauged the testing of proposed hypotheses and calculated the fit of a model of recruitment

TABLE 2 Constructs and items used in the study.

Construct and references	Items
Performance expectancy Venkatesh et al. (2012)	<p>PE1. Recruitment staff find social networking websites useful in their jobs.</p> <p>PE2. Using social networking websites increase the chances of successful recruitment.</p> <p>PE3. Social networking websites help in accomplishing recruitment-related things more quickly.</p> <p>PE4. Using social networking websites increase the productivity of recruitment staff.</p>
Effort expectancy Venkatesh et al. (2012)	<p>EE1. Learning how to use social networking websites for recruitment purposes is easy.</p> <p>EE2. The interaction of recruitment staff with social networking websites is clear and understandable.</p> <p>EE3. Recruitment staff finds social networking websites easy to use.</p> <p>EE4. It is easy to become skillful at using social networking websites for recruitment purposes.</p>
Social influence Venkatesh et al. (2012)	<p>SI1. People who are important to us think that we should use social networking websites for recruitment purposes.</p> <p>SI2. People who influence us think that we should use social networking websites for recruitment purposes.</p>
Facilitating conditions Venkatesh et al. (2012)	<p>FC1. Our organization has necessary financial resources to use social networking websites for recruitment purposes.</p> <p>FC2. Our recruitment staff has ample knowledge to use social networking websites for recruitment purposes.</p> <p>FC3. Our organization has necessary technological resources to use social networking websites for recruitment purposes.</p> <p>FC4. A technical assistance is available when we have difficulties in using social networking websites for recruitment purposes.</p>
Hedonic motivation Venkatesh et al. (2012)	<p>HM1. Using social networking websites for recruitment purposes is a kind of fun activity.</p> <p>HM2. Using social networking websites for recruitment purposes is enjoyable.</p> <p>HM3. Using social networking websites for recruitment purposes is very entertaining.</p>
Price value Venkatesh et al. (2012)	<p>PV1. Using social networking websites for recruitment purposes is reasonably priced.</p> <p>PV2. Using social networking websites for recruitment purposes is a good value for the money.</p> <p>PV3. At the current price, using social networking websites for recruitment purposes provides a good value.</p>
Habit Venkatesh et al. (2012)	<p>HT1. Using social networking websites for recruitment purposes can become a habit for recruitment staff.</p> <p>HT2. Using social networking websites for recruitment purposes can become an addiction for recruitment staff.</p> <p>HT3. Recruitment staff must use social networking websites for recruitment purposes.</p>
SMART cost per hire Kashi (2015)	<p>COST1: SNWs help our organization in reducing costs incurred to get a qualified candidate to accept an offer.</p> <p>COST2: SNWs help our organization in reducing the sourcing and marketing costs incurred to bring in the right candidate.</p>
SMART Time to Fill Post Kashi (2015)	<p>TIME1: SNWs help our organization in reducing the time span between the first advertisement of a vacancy and the acceptance of the offer by a job candidate.</p> <p>TIME2: SNWs help our organization in reaching the relevant candidates in a shorter amount of time.</p> <p>TIME3: SNWs help our organization zero-in faster on ideal job candidates.</p>
SMART recruitment quality Kashi (2015)	<p>RQ1: SNWs help our organization in expanding the job candidate reach beyond their personal networks.</p> <p>RQ2: SNWs help our organization in targeting the passive candidates who might not otherwise apply for the job vacancy advertised.</p> <p>RQ3: SNWs help our organization in better recruiting for positions that require certain skills.</p> <p>RQ4: The acceptance of social networking websites has helped our organization in attracting qualified and scarce candidates</p> <p>RQ5: SNWs help our organization in getting more information about job candidates to better assess them.</p> <p>RQ6: SNWs help our organization in targeting a specific job level to recruit.</p>
Use of SMART Kashi (2015)	<p>ACC1: Our HR staff use SNWs for searching for candidates</p> <p>ACC2: Our HR staff use SNWs for establishing initial contacts</p> <p>ACC3: Our HR staff use SNWs for background review and reference check</p> <p>ACC4: Our HR staff use SNWs for disseminating information</p> <p>ACC5: Our HR staff use SNWs for advertising job vacancies</p> <p>ACC6: Our HR staff use SNWs for developing professional networks</p> <p>ACC7: Our HR staff use SNWs for creating or maintaining a group or page on SNWs for the organization</p>
Intention to adopt SMART Yoon and George (2013)	<p>ITA1. Our organization intends to continue using social networking websites for recruitment purposes.</p> <p>ITA2. It is likely that our organization will find ways to improve the use of social networking websites for recruitment purposes.</p> <p>ITA3. It is likely that our organization will take further steps to better incorporate social networking websites to current recruitment methods.</p>

TABLE 3 Inter-correlation matrix, reliability of constructs, composite reliability, and average variance extracted.

Variables	Mean	CA	CR	AVE	1	2	3	4	5	6	7	8	9	10	11	12
1. Performance expectancy	4.09	0.875	0.87	0.637	0.798											
2. Effort expectancy	4.14	0.882	0.88	0.653	0.771	0.808										
3. Facilitating conditions	4.29	0.879	0.87	0.644	0.744	0.742	0.802									
4. Social influence	4.56	0.780	0.78	0.640	0.732	0.727	0.706	0.800								
5. Hedonic motivation	4.28	0.825	0.82	0.613	0.727	0.725	0.718	0.725	0.783							
6. Price value	4.41	0.836	0.83	0.629	0.718	0.701	0.702	0.729	0.705	0.793						
7. Habit	4.35	0.823	0.82	0.607	0.726	0.699	0.704	0.710	0.697	0.730	0.779					
8. Intention to adopt SMART	4.13	0.853	0.85	0.657	0.727	0.707	0.727	0.679	0.702	0.674	0.694	0.811				
9. Use of SMART	4.11	0.924	0.92	0.636	0.784	0.778	0.796	0.742	0.752	0.732	0.716	0.765	0.798			
10. SMART cost	4.29	0.808	0.81	0.681	0.644	0.617	0.669	0.649	0.624	0.647	0.625	0.645	0.683	0.825		
11. SMART time	4.26	0.896	0.89	0.742	0.664	0.633	0.695	0.660	0.611	0.610	0.636	0.642	0.682	0.744	0.861	
12. SMART recruitment quality	4.23	0.936	0.93	0.711	0.704	0.703	0.692	0.716	0.676	0.698	0.686	0.675	0.697	0.784	0.768	0.843

Correlation is significant at the 0.01 level.

TABLE 4 Measurement model.

χ^2	1070.77	NFI	0.952
Df	836	CFI	0.989
χ^2/df	1.28	TLI	0.988
RMSEA	0.02	IFI	0.989

TABLE 5 Structural model of the current study.

χ^2	50.31	NFI	0.993
Df	24	CFI	0.996
χ^2/df	2.09	TLI	0.990
RMSEA	0.04	IFI	0.996

through social media recruiting technology. Application of path estimates figure (Figure 2) explains the graphical alignment to determine the number of inclusive constructs and their influence over one another (Kline, 2011). In Table 6, path estimates are presented.

Hypotheses 1a–g proposed that the performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, habit, and price value impact the intention to adopt SMART. Consistent with past research, the results revealed that performance expectancy has a significant positive impact on intention to adopt SMART ($\beta = 0.148$, $p < 0.01$) (H1a accepted). Similarly, the results indicated that effort expectancy ($\beta = 0.139$, $p < 0.01$) (H1b accepted), social influence ($\beta = 0.112$, $p < 0.01$) (H1c accepted), facilitating conditions ($\beta = 0.224$, $p < 0.01$) (H1d accepted), hedonic motivation ($\beta = 0.102$, $p < 0.01$) (H1e accepted), habit ($\beta = 0.096$, $p < 0.01$) (H1f accepted), and price value have a positive significant impact on intention to adopt SMART ($\beta = 0.093$, $p < 0.01$) (H1g accepted).

TABLE 6 Path estimates and testing of hypotheses.

Hypotheses	Paths	β	T
H1a	Performance expectancy-intention to adopt SMART	0.148***	5.60
H1b	Effort expectancy-intention to adopt SMART	0.139***	5.46
H1c	Social influence-intention to adopt SMART	0.112***	4.57
H1d	Facilitating conditions-intention to adopt SMART	0.224***	8.58
H1e	Hedonic motivation-intention to adopt SMART	0.102***	4.22
H1f	Habit-intention to adopt SMART	0.096***	3.92
H1g	Price value-intention to adopt SMART	0.093***	3.88
H2	Intention to adopt SMART-use of SMART	1.085***	29.43
H3	Use of SMART-SMART cost	0.839***	23.77
H4	Use of SMART-SMART time	0.850***	23.99
H5	Use of SMART-SMART recruitment quality	0.912***	25.80

***Significant at the 0.001 level.

Hypothesis 2 proposed that the intention to SMART has a positive relationship with the use of SMART. Like previous literature, the results showed that the intention to SMART appeared to be positively related to the use of SMART ($\beta = 1.085$, $p < 0.01$), which supports H2.

Hypotheses 3–5 proposed that the use of SMART is significantly related to SMART cost, time, and recruitment quality. Consistent with previous research, the analysis revealed the simultaneous role of the use of SMART. The current study explained that the use of SMART significantly relates to SMART cost ($\beta = 0.839$, $p < 0.01$) (H3 accepted), SMART time ($\beta = 0.850$, $p < 0.01$) (H4 accepted), and SMART recruitment quality ($\beta = 0.912$, $p < 0.01$) (H5 accepted).

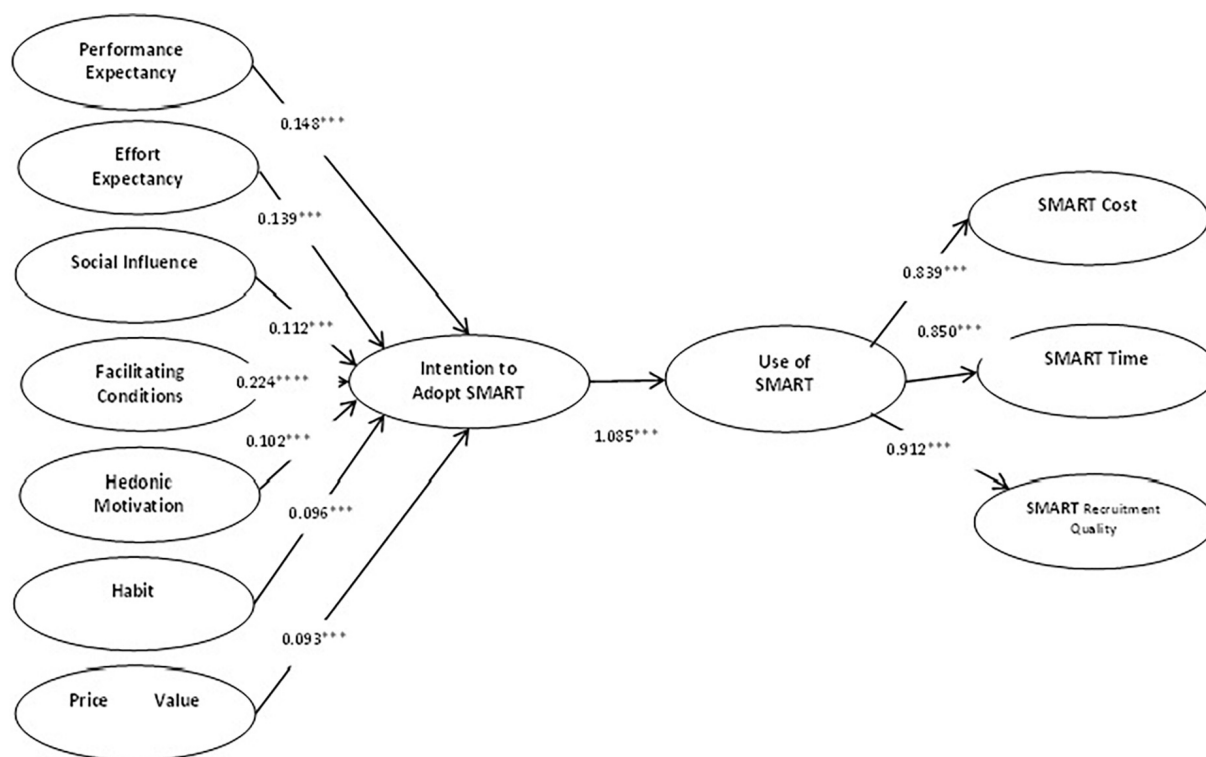


FIGURE 2
The structural model with path estimates.

Path model disclosed that all proposed relationships were proved among performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, habit, price value, intention to adopt SMART, use of SMART, SMART cost, SMART time, and SMART recruitment quality to be significant. Thus, all hypotheses of the study are accepted, and the model is significantly fit (Table 6) and establishes the recruitment model.

Discussion

Organizations have realized the need and use of social networking websites (SNWs) for recruiting top and rare talent. SNWs have given a new face to recruitment trends. SNWs are considered an important recruitment tool though recruiting through social media technology is an ongoing credible area of concern for researchers and practitioners. We have discussed in the study how social media recruiting technology (SMART) can help in achieving desired recruiting outcomes of an organization for which the study used the UTAUT2 framework to explore and establish the empirical links between intention to adopt social media recruiting technology (SMART), acceptance of SMART, and the outcomes of SMART. This study proposed a conceptual model for recruitment. Acceptance of SMART

significantly predicted SMART pre-hire outcomes such as cost, time, and recruitment quality. Such a comprehensive model for employee recruitment has never been discussed in earlier studies, through which organizations will get an opportunity to experience enhancement in the scope of recruitment as a whole instead of considering recruitment as a traditional procedure. The use of information technology can be expanded for progressive measures in employee recruitment. UTAUT2 framework has been used in the study to explore and establish the empirical links between intention to adopt SMART, use of SMART, and the outcomes of SMART. The extensive cross-sectional data of 589 manufacturing and service-oriented Pakistani organizations were collected to test the hypotheses and proposed research model.

H1a-g investigated the influence of different factors on the intention to adopt SMART. The findings revealed that performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, and habit were strong predictors of the intention to adopt SMART. These findings are in line with the strong evidence in prior literature (Morosan and DeFranco, 2016; Baabdullah, 2018; Tamilmani et al., 2018), indicating that considering such factors can lead to the intention to adopt SMART. Moreover, these findings are also consistent with the components of the UTAUT2 model provided by Venkatesh et al. (2012), and the study narrated that all factors

are significant and have a positive relationship with the intention to adopt SMART. As expected, outcomes of high performance and convenience are associated with social media recruiting technology considered to be the driving source to develop an individual's intention to use technology; similar to the earlier studies (Kurfali et al., 2017; Kemp et al., 2019), performance expectancy and effort expectancy have been evolved in this study as the most vital factors influencing the intention to utilize technological means. Findings of the study have also highlighted that if someone around is giving importance and significance to work or the use of technology, then there is a likelihood of the individual being more inclined toward the work and technology adoption (Rehman, 2018; Rehman et al., 2021). Another vital factor facilitating conditions is also proved to have a significant impact on the intention to adopt social media recruiting technology. Upon analyzing the results, a resemblance with earlier studies has been found (Oliveira et al., 2016; Macedo, 2017), and it has been observed that when the individual believes that infrastructure is in support of the use of the system, then he/she is more like to adopt the technology. Another critical factor influencing the intention to adopt social media recruiting technology is hedonic motivation, as it is associated with the fun side of using technology and considering work as enjoyment; therefore, it proved to be a positive influence on SMART adoption. An individual needs technology experience, but it is not enough to develop a habit; thus, it is developed when an individual explores and experiences technological features in multiple periods. Thus, the habit variable has been observed to have a positive relationship with social media recruiting technology adoption by considering the impact of previous learning experience and know-how about technology. The price value is the last factor described in UTAUT2, in line with the previous literature (Faqih and Jaradat, 2021; Tamilmani et al., 2021); it also proved to be associated with the tradeoff between benefits and cost for developing the intention of a consumer about use of technology. It is directly proportional to other financial benefits gained from the technology after successful adoption (Barba-Sanchez et al., 2018). Organizations do not consider technology necessary until or unless the provided benefits are improved efficiency, time-saving, and cost-effectiveness.

H2 examined whether the intention to adopt SMART has a positive and significant relationship with the use of SMART, and the findings confirmed that the intention to adopt SMART positively relates to the use of SMART. This finding follows previous literature, which suggested that the intended behavior could be considered the motivational factor that may influence behavior and determines the potential indicators of an individual's willingness and effort to engage in a particular act or behavior (Parry and Wilson, 2009; Li et al., 2021). Furthermore, this finding is in line with the study (Kashi, 2015; Olasina and Mutula, 2015). It is argued that the current study also sights the pre-hire SMART recruitment outcomes that ultimately fulfill the

organization's recruitment objective. This finding is consistent with Venkatesh et al. (2012) and Kashi (2015) that the insight about the use of SMART may help in gathering a pool of potential candidates by attracting, sourcing, and approaching them *via* social networking websites for a specific job role. It is highly likely that the intention to adopt social media recruiting technology could be the main factor that impacts the decision of an organization to utilize technologically innovative recruitment systems.

H3–H5 investigated whether the use of SMART leads to SMART outcomes such as cost, time, and recruitment quality. The results corroborate support for these hypotheses like previous literature (Alsultanny and Alotaibi, 2015; Manuaba and Darma, 2021; Sengupta et al., 2021) because the use of SMART significantly predicted SMART outcomes such as cost, time, and recruitment quality. The literature on the use of SMART has suggested that aligning and devising a suitable recruitment process is similar to achieving recruitment goals (Breagh, 2008). Prior literature suggests that the objectives or outcomes of recruitment can be further segregated into two dimensions, i.e., pre-hire and post-hire objectives (Breagh, 2008, 2017; Kashi, 2015; Rehman, 2018; Pessach et al., 2020). These findings differentiate the study from previous research that has pondered over multiple features of post-hire outcomes, whereas this study targeted the aspects of pre-hire outcomes where the amount of information and research on technological use is little. The current study highlighted three outcomes of the use of SMART highlighted through literature, i.e., SMART Cost, SMART Time, and SMART Recruitment Quality for pre-hire objectives. The findings of the current research indicated that the SMART cost, the SMART time, and the SMART recruitment quality could be improved through the use of SMART. These findings could be considered the unique contribution of the current study. Such a comprehensive model has never been discussed in earlier studies and opened the door to innovation to meet global technology innovation challenges, especially in the new normal era after the pandemic. Thus, the current research supported that the pre-hire outcomes could be improved after the use of social media recruiting technology in the recruitment process.

Study implications

This study has highlighted significant theoretical and practical implications for researchers, SNWs users, employee recruiters, and policymakers, which are as follows:

Theoretical implications

The current study has two key theoretical implications. *First*, the current study has analyzed the theoretical foundation

of social media recruiting technology (SMART), which gives reason to organizations to accept or reject the technology. In contrast, the conceptual model with factors description in the context of empirical validation has been examined along with different SMART outcomes. The primary purpose of this research was to highlight the use of social media and information technology in employee recruitment by providing a conceptual recruitment model in the aspects of theoretical foundations and empirical evidence on the factors and outcomes leading to the use of social media recruiting technology. The results showed that the model of social media recruiting technology for employee recruitment had been validated in the contextual framework of Pakistan to extend the body of current knowledge. The conceptual model of this study has integrated the Extended Unified Theory of Acceptance and Use of Technology (UTAUT2) in the aspect of the use of SMART and for the evaluation of pre-hire outcomes of SMART in an organizational setting which can be considered a positive step toward sustainable development. This recruitment model can further serve other developing and developed nations with less difference in a contextual setting.

Second, the current research has theoretically highlighted the factors of the Extended Unified Theory of Acceptance and Use of Technology (UTAUT2) as influencing variables for the use of SMART and SMART cost, time, and recruitment quality as outcome variables in the context of employee recruitment. This study has validated the revision of UTAUT2 and extension in the theory of employee recruitment through technological innovations. This study proposed a framework of SMART from the perspective of Pakistani organizations to minimize the gap in theoretical and empirical knowledge. One significant dynamic in the extension of SMART is the critical aspect of staffing due to global competitiveness. Therefore, organizations need to accept SMART to attract and retain potential and qualified candidates for sustainability.

Practical implications

It has become a need of the day that all organizations should incorporate the latest employee recruitment trends to keep up with modern drifts. The inclusion and integration of SNWs in businesses have modified the recruiting trends and improved the recruitment quality with lower cost and optimum recruiting time with a parallel contribution to achieving innovation. Besides the benefits in terms of cost, time, and quality, SNWs are a more significant source to target a more extensive and relevant pool of audiences. In some ways, recruitment through SNWs is the contemporary form of E-recruitment program that encourages organizations to enrich their hiring decisions by targeting and ensuring a pool of potential candidates.

The current research has two significant practical implications for recruiters and policymakers. *First*, the

current study will guide professionals in effectively using social networking websites (SNWs) and platforms. SNWs help organizations win the battle of acquiring human capital through less time and money consumption with quality candidates. HR and recruitment managers can use SMART positively and further explore and gather information about candidates to make the recruitment process more effective. Furthermore, the managers may accomplish their strategies to group the potential ones from the pool of entrants. The study substantially contributes to human resources, innovation management, and information technology. It opens a new platform to improve the strategies compared to traditional recruitment tactics and safeguards the interest of both organizations and candidates.

Second, the current study revealed several recruitment outcomes. It emphasized the applications of social media recruiting technology by the adjacent bunch of factors, intention to adopt SMART, use of SMART, and the outcomes of SMART. Meanwhile, the study proved how the recruitment process might be uplifted through the use of SMART to scrutinize higher-quality entrants. The study also proposed a mechanism that curtails the proceeding time of employee recruitment and also lightened the lesser associated cost with the adulation of a comprehensive model that has not been studied so far. The outcomes of the study highlighted the importance of intention to adopt SMART and the use of SMART endorsed by the organizations and HR managers, keeping in view the benefits of SMART outcomes regarding pre-hire objectives. The pre-hire objectives incurred as the consequence of the use of SMART and further completion of the recruitment process suggested by [Breaugh \(2008\)](#) include scrutinizing the quality candidates for concerned positions, the shortened time of the recruitment process, and lesser proceeding cost with the achievement of sustainability objectives at the organizational level.

Limitations and future work

Besides the contribution, the current study shares some common limitations, which may arise the need for future research. *First*, the current study has grouped the data set by switching the organizations registered on the Pakistan Stock Exchange and Lahore Chamber of Commerce, Pakistan. For a broader understanding, current phenomena may be stretched by keeping sight of the organizations registered at other chambers of Pakistan and different countries. For replication of the study, a comparative study can also be performed. *Second*, the considerable segment of respondents was men, with a percent of 84, which may provoke gender nepotism. So, this SMART model should be evaluated in countries where men and women work in equal ratios. In the future, the current model could be deployed by other constructs of adjacent nature like more technological factors or by framing some personality-related factors of recruiting managers. *Third*, the current study did

not put the quantum of business age, size, and nature under their areas of concern, which can be moderated in future studies. Future researchers are encouraged to build acquainted relations with such factors by developing a mechanism for their assimilation. *Fourth*, this study has worked on self-reported data but multi-layer studies should be conducted with this comprehensive model in the future for replication.

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. Written informed consent from the patients/participants or patients/participants legal guardian/next of kin was not required to participate in this study in accordance with the national legislation and the institutional requirements.

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Author contributions

SR presented main theme and worked on overall analysis and methodology. AU worked on introduction and data collection. KN worked on literature review. AE worked on discussion. HE worked on proofreading and implications. 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.

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Green human resources management: A novel tool to boost work engagement

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Increasing environmental awareness in business life has given way to Green Human Resources Management practices. The positive corporate image created by GHRM is encouraging for many employees and boosts their work engagement. GHRM practices make employees feel proud about their organization and creates a value-based ground for working in their current companies. Actually, internalized green inclinations of organizations, namely, value alignment between an organization and an employee, can make their employees feel greater psychological ownership about their companies, leading to greater engagement as it is suggested in social identity theory. Being inspired from psychological ownership literature, in this study, it is assumed that being exposed to Green Human Resources Management practices can make employees feel higher levels of work engagement and psychological ownership can have a mediator effect in this relationship. The model has been a tested model among 255 Turkish white-collar employees working in a manufacturing sector. Analyses have been carried out using the AMOS structural equation program and the PROCESS program. Results confirmed the above assumptions, confirming the assumptions of social identity theory and revealed the existence of mediator effect in the relationship between GHRM and work engagement of employees, illuminating the importance of GHRM for employees' positive attitudes toward their organization.

KEYWORDS

human resource management, social sustainability, green human resources management, psychological ownership, work engagement

Introduction

The growing awareness about environmental sustainability has given way to the concept of green human resource management. Ren et al. (2017) explained this novel HRM approach as a “phenomenon relevant to understanding relationships between organizational activities that impact the natural environment and the design, evolution, implementation, and influence of HRM systems. GHRM encompasses implications regarding hiring and retaining environmentally friendly employees and ways to retain them (Susanto et al., 2022). Moreover, in order to talk about a strong GHRM department, organizations should implement proper training programs, rewards, and benefits systems (Mishra, 2017). That is to say, GHRM practices facilitate the application of green practices through different practices, such as recruitment and selection, wage management, performance management, and exit policies (Nisar et al., 2021).

The importance of GHRM stems from the fact that it is a critical component of an environment-oriented strategic plan to build, maintain, and strengthen sustainable development (Farooq et al., 2021). Companies proactively engaging in GHRM can create a “green” image, and this green image can prevent negative impacts of adverse events. Actually, GHRM practices can be accepted as predictors of green environmental performance impacting a supply chain: production, culture, strategies, and even employee behaviors (Benevene and Buonomo, 2020).

GHRM creates a positive employer brand for a company leading to many positive organizational outcomes, including work engagement. In this context, work engagement should be understood as physical and psychological conditions related to work cognitively and emotionally, encouraging attitudes and behaviors necessary for achieving organizational level goals (Keyko et al., 2016). Emotional attachment with a target of possession can positively affect employees’ attitudes in an organization and result in higher levels of identification and engagement (Schaufeli et al., 2017), and it can create advantage for organizations on their journey for sustainability by making employees prefer to stay in their organization and work hard for its strategic goals (Carmeli et al., 2022). As to Chang et al. (2020), a common vision regarding an organization’s green initiatives conveyed through GHRM can promote sustainable development, and this can strengthen employees’ feelings of psychological ownership. Hence, in this study, we assumed that employees embrace green tendencies of their organizations and feel greater ownership on their organizations leading to higher levels of engagement. Unfortunately, in the extant literature, there is a scarcity of research examining the role played by GHRM in enhancing psychological ownership and work engagement. Previous studies on GHRM-work engagement relationship (Aktar and Islam, 2019; Aboramadan, 2020; Darban et al., 2022) revealed a direct effect of GHRM on work engagement. On the one hand, many other studies revealed that, as an organizational outcome, work engagement is possible mostly through feelings of psychological ownership (Rapti et al., 2017; Su and Ng, 2019; Wang et al., 2019), which makes psychological ownership worth examining in the relationship between GHRM and work engagement.

In this point, social identity theory, explaining that individuals tend to attach their possessions, is illuminating in revealing the positive effect of psychological ownership on engagement (Narcikara, 2017). Cognizant of the need to better understand the impact of GHRM practices on work engagement, in this study, it is aimed to illuminate the possible effect of GHRM on work engagement levels of employees and the possible mediator effect of psychological ownership in the relationship between GHRM and work engagement. Hence, the research question of the study is explanatory about psychological ownership’s mediator effect in the possible positive effect of GHRM on work engagement. GHRM studies are still infertile in

HRM literature despite its importance regarding sustainability and employee engagement (Malik et al., 2021; Qadri et al., 2022). In previous studies, although there are a considerable number of studies revealing the positive effect of HRM on psychological ownership (Masnita et al., 2019) and on work engagement (Shantz et al., 2016; Sousa et al., 2021), there is not any study explaining the above-mentioned relationships in relation to GHRM. Moreover, it is seen that there is no previous study about the possible mediator effect of Psychological Ownership in the relationship between HRM/GHRM and work engagement. Hence, as a considerable contribution to GHRM literature, the relationship between GHRM, psychological ownership, and work engagement, which has been identified as a gap, will be clarified. In addition, as a managerial output, it is anticipated that findings of this study can encourage the use of GHRM as a human resources tool of ensuring work engagement and retention of employees contributing to a greater possibility for sustainable organizations. This study was conducted especially in the Turkish production sector, since this sector is the one that needs environmentally friendly activities most. Moreover, it is the most noteworthy sector in that it is the sector that has the biggest potential to threaten the environment. Therefore, it is thought that an environmentally conscious HRM structuring in the production sector will make a greater contribution to the stakeholders, especially to the employees, and will increase their work engagement.

Theoretical background and development of hypotheses

The green performance of companies is an emerging issue, gaining greater importance on the agenda of global corporations (Guerci et al., 2016), and GHRM research has become popular after 2011 (Paulet et al., 2021). As to Ren et al. (2017), the alignment of human resources management practices with an organization’s green policies creates ‘Green Human Resources Management’. GHRM research is explained as the HRM aspects of environmental management (Renwick et al., 2013). It is those parts of sustainable human resources management dealing with specifically environmental sustainability (Wagner, 2013).

According to Ren et al. (2017), for providing environmental awareness, employees are the key to success. The basic requirement of GHRM is empowering workers so that they can make recommendations that are effective for contributing to the environment (Ali et al., 2020). GHRM motivates employees by rewarding their green performance and by stimulating employees’ involvement by empowering them and creating an environmentally friendly climate (Aboramadan, 2020; Ansari et al., 2021). It is concerned with changing ordinary employees into green employees so that they can help their organizations in green issues (Arulrajah et al., 2015; Jermsittiparsert, 2021) and in this transition, the sense of ownership and engagement

are important. GHRM practices develop green abilities through HR activities like green recruitment, selection, performance management, and training. For example, Green recruitment and selection try to attract employees with green awareness (Tang et al., 2018), whereas green training attempts to change attitudes and emotional involvement toward green organizational goals (Zibarras and Coan, 2015) and green performance management reward pro-environmental contribution of employees (Übeda-García et al., 2021).

GHRM lowers absenteeism and turnover levels (Al-Hajri, 2020; Darban et al., 2022) and organizational commitment (Shoaib et al., 2021) and contributes to work engagement (Aktar and Islam, 2019; Alshaabani et al., 2021). Actually, work engagement is a dynamic cognitive and emotional dimension, explaining personal enthusiasm about one's work (Wu et al., 2022). In this study, it is believed that studying work engagement is significant since it contributes to higher performance (Neuber et al., 2022; Yao et al., 2022) and intention to stay (Parent-Lamarche, 2022) that are necessary for applying GHRM. It is signified by energy, involvement, and self-efficacy (Chen et al., 2020). It is a positive emotional state related to work that should be explained in three main dimensions: vigor, dedication, and absorption (Schaufeli et al., 2006; Gómez-Salgado et al., 2021). Vigor explains high levels of energy and resilience at work; it is persistence in times of turmoil; dedication explains feelings of enthusiasm and importance; and absorption refers to being fully engrossed in one's work (Schaufeli et al., 2006). In fact, work engagement is a multiaxial concept effected by multiple factors including organizational climate, job resources, psychological resources, and sense of ownership (Keyko et al., 2016). Moreover, as Rollins et al. (2021) explain, a sensible work climate can boost employee work engagement.

In this study, we assumed that one possible antecedent of work engagement is psychological ownership. Psychological ownership is a psychologically felt phenomenon in which individuals develop a sense of ownership for a goal (Van Dyne and Pierce, 2004). It is the result of concentration, consideration, and deliberation on one's possessions (Jami et al., 2021). It helps individuals create and maintain their self-identity (Fritze et al., 2020). Antecedents of psychological ownership are perceived control, self-investment, and knowledge (Morewedge et al., 2021). With the help of psychological ownership, properties associated with the self are transferred to the target, thus increasing emotional attachment to the target and boosting its value (Weiss and Johar, 2016).

In this study, social identity theory and conservation of resources theory have been considered as a theoretical framework while building a hypothesis. Identification is anchored in social identity theory, and, in this theory, engagement is closely related with reasons creating social membership (Pierce et al., 2001). According to social identity theory, possessions serve as symbolic expressions of the identity, and they are closely connected with individuality; that is why

individuals engage to an object and use this ownership for defining themselves and expressing their identity (Pierce et al., 2001). On the one hand, the sense of ownership creates the inclination to protect the possession; that is why employees identifying themselves with their organizations often make their best to continue their existence in their social groups and engage to their organizations (Narcikara, 2018). Similarly, conservation of resources theory claims that individuals have an innate tendency to protect their both tangible and intangible possessions like their membership in a group, their jobs, their friends, etc.; hence, people consider it charming to continue their existence in their social groups (Hobfoll et al., 2000).

In relation to the positive associations mentioned above, in this study, it is assumed that psychological ownership has the capacity to contribute to positive outcomes, such as motivation, satisfaction, engagement, high performance, and continuity, which are necessary for attaining organizational ends targeted by GHRM. Sense of ownership regarding an organization will make the employees stick strictly to its values and strategies (Maharani et al., 2021), which is significant for creating devoted employees to green issues and ensuring their sincere engagement to the company. The fact that the mediator effect of psychological ownership in the relationship between GHRM and work engagement has not studied in the extant literature, in this study, it is aimed to see whether the positive effect of GHRM on work engagement is possible through psychological ownership or not.

Hypothesis

When we turn our lens to work engagement, it can be seen that myriad factors affect work engagement levels of employees. Motivation enhancing human resources practices (Amir et al., 2022; Beltrán-Martín et al., 2022) and value match between an individual and an organization (Okolie, 2022) are considered as significant antecedents of work engagement. According to social identity theory, when individuals work in an organization with responsible practices they are proud of, their identification with their organization increases (Yang et al., 2021). In this sense, employees who think that the reputation of their institutions has increased due to GHRM will also feel greater social identification with their company, and this will increase their work engagement since they will enjoy being part of a highly reputable organization (Ahmad et al., 2022). In the extant literature, we can come across considerable number of empirical proofs revealing the positive impact of socially responsible human resources management practices on employee work engagement supports this view (Abid et al., 2018; Gürlek and Tuna, 2019). In relation to GHRM-work engagement relationship, there are also empirical pieces of evidence inspiring our first hypothesis. For instance, Aboramadan (2020), Ababneh (2021), and Darban et al.

(2022) proved the positive relationship between GHRM and work engagement. Hence, being inspired from the extant literature, it is assumed that, when individuals notice their organizations' socially responsible GHRM practices, their work engagement levels improve. So, it is hypothesized that:

H1: GHRM has a positive effect on work engagement.

On the one hand, as O'driscoll et al. (2006) suggest, sensible and responsive business environments lead to the development of psychological ownership since increased control over the target gives the opportunity to better know and focus on the target. Similarly, Appelbaum et al. (2000) suggest that HRM practices that promote abilities, motivation, and opportunities of individuals and create a responsible organizational climate can contribute to psychological ownership feelings of employees. Anyway, in the related literature, it has been revealed that GHRM leads to a sensible organizational climate, leading to organizational commitment that gives birth to psychological ownership in the long run (Pham et al., 2019). As it is explained in conservation of resources theory, individuals tend to attach to their possessions when they are committed to them (Zhang et al., 2021). Besides that, in previous studies, traces for the positive effect of human resources practices on psychological ownership can be found that encouraged us for studying the same effect regarding GHRM. For instance, Mayhew et al. (2007) signified that many human resources-related factors, including job design and autonomy, affect psychological ownership perceptions of employees. Later, Degbey et al. (2021) and Waqas et al. (2021) confirmed that HRM practices have the potential to affect psychological ownership feelings of employees. In relation to GHRM, Chang et al. (2020) also revealed the positive effects of green values in an organizational climate that can be created by GHRM on psychological ownership feelings of employees. Being inspired by the extant literature, we assumed that GHRM practices will also have a positive impact on employee psychological ownership. Hence, it is hypothesized that:

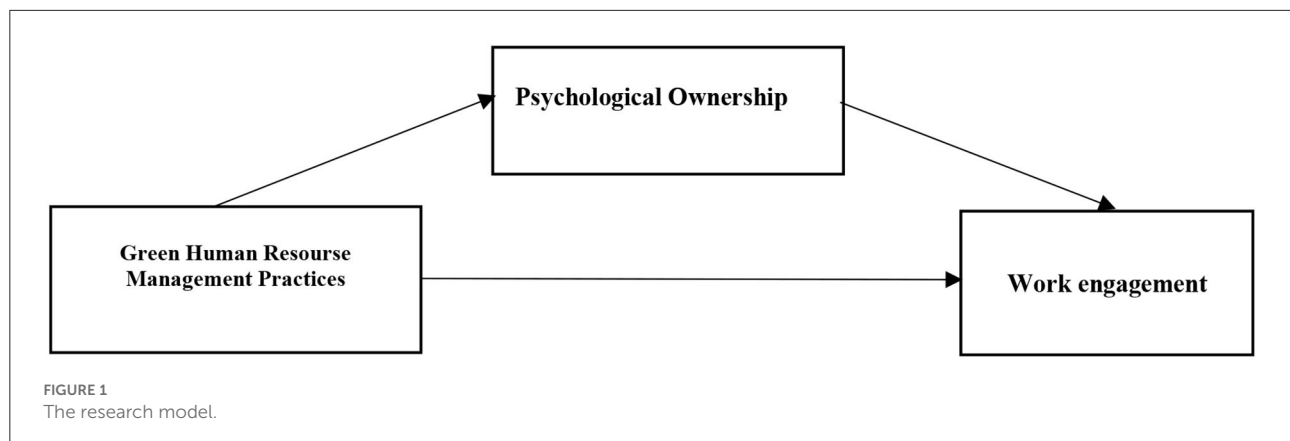
H2: GHRM has a positive effect on psychological ownership of employees.

The basic tenet of conservation of resources theory is that people try to retain and protect those things that they value (Hobfoll et al., 2000). Interestingly, this is a mutual relationship since, when individuals develop a sense of ownership, they also build an emotional attachment with the target, and this increases their engagement with the target (Morewedge, 2021). Similarly, when employees build a sense of ownership regarding their organizations, they will become emotionally attached to their organization, and

this will build higher levels of work engagement (Baker et al., 2021). According to the Resource Investment principle of conservation of resources theory, individuals invest in resources to prevent the loss of them (Zhou and Chen, 2021). Considering this fact, in this study, it is assumed that, when employees have a sense of ownership regarding their organizations, they would prefer continuing to be a part of these organizations and working hard with enthusiasm and engagement in order not to lose their membership. In this point, there are empirical proofs revealing this positive relationship. For example, Su and Ng (2019) revealed a positive effect of psychological ownership on work engagement among social workers. Wang et al. (2019) confirmed the same relationship in the Chinese context. Later, Sokro et al. (2020) confirmed the same relationship empirically. Similarly, Khan and Gul (2021) revealed the positive effect of psychological ownership on work engagement and revealed the mediating role of work engagement in the relationship between psychological ownership and happiness. In addition, Nurtjahjani et al. (2021) also confirmed that the higher the employees' belief in a just world in their organizations, the stronger the relationship between psychological ownership and work engagement. Being inspired by these studies, it is hypothesized that psychological ownership will have a positive effect on work engagement. Thus, the following hypothesis has been built:

H3: Psychological ownership has a positive effect on work engagement.

According to Primary Loss Principle of Conservation of Resources theory, the effect of resource loss is greater than resource gain (Zhou and Chen, 2021). Hence, employees would not want to lose the comfort and satisfaction of working in a sensible, stakeholder-friendly positive climate. For many individuals, being exposed to GHRM can boost their Psychological Ownership feelings, and this can mediate the effect of GHRM on work engagement, owing to primary effect. In the related literature, although there is no similar previous study showing the effect of GHRM practices on work engagement through psychological ownership, there are some previous studies showing the positive effect of human resources practices, in general, on work engagement through the mediator effect of psychological ownership. In this sense, in the research conducted by Duran (2019), it was determined that psychological ownership has a mediating effect on the positive effect of human resources practices on work engagement. Similarly, Olckers and Du Plessis (2012) revealed the mediator role of psychological ownership in retaining and engaging talent in HRM's effect on engagement and intention to stay, and, later, being inspired from these studies, we assumed that psychological ownership can have the same mediator effect on the



relationship between GHRM and work engagement. Thus, we hypothesized that:

H4: Psychological ownership mediates the relationship between GHRM and work engagement.

Research design

The purpose of this research is to test the mediating role of psychological ownership in the relationship between GHRM and work engagement. In the research model, GRHM was included as an independent, work-related, psychological ownership tool variable. It is aimed to collect the research data from white-collar employees operating in the production sector in Istanbul. It is aimed to reach people working in the automotive, chemical, and food sub-sectors within the production sector. The manufacturing sector is specifically chosen for the study since green issues are more important in this sector in relation to tangible production and greater possibility of affecting the environment.

As it is shown in Figure 1, the research model describes the relationship between green human resources management practices (GHRM), psychological ownership (PO), and work engagement (WE).

Materials and methods

Samples and procedures

Both the face-to-face survey method and the online survey method were used to collect data for this study. Face-to-face surveys have been carried out in companies that allow the application of the survey during work hours, whereas online surveys have been collected through social media

portals mostly *via* LinkedIn. The accounts of 30 thousand professionals were examined, and an online questionnaire was sent to the profiles suitable for the sample of our research. The constructs in our study were developed using measurement scales adopted from previous studies. Survey items were responded with five-point Likert scales, with anchors ranging from strongly disagree (1) to strongly agree (5). We used a convenience sampling method to collect our data. Convenience sampling has been preferred, owing to time and budget restrictions in this study. Approximately, 320 surveys have been delivered to people working in Istanbul using the face-to-face survey method. Moreover, 540 surveys were disseminated *via* an Internet survey program to reach applicants working with the teleworking model. Approximately, 260 people (83%) answered our questionnaire. The forms of 10 participants were excluded from the evaluation, and 255 forms were analyzed.

We distributed our surveys between October 2021 and November 2021. Participation from companies employing 50 or less people was not taken into account while collecting data. In Turkey, Istanbul is the main business center, and nearly all corporate manufacturing firms are located in Istanbul, which directed our choice about sampling.

Since it is difficult to estimate the number of people in the research population, significant absolute values were used for statistical analysis in determining the sample size. There are different approaches among scientists based on the number of variables in determining the sample size. While some scientists advocate having 10 times as many participants as the number of variables, some scientists consider five or at least 100 participants per variable sufficient (Sencan, 2005, p. 362). The sample size of 200 people is considered sufficient for reliable factor analysis (Çokluk et al., 2018, p. 206). As a general rule, confirmatory factor analysis and SEM analysis are not considered appropriate for data below 150 (Müller, 2003; Gürbüz, 2019, p. 30). Based on these assumptions, it was aimed to reach > 200 samples

TABLE 1 Sample characteristics.

Measure		Frequency	Percent
Age	20–29	86	34.4
	30–39	95	38
	51–59	56	22.4
	60+	2	0.8
Gender	Male	122	48.8
	Female	128	51.2
Position	Top manager	33	13.2
	Middle manager	75	30
	HR manager	8	26.8
	Sub manager	67	3.2
	HR stuff	30	12
	Consultant	23	9.2
	Other	12	4.8
	Missing	2	.8
Seniority	0–2 year	71	28.4
	3–5 year	73	29.2
	6–10 year	44	17.6
	11–20 year	43	17.2
	21+ year	19	7.6
Marital status	Married	143	57.2
	Single	107	42.8
Emoloyee number in company	51–250	32	12.8
	251–500	21	8.4
	501–1,000	32	12.8
	1,000+	165	66
Sector	Automotive	104	41.6
	Chemistry	60	24
	Food	86	34.4

in data collection. Details of the participants are shown in Table 1.

Measurement tools

GHRM scale

Green human resources management (GHRM) was measured by a 20-item GHRM scale developed by Shah (2019) and adapted to Turkish by Öselmis (2020). This scale involves five sub-dimensions: green job design (4 items), green recruitment and selection (4 items), green training and development (3 items), green performance appraisal (4 items), and green wage management (5 items). On a 5-point Likert-type scale, the respondents indicated how strongly they agreed or disagreed with each topic (1 = strongly agree, 5 = strongly disagree). Considering the results of exploratory factor analysis,

the scale was used as one-dimensional construct in this study (see Table 1). Before deciding on the GHRM scale, Tang et al. (2018) and Cabral and Dhar's (2019) scales were examined. Cabral and Dhar's scale is for collecting qualitative data. Since the questionnaire method was preferred in data collection and the participants were Turkish-speaking people, it was preferred to use a scale whose validity and reliability studies were conducted in Turkish. The scale used in the research is very similar to the scale developed by Tang et al. (2018).

Work engagement scale

To measure work engagement, short version of a Utrecht (UWES-3) work engagement scale developed by Schaufeli et al. (2009) has been used. On a 5-point Likert-type scale, the respondents indicated how strongly they agreed or disagreed with each topic (1 = strongly agree, 5 = strongly disagree; see Table 2). The Turkish adaptation of the short version of the 6-item Utrech scale was made by Güler et al. (2019).

Psychological ownership scale

Moreover, psychological ownership was measured through the scale developed by Uçar (2018). The 14-item scale includes four sub-dimensions, including self-identity (5 items), efficacy (2 items), protective focus (3 items), and internal responsibility (4 items). In this study, the scale was used as a one-dimensional construct in line with the exploratory factor analysis result (see Table 3). Three scales related to psychological ownership (Olckers, 2013; Shukla and Singh, 2015; Iseki et al., 2022) were examined, and the scale developed by Uçar (2018) was preferred because it was prepared in Turkish.

Statistical analyzes

All statistical analyses were conducted using IBM SPSS 24 AMOS 24. The pragmatic approach is used to test the hypothesis. The current research performs descriptive analysis to assess the demographic characteristics of employees. Cronbach Alpha and CR (Comoposite/construct reliability) values are measured to calculate the internal consistency for all study variables. SPSS Amos was employed for construct validity analysis. Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were conducted to see if the observed variables were theoretically loaded together and to evaluate construct, convergent, and discriminant validity and reliability values. The Pearson Bivariate Correlation is estimated for association among study variables. The research model was investigated using the Structural Equation Modeling technique. Hypotheses regarding the effect of the independent variable on the dependent variable and the mediating variable were tested using linear regression, and the hypotheses regarding the effect of the mediating

TABLE 2 Factor loadings.

Construct		Items	Standardized factor loadings			Scale reliability
			EFA	CFA1	CFA2	
Green job design	1	My company has assigned various responsibilities related to environmental protection to each position in the organization.	0.805	0.802	0.868	Cronbach α ; 0.935
	2	The company has included the green and social needs of the institution in its job descriptions and specifications.	0.847	0.845	0.923	SCR= 0.945
	3	My company includes green capabilities as a prominent element in its job specifications.	0.871	0.868	0.938	AVE= 0.812
Green selection and training	4	My company designs and implements innovative job positions to demonstrate the importance of environmental protection issues.	0.841	0.844	0.884	Cronbach α ; 0.963
	5	Our company includes the criterion of “green awareness (Environmental Awareness)” in its human resources employment policies.	0.879	0.887	0.915	SCR= 0.951
	6	Our organization attracts candidates who attach importance to applying green criteria in order to create a green employer brand.	0.899	0.906	0.952	AVE= 0.867
	7	My company has a communication environment that enables the dissemination of green knowledge, skills and goals.	0.881	0.888	0.906	
	8	My company identifies who needs training in environmental management.	0.858	0.858	0.878	
	10	My company uses environmental protection elements as the main themes of green education.	0.897	0.901	0.936	
	11	My organization provides environmental management training to improve the awareness, skills and knowledge of employees on environmental management.	0.877	0.882	0.904	
Green performance management	12	Our company sets green goals, objectives and tasks for each employee throughout the organization.	0.894	0.894	0.913	Cronbach α ; 0.949
	13	Green criteria are used to evaluate employee performance in my company.	0.875	0.863	0.910	SCR= 0.942
	14	My company monitors whether the green targets are being met and whether the green targets are being met.	0.900	0.889	0.939	AVE= 0.825
Green wage management	16	Our compensation system recognizes and rewards contributions to environmental protection.	0.794	0.758	0.910	Cronbach α ; 0.950
	17	My company rewards green skill acquisition.	0.844	0.810	0.968	SCR= 0.951
	18	My company rewards participation in green education programs.	0.824	0.787	0.958	AVE= 0.796
	19	My company rewards contributions to environmental management through non-monetary rewards such as paid leave, special leave, gifts to employees and their families.	0.751	0.712	0.850	
	20	My company recognizes employees' green initiatives by promoting and praising them throughout the organization.	0.791	0.758	0.848	
Self identity	2	My workplace is indispensable to me.	0.828	0.879	0.834	Cronbach α ; 0.88
	3	It gives me pleasure to be a member of this establishment.	0.807	0.837	0.839	SCR= 0.876
	4	I am proud to be associated with this establishment.	0.744	0.683	0.766	AVE= 0.514
	5	I think my workplace gives me dignity.	0.822	0.757	0.710	
Protect focus	8	I thought that I have to warn employees who have harmful behavior to our workplace.	0.810	0.696	0.730	Cronbach α ; 0.767

(Continued)

TABLE 2 (Continued)

Construct	Items	Standardized factor loadings			Scale reliability
		EFA	CFA1	CFA2	
Internal responsibility	9 I thought that if something goes wrong in our workplace, I have to prevent it	0.777	,870	0.864	SCR= 0.876
	10 I thought it is necessary to be informed to our supervisors about the negative situations in our workplace.	0.684	,648	0.661	AVE= 0.514
	12 I am aware of what is expected of me for my workplace.	0.587	0.727	0.734	Cronbach α ; 0.678
	14 It is important to me to fully meet the expectations of my workplace from me.	0.606	0.707	0.700	
Work engagement	1 At my work I feel bursting with energy.	0.836	0.776	0.743	Cronbach α ; 0.43
	2 At my job. I feel strong and vigorous.	0.875	0.827	0.800	SCR= 0.853
	3 In am enthusiastic about my job.	0.857	0.819	0.862	AVE= 0.556
	4 My job inspires me.	0.850	0.824	0.881	
	5 I'am immersed in my work.	0.507	0.324	0.320	
Notes	(i) Principal Component Analysis with Varimax Rotation (ii) KMO = 0.958. Bartlett Test; $p < 0.001$ (iii) Total Variance Explained (%); 71.915 (iv) All CFA Paths are statistically significant at $p < 0.001$				
1st Order CFA	$\chi^2/df = 2.121$. SRMR = 0.05. TLI = 0.934. CFI = 0.942. RMSEA = 0.067				
2nd Order CFA	$\chi^2/df = 2.305$. SRMR = 0.06. TLI = 0.924. CFI = 0.930. RMSEA = 0.072				

TABLE 3 Correlation matrix.

	Construct	CR	AVE	1	2	3	4	5	6	7	8
1	Job design	0.936	0.830	0.911							
2	Selection and training	0.963	0.814	0.913***	0.902						
3	Performance	0.942	0.845	0.840***	0.897***	0.919					
4	Wage man.	0.951	0.796	0.695***	0.759***	0.857***	0.892				
5	Work engagement	0.859	0.566	0.366***	0.345***	0.293***	0.182**	0.752			
6	Protect focus	0.786	0.554	0.216**	0.168*	0.121†	0.053	0.542***	0.744		
7	Self identity	0.870	0.628	0.562***	0.517***	0.497***	0.397***	0.630***	0.454***	0.793	
8	Internal responsibility	0.679	0.514	0.382***	0.352***	0.269**	0.225**	0.706***	0.728***	0.613***	0.717

***Correlation is significant at the 0.001.

**Correlation is significant at the 0.01.

*Correlation is significant at the 0.05.

† P value smaller than 0.001. Bold values are expressing correlation values.

variable on the independent variable were tested using multiple regression. To test the mediating role of psychological ownership between green human resources management practices and work engagement employed Model 4 of the Hayes PROCESS Procedure for SPSS Version.

Using principal component analysis with varimax rotation, an EFA was performed to see if the observed variables were loaded together as expected and were adequately correlated. In order to test the congruence of the data set, we performed

a factor analysis using the Kaiser-Meyer-Olkin (KMO) sample sufficiency test and the Bartlett's test for equality of variances. As a result of the analysis, KMO was found to be 0.9658, which is above the desired level of 0.50, and the Bartlett's test was found to be at the 0.001 level of significance. Moreover, in anti-image correlation, matrix diagonal values were examined and proven to be above the desired level of 0.5.

Thus, it could be deduced that the sample data were appropriate for factor analysis. In exploratory factor analysis,

the threshold for factor loadings was designated as 0.5 (Hair et al., 2014). In measuring the internal validity of factors, Cronbach's alpha values were computed; each Cronbach's alpha value was above 0.7. Thus, it was proven that there was internal validity between those factors, and inner validity of all factors was proven.

In order to validate the EFA results and analyze validity and reliability of measures, Maximum Likelihood method confirmatory factor analyses were applied. Moreover, modification indexes were investigated, and error values that had high modification values were covariates. In the end, fit indexes were found to be $\chi^2/df = 1.708$, $SRMR = 0.045$, $CFI = 0.962$, $RMSEA = 0.053$. The confirmatory factor analysis results of the measurement model are shown in Figure 2.

Because of the fact that, in this study, holistic effects of all sub-divisions of green human resources management and psychological ownership as a second-order factor analysis were conducted. Model fit indexes of this structure were found to be: $\chi^2/df = 1.981$, $SRMR = 0.092$, $CFI = 0.945$, $RMSEA = 0.063$. As a result, it was concluded that fit indexes could be accepted as being in the desired level (Hu and Bentler, 1999). Furthermore, unidimensionality was ensured, owing to the fact that all factor loadings were above the desired level, and convergent validity and model fit indexes were at the desired levels (Anderson and Gerbing, 1988). First-level and second-level confirmatory factor analysis results regarding the variables in the measurement model are shown in Table 2.

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Furthermore, in order to test the reliability of factor structures, AVE (Average Variance Extracted) (Fornell and Larcker, 1981) and SCR (Scale Composite Reliability) values were used. When the AVE value is above 0.5 and when the CR value is above 0.7, it is proper to claim that related factors ensure validity and reliability (Bagozzi and Yi, 1988; Yaşlioglu, 2017). AVE and SCR values regarding the factors in this study are presented in Table 3. According to these values, our factors' validity and reliability are at the desired levels (see Table 3). Only the CR value of the internal responsibility dimension is slightly below the threshold value. It can be deduced that there is differential validity among factors (Hair et al., 2014).

Results

Findings related to the scales

GHRM scale

The original scale includes 20 items and five sub-dimensions: green job design, green selection, green education and development, green performance, and green wage management. As a result of the CFA analysis, items 9, 11, and 15 were removed from the scale because they were included in different dimensions. The items in the green selection and green education sub-dimensions were collected in a single factor, and the scale finally consisted of 17 items and four dimensions.

Psychological ownership scale

The original 14 item scale contains four sub-dimensions: self-identity, efficacy, protective focus, and internal responsibility. In the CFA analysis, the scale items were distributed in four dimensions as in the original. However, since the two-item efficacy scale, Cronbach alpha and CR values were below 0.50; Items 1, 6, 7, and 11 were excluded from the analysis to improve model fit values. The psychological ownership scale ultimately consisted of 9 items and three dimensions.

Utrecht work engagement scale

Item 6 of the Utrecht work engagement scale, which consists of six items, was excluded from the analysis in order to improve compliance values, and, finally, the scale was formed as one dimensional with five items.

Findings related to hypothesis testing

After the verification of the measurement model, the research hypotheses were tested on the implicit variable structural model. First of all, in order to test the H1 (GHRM \rightarrow work engagement) hypothesis, which is graphically shown in Figure 3, the implicit variable structural model, in which work engagement is exogenous and GHRM is endogenous, was tested. According to SEM results, it was determined that GHRM predicted work engagement behavior ($\beta = 0.3$; $p < 0.01$). According to this result, H1 was supported.

GHRM includes four sub-dimensions: job design, selection and training, performance management, and compensation and wage management. A separate model was created to see the effects of GHRM sub-dimensions on work engagement. The fit values of the model are within acceptable limits ($\chi^2/df = 1.910$, $CFI = 0.971$, $SRMR = 0.038$, and $RMSEA = 0.060$). According to the results of the analysis, it was determined that none of the sub-dimensions alone had a significant effect on the work engagement behavior. Job design ($\beta = 0.28$; $p > 0.05$), selection

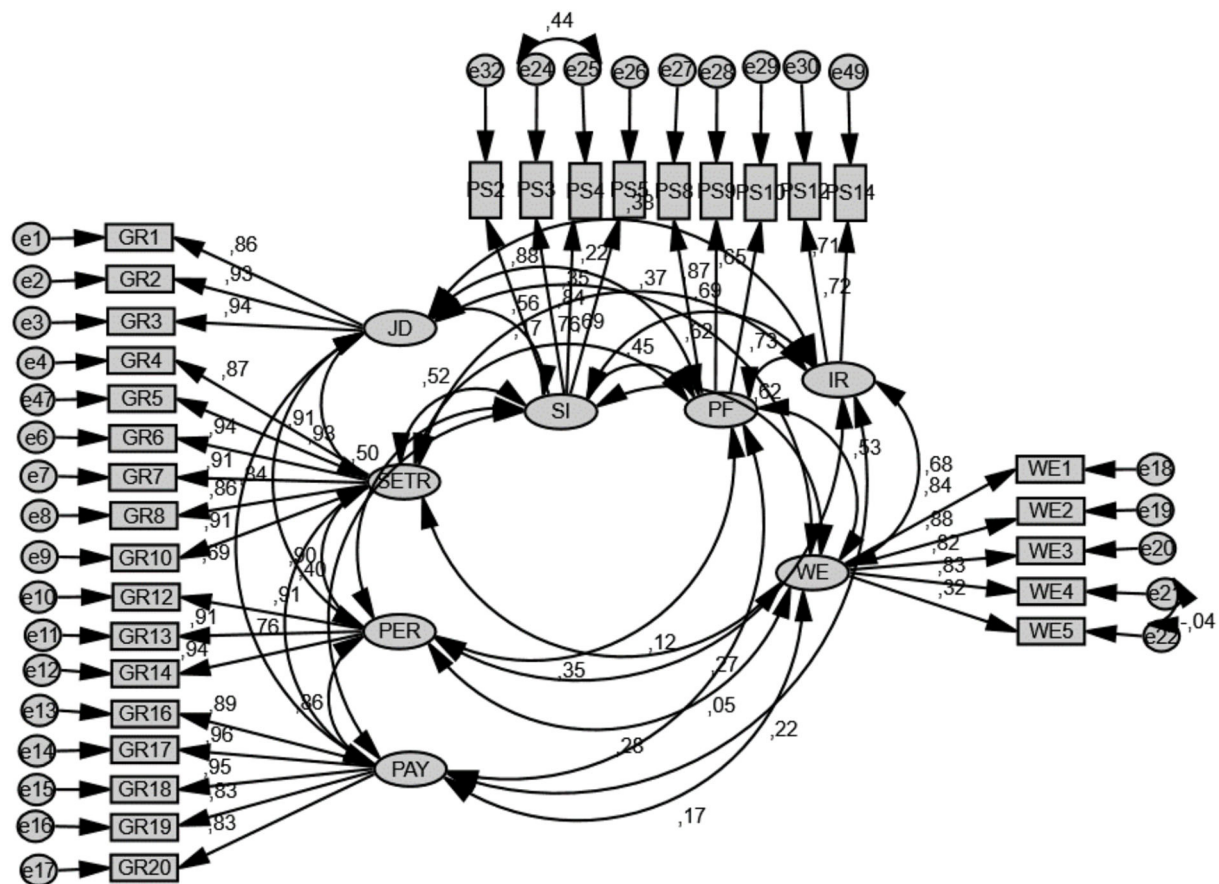


FIGURE 2

The confirmatory analyses model. JD, Job design; STR, Selection and training; PER, Performance; PAY, Wage management; SI, Self identity; PF, Protective focus; IR, Internal responsibility; WE, Work engagement.

and training ($\beta = 0.18$, $p > 0.05$), wages management ($\beta = -0.22$, $p > 0.05$).

In order to test the other hypotheses of the research, a separate model was created in which psychological ownership is the mediating variable (Figure 4). According to the mediated structural model analysis results, it was seen that GHRM predicted psychological ownership ($\beta = 0.4$; $p < 0.01$). In this case, H2 was supported. Similarly, the effect of the mediating variable, psychological ownership, on work engagement was found to be significant ($\beta = 0.80$; $p < 0.01$). In this case, H3 was supported. With the inclusion of the mediator variable, psychological ownership, in the model, the coefficient from GHRM variable to work engagement behavior became meaningless ($\beta = -0.02$; $p > 0.05$). Psychological ownership, along with GHRM, explains 62% of the change in work engagement behavior. The indices obtained as a result of the path analysis were within acceptable threshold values in the literature, indicating that the model was compatible with the data [X^2 (425, $N = 250$) = 843.684; $p > 0.01$; $X^2/df = 1.985$;

$CFI = 0.945$; $RMSEA = 0.063$; $SRMR = 0.063$]. The results of the hypothesis tests are shown in Table 4.

GHRM includes four sub-dimensions: job design, selection and training, performance, and payment. To see the effect of sub-dimensions on work engagement, which is an exogenous variable, four different path diagrams were created and tested. According to the results of the analysis, it was observed that all of the GHRM sub-dimensions significantly affected the work engagement behavior. Path analysis and model fit values for GHRM sub-dimensions and the work engagement variable are shown in Table 5.

According to the analysis results, the job design has the highest effect on the work engagement behavior. The effect of the wage management on the work engagement behavior is less than the other dimensions.

The effects of the sub-dimensions of the internal variable GHRM on the mediating variable psychological ownership

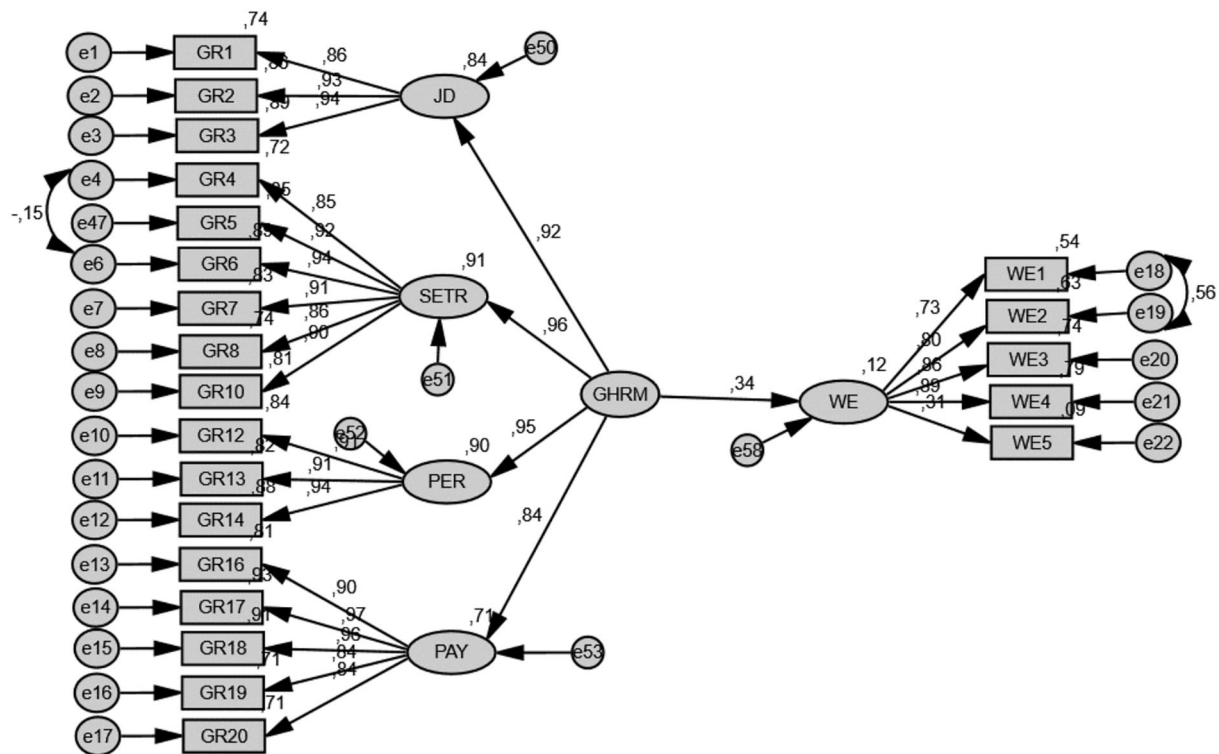


FIGURE 3

Path analysis. JD, Job design; SETR, Selection and training; PER, Performance; PAY, Wage management; GHRM, Green human resources management; WE, Work engagement.

are shown in Table 6. It is seen that all of the GHRM sub-dimensions have a significant effect on the psychological ownership variable. However, the SRMR values of selection and training, performance, and wage management dimensions are outside the acceptable limits. It is seen that the job design dimension among the GHRM sub-dimensions has the highest effect.

The effects of the mediating variable psychological ownership sub-dimensions on the exogenous variable work engagement are shown in Table 7. All three sub-dimensions of psychological ownership have a significant effect on work engagement behavior. The effect of the internal responsibility dimension is higher than the other dimensions. The RMSEA value of the protective focus size is outside the acceptable limits.

The path analysis based on the bootstrap method was conducted to test whether psychological ownership has a mediating role in the relationship between GHRM and work engagement behavior. It is claimed that the Bootstrap method gives more reliable results than the traditional method of Baron and Kenny (1986) and the Sobel test (Gürbüz, 2019). About 5,000 resampling options were preferred in the mediation effect analyses made with the bootstrap technique. In the mediation

effect analyses performed with the bootstrap technique, the 95% confidence interval (CI) value obtained as a result of the analysis should not contain the zero (0) value in order to support the research hypothesis (Gürbüz, 2019). According to the Bootstrap results, the indirect effect of GHRM on the mediation of psychological ownership was found to be significant [$\beta = 0.356$, 95% CI (0.206, 0.540)]. These results show that the psychological ownership variable has a mediating effect on the relationship between GHRM and work engagement behavior; in which case, H4 was supported (see Figures 4, 5).

The conceptual model of the research is shown in Figure 5.

Psychological ownership, which was used as a mediator variable in this study, includes three sub-dimensions: self-identity, personal focus, and internal response. Table 8 shows the mediation analyses regarding the sub-dimensions of the psychological ownership variable. Mediation analyses of sub-dimensions were performed using Model 4 in Hayes Macro.

According to the results of the analysis, it shows that all sub-dimensions of the psychological ownership variable have a significant mediating

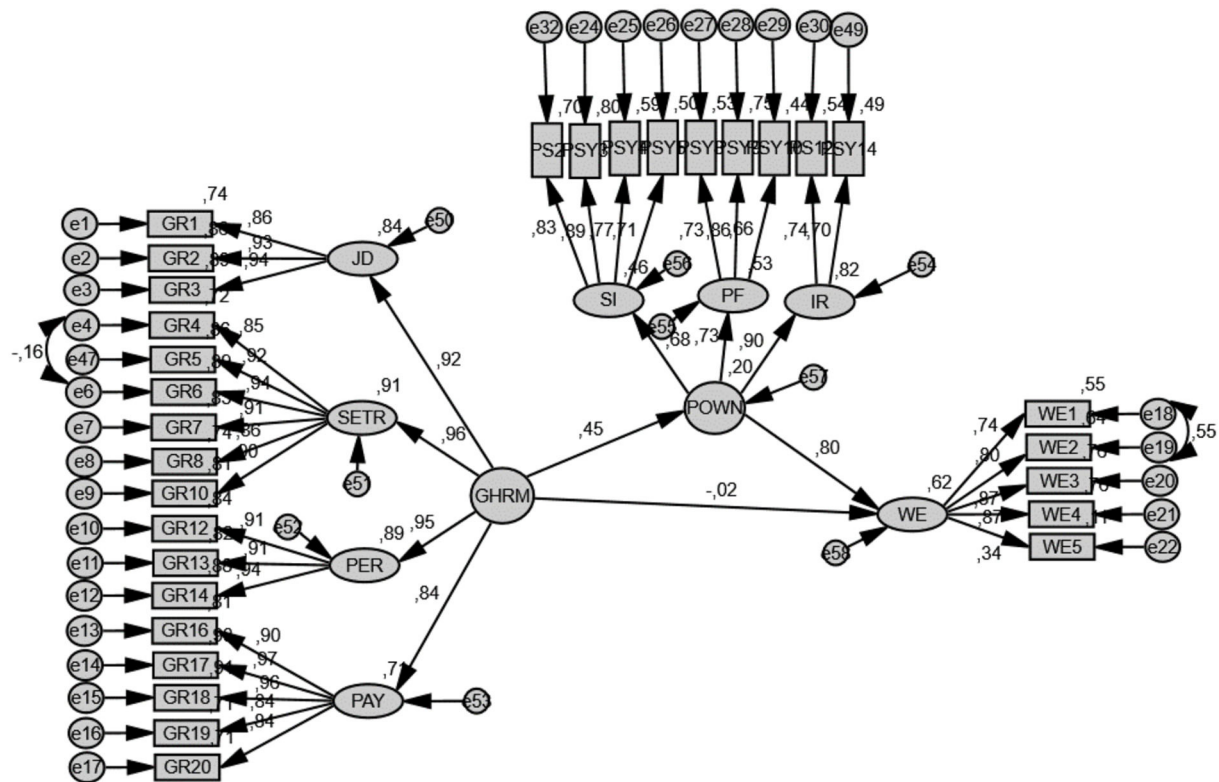


FIGURE 4
The structural model with a mediator variable.

effect on the relationship between GHRM and work engagement.

Discussion

Incorporating corporate environmental sensitiveness into human resources practices is explained as GHRM (Nawangarsi and Sutawidjaya, 2019). The GHRM encompasses systems, policies, and practices necessary for developing a socially responsible, resource-efficient, and environmentally sensitive workplace (Waqas et al., 2021). Hence, embracing GHRM practices has become a critic strategy for those companies wherein human resources play an active part in becoming environmentally sensitive (Adriana et al., 2020). In relation to that, GHRM can nurture supporters across employees that are willing to contribute to environment (Khan et al., 2022). In this study, we assumed that being in an environment-friendly atmosphere caused by GHRM will create positive attitudes on the part of employees nourishing their sense of ownership, which will mediate the relationship between GHRM and employees' work engagement.

In this study, first of all, we wanted to test the direct positive effect of GHRM on work engagement levels of employees,

and the results revealed that all dimensions of GHRM have a positive effect on work engagement. Our findings are parallel with previous studies showing the direct effect of GHRM on work engagement of employees (Sokro et al., 2020; Bhutto et al., 2021; Waqas et al., 2021). Our results revealed that the job design has the highest effect on the work engagement behavior, whereas the effect of the wage management dimension is the least. These results are parallel with the previous studies on HRM's (a classic form of HRM rather than GHRM) effect on work engagement, in the points that job design is very effective on work engagement and acts as a motivator (Letona-Ibañez et al., 2021; Shang, 2022), but wage management has a rather minor effect (Londa and Permatasari, 2021; Good et al., 2022) since wage is considered as a hygiene factor rather than a motivator.

Moreover, GHRM interventions can encourage employees to take green initiative and engage in green proactive behavior, which is considered as an individual investment according to conservation of resources theory (Jermisittiparsert et al., 2019; Hameed et al., 2022). Without a doubt, companies encouraging their employees to become a part of green initiatives make them feel more identified with their organizations and develop high levels of psychological ownership, owing to their efforts and investments on green issues (Liu et al.,

TABLE 4 The structural model and hypothesis testing.

	Output variables			
	Psychological ownership		Work engagement	
	β	SE	β	SE
GHRM (path)	-	-	0.34***	0.44
R^2	-	-	0.12	
GRHM (a path)	0.45***	0.040	-	
R^2	0.20		-	
GHRM (c' path)	-		-0.02***	-0.013
Psychological Ownership (b path)	-		0.80***	0.966
R^2	-		0.62	
Indirect effect	-		0.356, (0.206, 0.540)	

*** $p < 0.001$. SE, Standard error; values in parentheses are lower and upper confidence intervals. Bootstrap resampling = 5,000.

TABLE 5 GHRM sub-dimensions–work engagement path analysis values.

Construct	β	SE	Model fit values
Job design	0.36*	0.041	$X^2/df = 1.004$, CFI = 1.000, SRMR = 0.039, RMSEA = 0.004
Selection and training	0.35*	0.039	$X^2/df = 2.373$, CFI = 0.978, SRMR = 0.036, RMSEA = 0.074
Performance	0.29*	0.040	$X^2/df = 1.075$, CFI = 0.999, SRMR = 0.032, RMSEA = 0.017
Wage management	18*	0.041	$X^2/df = 1.622$, CFI = 0.990, SRMR = 0.039, RMSEA = 0.050

* $p < 0.01$. Standardized values are reported.

TABLE 6 GHRM sub-dimensions–psychological ownership path analysis values.

Construct	β	SE	Model fit values
Job design	0.48*	0.037	$X^2/df = 2.584$, CFI = 0.957, SRMR = 0.039, RMSEA = 0.079
Selection and training	0.42*	0.035	$X^2/df = 1.890$, CFI = 0.973, SRMR = 0.010, RMSEA = 0.060
Performance	0.33*	0.360	$X^2/df = 2.714$, CFI = 0.952, SRMR = 0.011, RMSEA = 0.083
Wage management	0.25*	0.035	$X^2/df = 1.890$, CFI = 0.973, SRMR = 0.010, RMSEA = 0.060

* $p < 0.01$. Standardized values are reported.

TABLE 7 Psychological ownership sub-dimensions path analysis values.

Construct	β	SE	Model fit values
Self identity	0.59*	0.056	$X^2/df = 2.555$, CFI = 0.973, SRMR = 0.053, RMSEA = 0.079
Protective focus	0.42*	0.035	$X^2/df = 1.641$, CFI = 0.989, SRMR = 0.054, RMSEA = 0.106
Internal responsibility	0.70*	0.140	$X^2/df = 3.821$, CFI = 0.966, SRMR = 0.065, RMSEA = 0.051

* $p < 0.01$. Standardized values are reported.

2012). As Curcuruto and Griffin (2018) suggest, prosocial and proactive attitudes of organizations contribute to greater social identification on the part of employees, which can be considered as a source of psychological ownership. So, in this study, it is assumed that GHRM has the capacity to boost employees' feelings of psychological ownership. In the related analysis, it is revealed that GHRM has a positive effect on Psychological

Ownership, and job design dimension is the sub-dimension having the highest positive effect. This is mostly because of the strong effect of work structure on psychological ownership (Pierce et al., 2004). Actually, this is the first study revealing the positive effect of GHRM practices on enhancing the psychological ownership of employees. Although not exactly the same model, there are studies showing the positive effect

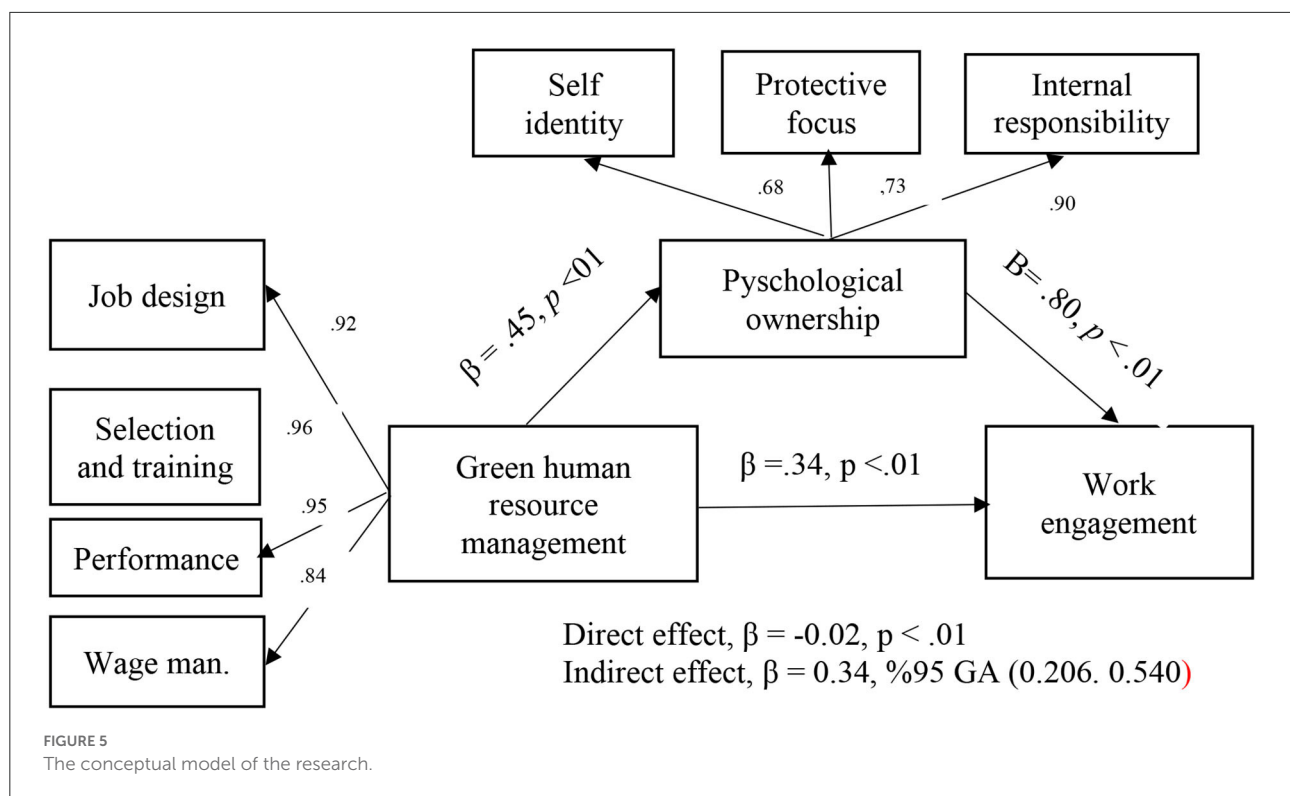


TABLE 8 Psychological ownership sub-dimensions mediation analyses results.

Path	Effect	B	BootSE	BootLLCI	BootULCI	Effect
GHRM → SI → WE	Direct effect	0.17	0.04	0.0953	0.2433	
	Indirect effect	0.02	0.01	0.0026	0.0497	Yes
GHRM s→ PF→ WE	Direct effect	0.15	0.03	0.0852	0.3225	
	Indirect effect	0.1439	0.0270	0.0943	0.1992	Yes
GHRM → IR→ WE	Direct effect	0.10	0.03	0.0481	1.1353	
	Indirect effect	0.09	0.02	0.0481	0.1353	Yes

BootSE, Bootstrap Standard Error; BootLLCI, Bootstrap %95 confidence interval lower level; BootULCI, Bootstrap %95 confidence interval upper level. 5,000 Bootstrap is used. GHRM, Green human resources management; SI, Self-identity; WE, Work engagement; PF, Personal focus; IR, Internal responsibility.

of similar green management approaches on psychological ownership. For instance, Chang's et al. (2020) study resembles our study in the point that it revealed the positive effect of Green Shared Vision on employees' feelings of psychological ownership. Our results are also parallel with the previous studies revealing this positive impact of psychological ownership on work engagement (Wang et al., 2019; Chai et al., 2020) and with studies suggesting that it prevents intention to quit (Su et al., 2021).

Moreover, we also tested whether Psychological Ownership has a positive effect on work engagement. Results revealed that all subdimensions of Psychological Ownership positively affect work engagement. Our results were in parallel with the previous studies, revealing this positive effect on work engagement levels

of employees (Khan and Gul, 2021; Nurtjahjani et al., 2021). In this study, we also tested whether psychological ownership acts as a mediator in the relationship between GHRM and work engagement. Results revealed that psychological ownership has a mediator effect on the relationship between GHRM and work engagement with all its sub-dimensions. Our results are parallel with those studies conducted by Gim et al. (2021), revealing the positive indirect effect of GHRM on work engagement through HRM performance attributions as a mediator in the point that, in our study, the effect of GHRM is also ended up to be an indirect effect on work engagement, which occurs through Psychological Ownership. This study is unique in revealing the effect of sense of Ownership in boosting work engagement by GHRM, thus contributes to both sustainability literature and

GHRM literature. Owing to this study, we could emphasize the significance of using GHRM for creating greater sense of ownership and engagement and utilizing GHRM as a motivator for encouraging people to engage their organizations.

Conclusion

In this study, the effects of GHRM on psychological ownership perceptions and work engagement levels of employees have been examined and the possible mediator effect of psychological ownership has been tested. In the study, GHRM has been examined with four sub-dimensions: green job design, green selection, green education and development, green performance appraisal, and green wage management. A significant and positive relationship was found between all sub-dimensions of this GHRM (green job design, green selection and training, green performance appraisal, and green wage management) and work engagement levels of employees; hence, H1 hypothesis is accepted, which makes us think that, when organizations engage in environmentally friendly human resources practices, their employees feel satisfied and develop greater work engagement. According to the related analysis, job design is the most effective dimension, whereas wage management has the lowest effect. This may be resulting from the fact that green wage management may be creating disadvantages for some employees, and they may be losing money. Anyway in the related literature, wage management is associated with hygiene factors that neutralize its effect as a motivator (Good, Hughes and Wang).

Furthermore, it was revealed that all four dimensions under GHRM have a statistically significant and positive relationship with psychological ownership. Thus, H2 hypothesis is also accepted. Although all dimensions positively affected the psychological ownership, the positive effect of GHRM on Psychological Ownership has mostly come about through the positive effect of job design.

Moreover, in H3, we tested the possible positive effect of psychological ownership on work engagement. Results revealed that all three sub-dimensions of psychological ownership have a significant effect on work engagement behavior. The effect of the internal responsibility dimension is higher than the other dimensions. So H3 is also accepted. This was an expected result since, from the extant literature, we know that the psychological ownership construct is an important antecedent of work engagement (Ugwu and Amazue, 2014; Wang et al., 2019).

Our expectations regarding the mediation effect have also been confirmed. It has been revealed that psychological ownership has a positive mediation effect between work engagement and GHRM applications, so H4 is also accepted. This is a noteworthy and valuable contribution to the literature. This study makes a great contribution to the literature in

order to show how GHRM affects the sense of ownership of employees' organizations and how commitment can be increased through this effect. Hence, creating the sense of ownership should be considered as a tool for increasing the positive effect of GHRM on the engagement level of employees. Without a doubt, what makes this study unique in the point is the fact that it revealed the mediating effect of psychological ownership in the relationship between GHRM and work engagement. Thus, this study is important for confirming the importance of GHRM as a tool for boosting engagement and revealing the significance of psychological ownership in more engaged employees.

Managerial implications

Actually, companies embracing GHRM can easily build a positive organizational image and contributes to work engagement of their employees (Nawangsari and Sutawidjaya, 2019). In this sense, GHRM can be adopted as a mechanism that strengthens both engagement and sense of psychological ownership. Hence, this study is noteworthy in the point that it showed that GHRM, as an intrinsic motivation tool, affects psychological ownership and increases work engagement through this effect. The fact that this study is the first study revealing the significance of GHRM practices on work engagement levels of Turkish employees, we believe that this is an encouraging and challenging study for Turkish employers who are mostly hesitant about using GHRM as a motivational tool. According to our results, the effects of job design and training and development dimensions on work engagement behavior are higher than performance and payment dimensions. This result can be evaluated as an indication that businesses should seriously consider GHRM applications during the job design and selection phase. If we put the sentence in reverse, businesses that do not show the necessary care in the job design and selection stages in the GHRM application may not be successful in influencing the work engagement behavior of their employees with only performance and wage management.

Further studies and limitations

Owing to this study, the effect of GHRM on psychological ownership has been illuminated. This is the first study revealing the positive effect of GHRM on psychological ownership, and it is also the first study revealing the mediator effect of psychological ownership in the relationship between GHRM and work engagement. The fact that the sample of this study is white-collar employees working in production companies in Turkey creates the biggest limitation on the generalizability of the study. In order

to make the study more generalizable, wider geographies and greater number sectors can be included in the sample. The model can also be tested in cross-cultural studies or longitudinal studies. Moreover, a moderator variable can be added to the model, making the model more comprehensive. For instance, testing the moderator effect of employee proenvironmental attitude can be useful. Future research may also point out whether the effect of the independent variables in different generations of respondents is valid. Furthermore, different dependent variables, such as corporate organizational citizenship, job satisfaction or job performance, can be tested.

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.

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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.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fpsyg.2022.951963/full#supplementary-material>

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Impact of work demand constraints on psychological distress through workplace bullying and personality traits: A moderated-mediation model

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Introduction: This study addressed the human aspects of sustainable development in organizations by applying work demand resource theory and the main focus of the study is to investigate the negative aspects of workplace bullying on human's mental health. This study investigated how the work demand constraints play a role in increasing psychological distress among employees through the mediation of workplace bullying. This study also considers personality traits that play a role in preventing psychological distress resulting from workplace bullying.

Methods: The authors collected data by means of a self-administered questionnaire. The questionnaire was distributed among 1000 employees selected using a systematic sampling technique, patronized among three service sectors: the health sector, education sector, and forest department in the city of Lahore in Pakistan. The data was analyzed by employing Partial Least Square Structural Equation Modeling (PLS-SEM) using Smart PLS 3.3.3.

Results: Results of this study reveal that work demand constraints (WDC) play a significant role in workplace bullying and impact increasing psychological distress. Personality traits play a moderating role between work demand constraints and workplace bullying behavior on the one hand and psychological distress on the other hand; however, openness to experiences was found to have a moderating relationship between work demand constraints and workplace bullying. Meanwhile, agreeableness and openness to experiences were found to have a moderating relationship between work demand constraints (WDC) and psychological distress.

Discussion: This study also has practical implications for employers, such as providing psychological counseling, personality development training

at the workplace etc. The relationship of work demand constraints with psychological distress and workplace bullying through direct and indirect moderating effects of personality traits in Pakistan's service sector are unique contributions of this study.

KEYWORDS

workplace bullying, work demand constraints, psychological distress, personality traits, counseling, M12, O15

Introduction

Organizational sustainability has received a great deal of attention from academia and business realms for the last few years (de Freitas et al., 2017; Lopes et al., 2017; Yu et al., 2018; Contreras and Abid, 2022; Elahi et al., 2022). Out of the triple bottom-line dimensions of organizational sustainability, unfortunately, the social dimension associated with human sustainability is not dealt with by academia in a balanced way in contrast to environmental and economic dimensions (Ahmad and Thaheem, 2017; Eizenberg and Jabareen, 2017; Abid et al., 2020; Ilyas et al., 2020). The social dimension of sustainable organizations is the human dimension related to employees' well-being (Di Fabio, 2017). This demonstrates that greater emphasis should be placed on the social dimension, which is the research gap. This study makes an effort to bridge this gap in the literature. Human sustainability has been defined by Pfeffer (2010) as management practices that have a profound influence on the employees' physical and psychological well-being sustainably. Literature suggests that sustainable organizations achieve this dimension by enhancing employee well-being, i.e., by increasing positive aspects and reducing negative aspects of human development (Ashfaq et al., 2021; Khan et al., 2021; Qaiser and Abid, 2022). Likewise, a few researchers mentioned that thriving organizations could make their employees motivated and blissful (Abid and Contreras, 2022; Abid et al., 2022). There is a diverse array of factors that affect employee well-being to improve workplace outcomes for sustainable organizations (Chughtai et al., 2015; Ilyas et al., 2022). Few factors have a positive impact, and others have a negative impact on employee well-being.

Bullying at the workplace is a force that has a negative impact on human sustainability by engendering psychological distress among employees. Its presence is not only incompatible with a healthy and sustainable work environment but also has a psychological, and social consequences for individuals (Gómez-Galán et al., 2021). Due to its negative association with psychological well-being; literature requires its further investigation and exploration in different work environments (Peña-Casares and Aguaded-Ramírez, 2021; Carretero Bermejo et al., 2022). There is great interaction between bullying

and human sustainability and this topic still requires further investigation from different perspectives (Cullinan et al., 2020; Conway et al., 2021). Based on this gap this study investigated the impact of bullying on psychological distress. Bullying is defined as "repeatedly harassing, offending, socially excluding or targeting someone at work with negative acts for a prolonged period" (Leymann, 1996; Baillien et al., 2017). It is associated with incapability to concentrate, mood swings, sleep problems, anxiety, fear, and depressive symptoms (Verkuil et al., 2015; Karatza et al., 2016; O'Donnell and MacIntosh, 2016; Agostini et al., 2019). It is also associated with psychological and psychosomatic symptoms such as headaches, respiratory, and cardiac complaints, hypertension and hypersensitivity to sounds (Hallberg and Strandmark, 2006; Devonish, 2017; Peña-Casares and Aguaded-Ramírez, 2021).

Evidence suggests that almost 7% of employees experienced bullying in Jordan, 20.3% experienced bullying in Basque, and 13.3% experienced bullying in Taiwan (Nakayama, 2019; Shahrouh et al., 2020). The hidden costs of bullying behaviors were examined in a study and found that €5323.01 was reported for medical treatments and also indirect costs in the form of productivity loss (Jantzer et al., 2019). Another study found that the annual estimated cost for productivity loss was reported as €51.8 million in the public sector, and €187.6 million in the private sector (Cullinan et al., 2020).

Researchers (Bakker and Demerouti, 2017; Finstad et al., 2019; Balducci et al., 2020) indicated workplace bullying is a consequence of the job demand constraints. Research also found that a stressful workplace environment often leads to worsened interpersonal relationships, thus leading to workplace bullying (Zhao et al., 2020). Due to the experience of workplace bullying, there is a growing tendency that the target may suffer deteriorated health issues such as physical, mental, emotional, or psychological illness (Bryson et al., 2020). Prime reason for these negative behaviors is inherent in stress because of work demands (Zahlquist et al., 2019). Therefore, this study uses job demand-resource theory to investigate the effects of work demand constraints on bullying and psychological distress.

Based on the above literature, we assume that workplace bullying is a major issue, but the question is still unclear

whether workplace bullying can mediate the effect of work-related stress on employees' physical, mental, or psychological health (Finstad et al., 2019). Therefore, the first objective of this study is to investigate the impact of work-related stressors such as work demand constraints on psychological distress through the mediating role of workplace bullying. The second objective of this study is to investigate the moderating role of personality traits (Extroversion, openness to experience, neuroticism, conscientiousness, and agreeableness). We used two wave time lagged data, quantitatively estimated the mediation effect, and tested its significance.

To reach our objectives, this study puts the following questions.

- 1) Does WDC positively influence workplace bullying?
- 2) Does workplace bullying mediate the relationship between WDC and psychological distress?
- 3) Does Personality traits (extroversion, agreeableness, openness to experience, neuroticism, and conscientiousness) moderate the positive relationship between WDC and bullying behavior?
- 4) Does Personality traits (extroversion, agreeableness, openness to experience, neuroticism, and conscientiousness) moderate the indirect impact of WDC on psychological distress through bullying behavior?

The paper is organized as follows. Section "Literature review and hypotheses development" entails hypotheses formulation after reviewing the pertinent literature. Section "Method" covers methodology and measures of the current study, in section "Results" results of the study are presented. Section "Discussion" describes the discussion and finally, implications, limitations, future directions, and conclusion are discussed.

Literature review and hypotheses development

Work demand constraints as an antecedent of workplace bullying

In research on workplace bullying, Samsudin et al. (2020) highlighted the necessity of organizational antecedents of bullying and considered these a main cause of bullying (Baillien et al., 2019). On the other hand, Zapf and Einarsen (2020) investigated that individual elements were the responsible for workplace bullying. Therefore, there is room to search for either reason for bullying. Consequently, bullying must be taken as a dyadic interaction between individuals, where neither personal nor situational factors are enough to describe its reason of existence. Organization and its management also play an intervening role between bullying and conflict, so it is concluded that a wide range of factors such as individual, situational,

organizational, dyadic, group, contextual and societal level factors may each be the critical cause of bullying (Hoel et al., 2001; Gómez-Galán et al., 2021). This study considers "organizational" factors, either providing support to either model or not.

Organizational factors influencing the frequency of bullying, among others, are chaotic and unpredictable work environment, reduced work control, lack of procedural justice, destructive management style, and ethical climate (Ahmed and Omran, 2020; Samsudin et al., 2020). However, there is a scarcity of empirical research, and it is not clear yet which factors in the workplace environment increase bullying or under which mechanism a poor workplace breeds bullying (Samsudin et al., 2020). Research focused on work related stressors as antecedents of workplace bullying, such as job design, management practices, and social context (Feijó et al., 2019). This study considers a work-related antecedent, work demand constraints as an antecedent of workplace bullying.

Work demand-resource theory

Research on employee well-being has been guided by job demands-Resource theory put forward by Demerouti (Demerouti et al., 2001; Bakker and Demerouti, 2017). The main idea of job demands-resource theory is based on two job characteristics such as job demands and job resources. Job demands are the physical and emotional stressors in individual's role such as time pressures, workload, stressful environment, emotional labor (Bakker and Demerouti, 2017). While job resources are those aspects of the job that are required in obtaining work objectives and motivates for professional growth and development such as autonomy, strong work relationships, opportunities for advancement, and learning and development (Schaufeli and Bakker, 2004). An extension in job demands resource theory was conducted in the form of personal resources (Bakker and Demerouti, 2007) which is based on belief system of the humans about how much they have control on environment. The theory job demands-resource theory proposes that high job demands and job resources and personal resources activate multiple processes at work (Demerouti et al., 2001). Job demands is associated with psychological and mental health damage processes: having high job demands or demand constraints like, workload, task overburdening, and inadequate infrastructure leads to overthinking and in the end psychological disorders (Medzo-M'engone, 2021). In contrast, job resources clues to enhanced motivational process: with more job resources employees moves to more job engagement and becomes more dedicated toward work (Bakker and Demerouti, 2017). Job demands and resources also interrelate to forecast strain (Dicke et al., 2018). For example, in the presence of high autonomy (job resources), a person may deal with high work burden (high job demand). Generally, work demand constraints, where

excessive workloads and overburdening with limited authority and resources consume more individual resources and make them stressed (Naseem and Ahmed, 2020). This shows that high job demands interacting with negative behaviors leads to more emotionally exhaustion.

In service sector, specifically health care units and academia, resources are related to funding possibilities, administrative staff, managerial skills, and access to higher studies. Resources may also be categorized as interpersonal skills, support from seniors, and a psychosocial environment. The Institution's may also provide resources by providing clarity in job roles, leadership competence and allowing individuals to participate in decision making (Bjaalid et al., 2022). In service sectors, there are two categories of job demands: positive job demands and negative job demands.

This job demand-resource theory's strain hypothesis has been linked to a wide range of consequences, such as the risk of greater depression and poor quality of sleep (Dutheil et al., 2020), higher burnout, and lower work engagement (Vassos et al., 2019). Researchers also found workplace bullying as an outcome of this strain hypothesis (Balducci et al., 2020; Naseem and Ahmed, 2020). It has been argued that employees try to reduce stress by distancing themselves from stressful situations by violating workplace norms such as withdrawal behavior, social violation or isolation, and putting less effort into work (Notelaers et al., 2013). Such violation of workplace norms arouses others to adopt a negative attitude toward the stressed employee and requires more resources to reduce stress (Notelaers et al., 2013). Such a person may become an easy victim of workplace bullying (Pastorek et al., 2015). Research in Australian, Spanish, and Belgian contexts also related workloads and excessive work demand positively with strain hypothesis (Barlett and Coyne, 2014). Researchers found that these work-related outcomes may arouse stress, which results in exposure to workplace bullying (Baillien et al., 2019).

Workplace bullying and psychological distress

Research has shown a negative association between workplace bullying and mental health (Lever et al., 2019). Psychological distress often deteriorates mental health, before discussing how workplace bullying and psychological distress are associated, we need to understand what in fact psychological distress is. Psychological distress is a condition full of emotions rendered by high signs of depression and anxiety and frustration. This kind of emotional experiencing is related with work demand constraints which is difficult to meet in routine life (Asaoka et al., 2021; Bano et al., 2021). Work-related bullying is also related with constant criticism, minimum deadlines to meet work demands, extra monitoring of work to make employees realize about their work inefficiencies. This kind of behavior

is pretty enough to arouse feelings of irritation, which at later stages leads to emotional exhaustion (Naseem and Ahmed, 2020) and finally into anxiety and frustration.

Not only bullying victims are experiencing emotional disorder and frustration but also the witnesses. Although percentage of bullying victims is high to show psychological disorder (Nielsen and Einarsen, 2012a; Heffernan and Bosetti, 2021). Studies also shown that perpetrators are also developed high symptoms of depression (Wen et al., 2022). Niedhammer et al. (2020) reported that workers who witnessed workplace bullying had three to four times higher depressive symptoms than those who did not personally experience bullying nor witness others being bullied, while victims had eight times higher depressive symptoms than those with no experience or witness of workplace bullying (Harb et al., 2021).

Employees who are working in service sector, particularly in health and education sector; are all the time in touch with patients and students, are experiencing more anxiety and frustrations (Einarsen et al., 2020; Asaoka et al., 2021; Putra and Artini, 2022). Therefore, Employees in service sector are keeping themselves all the time busy to meet challenges of daily changing work demands. Keeping in view the deficiency of information on the mediating role of workplace bullying on psychological distress, through work demand constraints, this study puts an effort to investigate the workplace bullying behavior and its impact on employee's psychological distress level in service sector employees.

Big five personality

Among the various theories of personality, the Big five model seems to be the most influential model in modern psychology (Ettis and Kefi, 2016). This model shows that personality traits can be designed into the five- broad categories, which include "extraversion (sociable, gregarious, assertive, talkative, active), agreeableness (courteous, trusting, good-natured, cooperative, tolerant), conscientiousness (careful, responsible, organized), neuroticism (anxious, depressed, angry, embarrassed, worried, and insecure), and openness to experience (imaginative, cultured, curious, original, intelligent)" (McCrae and John, 1992; Gómez-Galán and Lázaro-Pérez, 2020). Exploring personality traits of the victims, perpetrators and the witness has been the subject of interest by many research studies. Big five has been linked with both bullying victimization and intimidation (Mitsopoulou and Giovazolias, 2015; van Geel et al., 2017) and aggressive and violent behaviors (Barlett and Anderson, 2012). Agreeableness has been found to be negatively associated with victimization and intimidation (Kokkinos et al., 2016; Koukia, 2020). Emotional instability often expressed by aggressive behaviors both in bullies and victims is linked with intimidation (Hansen et al., 2012) and victimization (Alonso and Romero, 2017). Low scale conscientious leads to

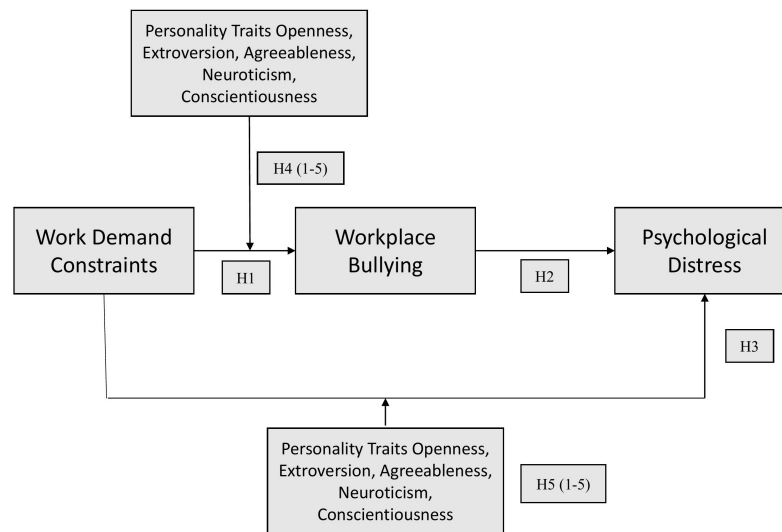


FIGURE 1
Theoretical framework.

bullying victimization (Kokkinos et al., 2016) and perpetration (Koukia, 2020). High level of Extroversion leads to perpetration (Koukia, 2020), While low scale of Extraversion has also been associated with the victimization, (Kokkinos et al., 2016). On the other hand, it has been shown that individuals who experience bullying at workplace leads to reduced agreeableness and increase in neuroticism (Naseem and Ahed, 2021). This shows that workplace bullying and big five personality traits are highly correlated in different forms. However, this study tries to investigate the moderating role of personality traits which itself is an addition in theoretical literature of bullying. The main focus is to know which dimensions of big five personality traits plays a moderating role in the relationship between WDC and workplace bullying. We also checked the moderation of personality traits dimension in the indirect relationship of WDC and psychological distress. Theoretical framework is provided in Figure 1. The hypotheses are:

H1: WDC is positively linked with workplace bullying.

H2: Workplace bullying mediates the linkage between WDC and psychological distress.

H3: WDC is positively linked with Psychological distress.

H4(1-5): Personality traits (extroversion, agreeableness, openness to experience, neuroticism, and conscientiousness)

moderate the positive linkage between WDC and bullying behavior, such that it is less evident for employees with great personality traits.

H5 (1-5): Personality traits (extroversion, agreeableness, openness to experience, neuroticism, and conscientiousness) moderate the indirect impact of WDC on psychological distress through bullying behavior. Especially, bullying behavior mediates the indirect effects when personality traits are high but not when it is low.

Method

Research approach

This study used a deductive research approach based on survey questionnaire. Deductive approach is used for theory testing or modification (Bryman and Bell, 2015). Questionnaire was based on above hypotheses. This empirical study was designed for descriptive research.

Questionnaire designing

The objective of this study was to investigate the role of WDC and bullying (direct and indirect) on psychological stress using five dimensions of personality traits as a

moderator. A pilot study was conducted to check the reliability and validity of the questionnaire. For the pilot study, we selected fifteen academic professors and fifteen doctors from healthcare and ten forest officers. Their feedback showed the existence of workplace bullying and its negative consequences due to work demand constraints. No specific changes were made in questionnaire. All items that we used in the questionnaire are given in [Appendix A](#). Four Variable measurements includes one independent variables (WDC), one mediating variable (workplace bullying), one moderating variable (Personality Traits), and one dependent variable (psychological distress) were used in this study.

This research used a five-items measure developed by [Boyar et al. \(2007\)](#) to measure work demand constraints. Sample item was “I feel like I have a lot of work demand”. The items used in the study were considered valid because of their alpha value above the standard 0.70. The psychological distress of bullying was measured by using five items from the Beck Anxiety Inventory ([Beck et al., 1988](#)). Sample item was, “Feeling constant fear of the worst happening”. Cronbach’s alpha was (0.89). Big Five Personality Traits were measured by a 10-item short version of the Big Five Inventory developed by [Rammstedt and John \(2007\)](#). Sample item was, “I see myself as someone who handles stress well”. Cronbach’s alpha was (0.79). The Negative Acts Questionnaire measured bullying Behaviors (NAQ-R) developed and revised by [Einarsen and Raknes \(1997\)](#). Five items for work related bullying were used for this study. Sample item was, “Persistent criticism of your work and efforts.” The response rate was also measured on five points Likert scale, and its range was never = 1, to weekly = 5. Cronbach’s alpha was (0.87).

Sample and data collection procedure

In order to collect data, a letter of permission for conducting research was issued from the institution to ensure the confidentiality of the responses. The study’s first author approached the heads of different public and private sector institutions in Lahore, Pakistan to seek permission for collecting data from their full-time, regular employees serving in the respective organizations. The author introduced the purpose of the research and solicited their consent to participate in the research study. To reduce the common method biases identified by [Podsakoff et al. \(2003\)](#), the data was collected by using two wave (15 days interval) time lagged design. By using systematic sampling technique, Participants were invited to fill out the questionnaires about demographics, work demand constraints and workplace bullying at Time 1 (T1). Two weeks later, at Time 2 (T2), participants were asked to complete the Questionnaires for personality traits and psychological distress. The employees provided a self-report response at both times

(T1 and T2). At T1, a total of 1,000 questionnaires were distributed. The sample size was calculated using G*POWER software ([Faul et al., 2007](#)), and the resulting number is 156 (statistical power = 83%, effect size = 0.02, no of arrows pointing at PD = 5). This shows, any sample size above 156 should have adequate statistical power to draw valid results. Based on G*power formula, we spread 1,000 questionnaires to get maximum responses. Out of those, 920 questionnaires were received, making it a response rate of 92%. Segregating the questionnaires with missing and incomplete data, 870 were identified as usable. Respondents were requested to write their employee no on the questionnaire for matching the data at Time 2. At T2, questionnaires were distributed to those respondents, who responded and completely filled questionnaire in T1 time to get data regarding the remaining study variables. At T2, 870 questionnaires were then distributed to the participants, out of which 810 were received back. 81 questionnaires had missing data so the usable questionnaires were 729 making response rate 60.7%. The respondents consisted of 471 males (61%) and 292 females (39%) with an average age of approximately 31–40 years (42%). It is pertinent to note that the majority of the participants were from private sector (52%) and married (62%). The detail of the demographics in this study is presented in [Table 1](#).

Collinearity test

This study handled potential response biasness by conducting data analysis in two-time intervals. The objective was not to irritate the respondents and they can response by

TABLE 1 Sample characteristics.

Measure	Items	Frequency	Percentage
Employment sector	Private	379	52%
	Public	349	48%
Gender	Male	471	61%
	Female	292	39%
Job experience	1–5	145	20%
	6–10	306	42%
	11–15	182	25%
	16–20	73	10%
	above	21	3%
Qualification	Higher secondary	106	15%
	Graduation	392	54%
	Masters and MPhil	231	32%
Marital status	Single	275	38%
	Married	454	62%
Age	21–30	334	41%
	31–40	336	42%
	41–50	91	11%
	51–60	49	6%

TABLE 2 Factor loadings of variables [per item, Cronbach alpha, composite reliability, and average variance extracted (AVE)].

Constructs	Indicators	Outer loadings	Alpha	Rho A	CR	AVE	VIF's value
Bullying behavior	BB1	0.811	0.915	0.919	0.937	0.748	2.501
	BB2	0.882					
	BB3	0.911					
	BB4	0.878					
	BB5	0.838					
Conscientiousness	CON1	0.910	0.777	0.779	0.899	0.817	1.532
	CON2						
Extroversion	EXT1	0.915	0.812	0.812	0.914	0.842	1.734
	EXT2	0.920					
Neuroticism	NEU1	0.924	0.830	0.830	0.922	0.855	1.672
	NEU2	0.925					
Openness to experience	OTE1	0.910	0.779	0.780	0.900	0.819	1.451
	OTE2	0.900					
Agreeableness	AGR1	0.853	0.765	0.854	0.891	0.804	2.134
	AGR2	0.938					
Psychological distress	PD1	0.824	0.905	0.907	0.930	0.725	1.862
	PD2	0.849					
	PD3	0.874					
	PD4	0.840					
	PD5	0.871					
Work demand constraints	WDC1	0.802	0.876	0.883	0.909	0.668	1.456
	WDC2	0.835					
	WDC3	0.839					
	WDC4	0.789					
	WDC5	0.820					

1 = agreeableness, 2 = bullying behavior, 3 = consciousness, 4 = extroversion, 5 = neuroticism, 6 = openness to experience, 7 = psychological distress, and 8 = work demand constraints.

proper reading and understanding the questionnaire. This study also addressed the issue of common method bias (CMB), by using a procedural and a statistical remedy as presented by Kock and colleague (Kock and Lynn, 2012; Kock, 2015). They presented a full collinearity test for PLS-SEM as an inclusive procedure whereby, the variance inflation factors (VIFs) of all the model's latent constructs are generated. An occurrence of a VIF exceeding a 3.3 threshold would indicate pathological collinearity and hence, that the model may be “contaminated by common method bias” (Kock, 2015, p. 7). In this study, all VIFs were below the suggested edge, thus suggesting that CMB may not be a threat to the proposed model. Previous empirical research (Anasori et al., 2020) presented an analogous way of assessment of the potential peril of common method bias. The VIF values are given in Table 2.

Results

The study applies Smart PLS 3.3.3 for the assessment of measurement and path models and provides model fit indices in terms of R square, Q square, and F square (Hair et al., 2020). The normality of the data was not good so the Smart PLS was used to

test structural equation modeling (Richter et al., 2020) because Smart PLS does not require the normality of the data (Sarstedt et al., 2019). The findings of the study are discussed below:

Assessment of measurement model

Assessment of the measurement model includes both the reliability and validity of the measurement scales. The reliability of the constructs shows the Cronbach alpha and composite reliability of the measurement constructs. Cronbach alpha and composite reliability (international consistency) values should be equal to 0.7 or greater than the threshold value of 0.7 (Sarstedt et al., 2019; Hair et al., 2020). Table 2 shows that the value of each construct in the model was higher than 0.70 (Cronbach alpha) and composite reliability so, we could say that there was good reliability of the measurement constructs. On the other hand, the validity includes both convergent and discriminant validity (Richter et al., 2020). Additionally, convergent validity shows two parameters like one are factor/outer loadings and the second is average variance extracted (AVE), while discriminant validity presents two ways to explain discriminations like one is cross-loadings and the second is HTMT ratio criteria abbreviated as

TABLE 3 Cross loadings.

	1	2	3	4	5	6	7	8
AGR1	0.853	−0.231	0.525	0.594	0.530	0.462	−0.315	−0.162
AGR2	0.938	−0.324	0.686	0.682	0.580	0.523	−0.489	−0.318
BB1	−0.165	0.811	−0.260	−0.137	−0.212	−0.171	0.526	0.486
BB2	−0.334	0.882	−0.395	−0.303	−0.319	−0.314	0.630	0.562
BB3	−0.272	0.911	−0.408	−0.280	−0.367	−0.269	0.587	0.581
BB4	−0.351	0.878	−0.418	−0.294	−0.376	−0.296	0.566	0.549
BB5	−0.237	0.838	−0.443	−0.252	−0.406	−0.325	0.576	0.539
CON1	0.651	0.403	0.910	0.678	0.651	0.568	−0.536	−0.366
CON2	0.590	0.409	0.898	0.552	0.728	0.657	−0.478	−0.395
EXT1	0.636	0.229	0.634	0.915	0.609	0.581	−0.539	−0.287
EXT2	0.677	−0.314	0.618	0.920	0.577	0.467	−0.512	−0.235
NEU1	0.597	−0.369	0.711	0.620	0.924	0.660	−0.486	−0.365
NEU2	0.549	−0.356	0.696	0.576	0.925	0.656	−0.499	−0.405
OTE1	0.508	−0.275	0.645	0.528	0.662	0.910	−0.527	−0.334
OTE2	0.489	−0.307	0.577	0.504	0.625	0.900	−0.474	−0.326
PD1	−0.389	0.705	−0.536	−0.446	−0.560	−0.525	0.824	0.642
PD2	−0.365	0.463	−0.394	−0.458	−0.391	−0.434	0.849	0.616
PD3	−0.396	0.502	−0.523	−0.540	−0.450	−0.510	0.874	0.476
PD4	−0.305	0.647	−0.432	−0.426	−0.397	−0.395	0.840	0.545
PD5	−0.516	0.510	−0.496	−0.569	−0.454	−0.484	0.871	0.598
WDC1	−0.173	0.404	−0.281	−0.103	−0.217	−0.200	0.414	0.802
WDC2	−0.293	0.521	−0.430	−0.354	−0.478	−0.455	0.643	0.835
WDC3	−0.271	0.555	−0.368	−0.250	−0.302	−0.296	0.618	0.839
WDC4	−0.170	0.629	−0.274	−0.155	−0.287	−0.142	0.495	0.789
WDC5	−0.230	0.423	−0.346	−0.263	−0.385	−0.374	0.563	0.820

1 = agreeableness, 2 = bullying behavior, 3 = consciousness, 4 = extroversion, 5 = neuroticism, 6 = openness to experience, 7 = psychological distress, and 8 = work demand constraints.

heterotrait monotrait ratio (Sarstedt et al., 2019; Hair et al., 2020). Table 2 presents the results that values of factor/outer loadings were higher than 0.7 on the one hand, and the average variance extracted value of each construct was also higher than 0.5, so we could say that there was good convergent validity. Meanwhile, Table 3 shows that cross-loadings of one construct' items were higher than the loadings of another construct' items because the loadings of one construct should be higher than the loadings of another construct in the same column (Hair et al., 2020). Additionally, Table 4 presents that the value of the HTMT (heterotrait-monotrait) ratio should be lower than 0.9, so the value of each construct in the HTMT table was lower than the value of 0.9 in diagonal form (Sarstedt and Cheah, 2019).

Assessment of path model direct and mediation analysis

The study applied bootstrapping technique with 1,000 sub-sample and maximum iterations (Sarstedt et al., 2019; Hair et al., 2020). Bootstrapping technique meets three criteria like regression value (r) should be between + 1

and −1, t -value should be higher than + 1.96 in case of 0.5 significance level and 95% confidence interval, and p -value should be lower than 0.05, means $p < 5\%$ (Sarstedt et al., 2019; Hair et al., 2020; Richter et al., 2020). Smart PLS provides specific indirect effects (Richter et al., 2020). Therefore, the study consults the direct effects in case of a direct link between exogenous construct and indigenous construct; however, it consults special, indirect effects in case of mediating the relationship between exogenous construct and endogenous construct. Table 5 present that work demand constraints significantly and positively influenced bullying behavior ($b = 0.535$, t -value = 12.874, p -value = 0.000) in turn, significantly and positively influenced psychological distress ($b = 0.355$, t -value = 9.006, p -value = 0.000). Additionally, work demand constraints significantly and positively and directly influenced psychological distress ($b = 0.358$, t -value = 9.716, p -value = 0.000). Furthermore, bullying behavior was found to have a significant and positive mediating role between work demand constraints and psychological distress ($b = 0.190$, t -value = 6.244, p -value = 0.000). Therefore, it was proved that work demand constraints affected bullying behavior, and it was the highest side effect of work demand constraints on

TABLE 4 Heterotrait-monotrait (HTMT) ratio.

	1	2	3	4	5	6	7
Agreeableness							
Bullying behavior	0.365						
Consciousness	0.871	0.529					
Extroversion	0.900	0.339	0.857				
Neuroticism	0.774	0.446	0.890	0.788			
Openness to experience	0.708	0.377	0.870	0.718	0.884		
Psychological distress	0.535	0.728	0.666	0.668	0.610	0.656	
Work demand Constraints_	0.320	0.691	0.504	0.327	0.479	0.434	0.747

1 = agreeableness, 2 = bullying behavior, 3 = consciousness, 4 = extroversion, 5 = neuroticism, 6 = openness to experience, 7 = psychological distress, and 8 = work demand constraint.

bullying behavior. Meanwhile, work demand constraints also affect psychological distress, and it means the work demand constraints create psychological distress in employee's lives. Third, bullying behavior was the third severe factor creating psychological distress in employees' lives.

Moderation analysis

By analyzing the moderating relationships, [Table 6](#) presents that extroversion did not significantly moderate the link between work demand constraints and bullying behavior ($b = 0.066$, $t\text{-value} = 1.105$, $p\text{-value} = 0.270$). Second, agreeableness was not found to have a moderating role between work demand constraints and bullying behavior ($b = 0.061$, $t\text{-value} = 1.282$, $p\text{-value} = 0.200$). Third, Consciousness was not found to have a significant moderated role between work demand constraints and bullying behavior ($b = -0.002$, $t\text{-value} = 0.028$, $p\text{-value} = 0.977$). Forth, neuroticism did not significantly moderate the link between work demand constraints and bullying behavior ($b = -0.041$, $t\text{-value} = 0.746$, $p\text{-value} = 0.456$). Fifth, openness to experience was found to have a significant and negative moderated link between work demand constraints and bullying behavior ($b = -0.114$, $t\text{-value} = 2.495$, $p\text{-value} = 0.013$).

By analyzing the moderating role between work demand constraints and psychological distress, the study shows that extroversion did not significantly moderate between work demand constraints and psychological distress ($b = -0.008$, $t\text{-value} = 0.224$, $p\text{-value} = 0.823$). As well, agreeableness was found to have a significant and negative moderating relationship between work demand constraints and psychological distress ($b = -0.154$, $t\text{-value} = 4.222$, $p\text{-value} = 0.000$). Additionally, Consciousness ($b = 0.063$, $t\text{-value} = 1.375$, $p\text{-value} = 0.170$), and neuroticism ($b = -0.059$, $t\text{-value} = 1.725$, $p\text{-value} = 0.085$) were

not found to have a significant and negative moderating relationship between work demand constraints and psychological distress. Most interestingly, openness to experience was also found to have a significant moderating role between work demand constraints and psychological distress ($b = 0.096$, $t\text{-value} = 3.021$, $p\text{-value} = 0.003$). Finally, it was found that openness to experience was one of the factors that negatively affected bullying behavior through work demand constraints. In the second stage, agreeableness and openness to experience were two of the five factors that showed moderation. In which agreeableness negatively and significantly moderates the link between work demand constraints and psychological distress. While, openness to experience positively and significantly moderates the link between work demand constraints and psychological distress.

Discussion

This study aims to increase human sustainability in organizations to contribute to social dimensions of sustainability by reducing bullying behavior at the workplace. Human sustainability focuses on employee well-being. We have discussed the factor, bullying behavior and its antecedent WDC, which negatively impacts human sustainability. By avoiding this factor or reducing the intensity of this variable, workplace bullying, we can increase human development and hence play a role in human sustainability ([Eizenberg and Jabareen, 2017](#)).

This research investigates the negative role of workplace bullying in sustainable human development in the service sector, particularly employees' exposure to workplace bullying according to the work environment hypothesis. Based on mediated moderation analysis of the service sector's employees; in different departments, this research found that work demand constraints, personality traits, and psychological distress are significant correlations to workplace bullying. Results show a high percentage of bullying victimization in the service sector.

This study proposed a theoretical framework for the work demand constraints model (WDC) that examined the linkage between four significant variables, i.e., work demand constraints, bullying behavior, psychological distress, and personality traits. This study outcome shows work demand constraints are a great risk factor for involving in bullying behaviors. This is also supported by existing research ([Budin et al., 2013](#); [Spagnoli and Balducci, 2017](#)). The service sector environment can be portrayed as fast-paced and highly stressed than others, and more performance-oriented as employees directly interact with customers. Work demand constraints in the form of workload, excessive work stress, Pressure to meet deadlines/targets, and fight for survival may deteriorate the work environment, which may act as the antecedent of workplace bullying. Previous research has found that role

TABLE 5 Regression coefficients.

	Original sample (O)	Standard deviation (STDEV)	T statistics (O/STDEV)	P-values
Work demand constraints_ -> Bullying behavior	0.535	0.042	12.874	0.000
Bullying behavior -> Psychological distress	0.355	0.039	9.006	0.000
Work demand constraints_ -> Psychological distress	0.358	0.037	9.716	0.000
Work demand constraints_ -> Bullying behavior -> Psychological distress	0.190	0.030	6.244	0.000

$p < 0.05$.

TABLE 6 Regression coefficients for moderation.

	Original sample (O)	Standard deviation (STDEV)	T statistics (O/STDEV)	Coefficients of moderation	P-values
Work demand constraints*Extroversion -> Bullying behavior	0.066	0.060	1.105	0.31	0.270
Work demand constraints*Agreeableness -> Bullying behavior	0.061	0.048	1.282	0.55	0.200
Work demand constraints*Consciousness -> Bullying behavior	-0.002	0.076	0.028	0.37	0.977
Work demand constraints*Neuroticism -> Bullying behavior	-0.041	0.055	0.746	0.41	0.456
Work demand constraints*Openness to experience -> Bullying behavior	-0.114	0.046	2.495	0.11	0.013
Work demand constraints*Extroversion -> Psychological Distress	-0.008	0.035	0.224	0.58	0.823
Work demand constraints*Agreeableness -> Psychological distress	-0.154	0.037	4.222	0.15	0.000
Work demand constraints*Consciousness -> Psychological distress	0.063	0.046	1.375	0.29	0.170
Work demand constraints*Neuroticism -> Psychological distress	-0.059	0.034	1.725	0.35	0.085
Work demand constraints*Openness to experience -> Psychological distress	0.096	0.032	3.021	0.09	0.003

$p < 0.05$.

conflict, low job control, and job strains (Balducci et al., 2020) are significantly related to workplace bullying.

A significant contribution of this study is identifying the underlying mechanism in the association of work demand constraints -workplace bullying through personality traits. The study proved that only openness to experiences in personality traits is the primary resource that plays a moderator role in the relation between work demand constraints and

workplace bullying. Meanwhile, agreeableness and openness to experiences were moderating the relationship between work demand constraints and psychological distress. Identifying personality traits (agreeableness and openness to experiences) as a psychological motive between these associations as well as discussing their essential role in predicting employee's becoming a victim of workplace bullying in service sector is a major contribution of this study. Which may provide

guidance to top management and employers in policymaking to identify personality traits during interviews. Employers and policy makers may also develop personalities by providing training on personality development. This shows that human sustainability can be increased by developing personality traits in the workplace.

Our study results supported [Pabón-Carrasco et al. \(2020\)](#) and [Mitsopoulou and Giovazolias's \(2015\)](#) findings that personality traits (openness to experiences) have a linkage with bullying behavior. While Openness to experiences and agreeableness have association with psychological distress which supports the thought of [\(Naseem and Ahed, 2021\)](#). However, our results were not supporting the thoughts of [\(Kokkinos et al., 2016; Koukia, 2020\)](#), as extroversion and conscientious were insignificant. However, our study is of its kind, which identifies the moderating effect of personality traits on the WDC and bullying relationship. This shows that employees with strong personality traits minimize the effect of work demand constraints on psychological distress and show less psychological irritating outcomes. These results suggested that improving personality traits (agreeableness and openness to experiences) among employees of service sectors helps to avoid from becoming bullying victims. This also shows that personality traits (agreeableness and openness to experiences) play a significant role in human sustainability in organizations.

The results show that work demand constraints are positively related to workplace bullying, and supported [\(Heffernan and Bosetti \(2021\), Niedhammer et al., 2020\)](#) and [Samsudin et al. \(2020\)](#) school of thought that bullying is the characteristic organizational hypothesis. Our study also supports [Bashir and Hanif's \(2019\)](#) findings which found bullying was related to psychological strain. Our results were contrary to the finding of [\(Nielsen and Einarsen, 2018\)](#), who found that concerning health and other psychological distress, individual dispositions and organizational characteristics play a buffering role.

Theoretical implications

Research outcomes entail a significant effect on psychological distress (PS) through workplace bullying (WB). Embedded with the proposition of job demand theory, this study provides a theoretical contribution in the context of the WDC-WB relationship and subsequently, WB-PS linkage. These outcomes not only support the theoretical grounding of this study but also further provides a deep understanding of the effects related to psychological distress. Furthermore, this study develops the theoretical understanding of the moderation effects that are analyzed in this study model. Therefore, this study contributes to both organizational psychology and service sector organizations in terms of literature and theoretical development and helps in human sustainability by improving

mental health. When employees possess certain work demand constraints, they may combat or fall victim to bullying but have strong personality traits they may avoid becoming a bullying victim. Similarly, employees with strong personality traits (agreeableness and neuroticism) may have fewer psychological impacts than fewer personality traits. Our results stress that a strong personality trait (agreeableness and neuroticism) is a buffer in bullying. Our results are in-line with the thought of prior studies [\(Baillien et al., 2019; Samsudin et al., 2020\)](#) and support the organizational factors of workplace bullying. Our findings suggest that how personality traits help individuals at workplace to reduce the bullying effects and renders converting them into psychological distress.

Practical implications

Our study suggests few practical implications for policymakers, executive officers, employers, and authorities. Firstly, remodeling the educational curriculum is required to eradicate bullying from the grassroots level; ethics, morality, and social values should be incorporated into the syllabus of business studies. Secondly, periodically personality development training should be provided to all employees serving at all levels, especially senior employees, which will help them survive in this growing and diverse environment.

Thirdly, employers should introduce a reporting system where employees may report a complaint against bullying behavior for organizations' sustainability. They must have surety organizations will provide shelter from emotional halt caused by bullying behavior by making the environment safe. [Salin \(2015\)](#) has also focused on redesigning the work environment and has deliberated that these personality development programs and training will help change the workplace environment. Fourthly, providing psychological counseling services at the organizational level or having an agreement with occupational health care to help employees in prevention against bullying may be a good remedy and increase human sustainability in organizations.

Limitations and future directions

Since cross-sectional research has limitations concerning understanding prediction and criterion linkage among variables. Methodological constraints of the current study open new pathways for future studies such as: First longitudinal designs may be an appropriate approach in the future [\(Nielsen and Einarsen, 2012b\)](#). In addition to longitudinal design, short and long intervals might have better potential concerning time laps to prosper relationships among bullying and its consequences. Also, workplace bullying is a continuous process that needs a longer period. Diary studies with repeated measurement points

may also provide a valuable approach. Besides, most studies use a self-reported questionnaire with a subjective approach; future research requires an objective approach.

Furthermore, personality traits (Extroversion, consciousness, and neuroticism) were not found to have a moderating role among work demand constraints, bullying behavior, and psychological distress; however, future studies may use some other variables such as emotional intelligence (Bunnett, 2021), leadership skills (Fontes et al., 2019), and deep surface acting behaviors (Khurram et al., 2020) as a buffer to reduce bullying effects.

This study was conducted in service sector, where employees need to direct interact with customers. In manufacturing sector, job demands and resources may be used in a different perspective. The current study used a job demand theory, future studies may use a combination of job demand and job resource theory or job demand support model. Organizational support system may be helpful for employees to make them less psychologically sick.

Conclusion

Our study significantly contributes to the literature on organizational psychology and human sustainability by discussing the importance of workplace bullying. Individuals with strong personality traits (agreeableness and openness to experiences) may be beneficial in either avoiding being a bullying victim or its consequences such as psychological distress. Our study has theoretical and practical implications for employees and employers in organizations. Our empirical results demonstrate that work demand constraints are positively linked with bullying behavior and psychological distress. However, these two strong personality traits play a buffer role in this relationship. Excessive research stressed workplace bullying distress such as physical exhaustion, fatigue, mental illness, sleep-related problems, and disorders, but our finding recommends that personality traits play a role in controlling the psychological effect of bullying.

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Data availability statement

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

Ethics statement

This study was reviewed and approved by the University Research Committee. The patients/participants provided their written informed consent to participate in this study.

Author contributions

KN drafted the idea, collected the data, and analyzed the results. MA handled all the revision asked by reviewers and documented the manuscript for grammatical and language issues. Both 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.

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Appendix: Survey questionnaire

Survey part 1

Demographics

1. Employment Sector. public/private.
2. Age. 21–30, 31–40, 41–50, 51–60.
3. Gender. Male/Female.
4. Job Experience. 1–5, 6–10, 11–15, 16–20, above.
5. Qualification. Higher secondary/Graduation/Masters and MPhil.
6. Marital Status. Single/Married.

“Bullying takes place when one or more persons systematically and over time feel that they have been subjected to negative treatment on the part of one or more persons, in a situation in which the person(s) exposed to the treatment have difficulty in defending themselves against them”. It is not bullying when two equally strong opponents are in conflict with each other.

Over the last six months, how often have you or any other employee been subjected to the following negative acts at work? Please circle the number(s) that best corresponds with your experience over the last six months.

TABLE A1

S#	Work related bullying at workplace	Never	Now and then	Monthly	Weekly	Daily
1	Having your opinions ignored.	1	2	3	4	5
2	Persistent criticism of your work and efforts.	1	2	3	4	5
3	Being given tasks with unreasonable deadline.	1	2	3	4	5
4	Being exposed to unmanageable workload.	1	2	3	4	5
5	Being shouted at or target of spontaneous anger.	1	2	3	4	5

TABLE A2

S#	Work demand constraints items	Strongly disagree	disagree	Neutral	Agree	Strongly agree
1	My job requires all of my attention.	1	2	3	4	5
2	I feel like I have a lot of work demands.	1	2	3	4	5
3	My work requires Excessive workloads and multiple skill sets.	1	2	3	4	5
4	I am given a lot of work to do.	1	2	3	4	5
5	I feel like I have a Pressure to meet deadlines/targets.	1	2	3	4	5

Survey part 2

TABLE A1

S#	Personality traitsI see myself as someone who...	Strongly disagree	disagree	Neutral	Agree	Strongly agree
1	... is reserved	1	2	3	4	5
2	... is generally trusting	1	2	3	4	5
3	... tends to be lazy	1	2	3	4	5
4	... is relaxed, handles stress well	1	2	3	4	5
5	... has few artistic interests	1	2	3	4	5
6	... is outgoing, sociable	1	2	3	4	5
7	... tends to find fault with others	1	2	3	4	5
8	... does a thorough job	1	2	3	4	5
9	... gets nervous easily	1	2	3	4	5
10	... has an active imagination	1	2	3	4	5

TABLE A2

S#	Psychological distress I see myself as someone who often feels...	Strongly disagree	disagree	Neutral	Agree	Strongly agree
1	Wobbliness in legs Unable to relax	1	2	3	4	5
2	Numbness or tingling Feeling hot	1	2	3	4	5
3	Fear of the worst happening	1	2	3	4	5
4	Difficulty in breathing and Fear of dying	1	2	3	4	5
5	Fear of losing control	1	2	3	4	5

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