



# Emotional Agency at Work: The Development and Validation of a Measure

Päivi Kristiina Hökkä<sup>1,2\*</sup>, Eija Räikkönen<sup>3</sup>, Heini Ikävalko<sup>4</sup>, Susanna Paloniemi<sup>1</sup> and Katja Vähäsantanen<sup>5</sup>

<sup>1</sup> Department of Education, University of Jyväskylä, Jyväskylä, Finland, <sup>2</sup> Faculty of Education and Culture, Tampere University, Tampere, Finland, <sup>3</sup> Faculty of Education and Psychology, University of Jyväskylä, Jyväskylä, Finland, <sup>4</sup> Aalto University School of Business, Center for Knowledge and Innovation Research, Aalto University, Espoo, Finland, <sup>5</sup> Finnish Institute for Educational Research, University of Jyväskylä, Jyväskylä, Finland

Despite intensive research on agency in education and work environments, the topic remains underexplored through the lens of emotions. This study conducted the development and validation of a quantitative measure to explore emotional agency in working life. Empirical data ( $N = 240$ ) were collected via a web-based survey within the professional domains of healthcare and real estate services. The participants' age, educational level, and gender corresponded to the domain-specific and general employee distribution in Finland. The questionnaire items were based on a theoretical construct of emotional agency at work. Exploratory factor analysis indicated that emotional agency includes two dimensions: *Emotional Competence at Work* and *Influencing Emotions at Work*. Exploratory structural equation modeling showed these dimensions to be equivalent across the studied professional domains. Furthermore, the convergent and discriminant validity of the measure was confirmed in relation to the *emotional climate at work* and *work engagement*. The study enriches the current theory of agency and emotions at work by exploring their connection. It also proposes a novel measure of emotional agency at work (the *E-Ag* measure), offered as a useful tool for researching and developing working life and organizational behavior.

**Keywords:** agency, emotion, emotional agency, work engagement, emotional climate, measure

## OPEN ACCESS

### Edited by:

Matheus Perazzo,  
Federal University of Minas Gerais,  
Brazil

### Reviewed by:

Raul Ramirez-Vielma,  
University of Concepcion, Chile  
Hassan Khajavy,  
University of Bojnord, Iran

### \*Correspondence:

Päivi Kristiina Hökkä  
paivi.hokka@jyu.fi

### Specialty section:

This article was submitted to  
Assessment, Testing and Applied  
Measurement,  
a section of the journal  
Frontiers in Education

**Received:** 11 January 2022

**Accepted:** 09 June 2022

**Published:** 05 July 2022

### Citation:

Hökkä P, Räikkönen E, Ikävalko H,  
Paloniemi S and Vähäsantanen K  
(2022) Emotional Agency at Work:  
The Development and Validation of a  
Measure. *Front. Educ.* 7:852598.  
doi: 10.3389/educ.2022.852598

## INTRODUCTION

The concept of agency has been a topic of interest for decades, especially in the fields of social science, psychology, philosophy, and gender studies. In general, agency refers to active human participation that has the power to make a difference, and to influence current circumstances (e.g., Giddens, 1984; Bandura, 1989). This means that individuals are seen as having the capacity to determine their own lives and destiny, and not as subjugated to surrounding structures or forces. In working life and organization studies, the concept of agency has emerged as a construct for understanding how individuals and organizations can survive or even flourish amid rapid societal and organizational changes (Eteläpelto et al., 2013; Hager and Beckett, 2019). As a result of ongoing global and societal transformations, individuals are expected to adopt new orientations toward their work and to enlarge their professional roles, all with a willingness to be flexible and ready for continuous development and learning (e.g., Hökkä et al., 2019). This underlines the meaning of agency as a crucial aspect of continuous learning in workplace contexts (Tynjälä, 2013; Vähäsantanen et al., 2017; Wallin et al., 2022). At the same time, efforts in this direction often have

to be implemented amid tightening accountability, restructuring, and global competition (e.g., Luo, 2005), and—in recent years—global crises (Li et al., 2020).

Everyday activities and interactions at work are crucial at many learning sites throughout individuals' working lives (Billett and Noble, 2017; Smith, 2017). In these interactions, agency is intertwined with learning at work in a wide range of ways. It encompasses influencing, developing, and transforming existing cultures and practices at work (Billett, 2011; Eteläpelto, 2017). Empirical studies have highlighted the importance of agency in learning at work with regard to creative thinking and innovations (Collin et al., 2017; Messmann and Mulder, 2017), developing occupational knowledge and skills (Smith, 2017), intrapreneurship (Parker, 2011; Wiethe-Körprich et al., 2017), and proactive career planning (Forrier et al., 2009; Vähäsantanen and Eteläpelto, 2015).

Despite considerable research on agency at work, the topic has remained underexplored in terms of its emotional components. Agency at work has mainly been conceptualized as rational and goal-oriented actions aimed at making a difference to a state of affairs, with little attention given to how emotions enter into agentic actions (Hökkä et al., 2019). This, then, is why we argue the need for a deeper understanding of the relationship between emotions and agency, encompassing in particular emotional agency at work. So far, only a few papers (Krone and Dougherty, 2015; Weenink and Spaargaren, 2016; Hökkä et al., 2019) have dealt with the construct of emotional agency *per se*, and no study has investigated such a construct via quantitative measurements. Overall, our aim is to enrich the current theory of agency at work by elaborating the concept of emotional agency, and to develop and validate a quantitative measure of it. In this paper we also discuss the implications of emotional agency at work, and how the instrument (*E-Ag* measure) might be used in researching working life and in bringing about organizational change. We anticipate that the new instrument may provide new ways for organizations to intentionally focus and improve emotional components of organizational practices and development.

## CONCEPTUAL FRAMEWORK

### The Conceptualization of Emotional Agency

So far, only a few studies have elaborated the relationship between emotions and agency in working life (e.g., Hughes, 2005; Agrawal et al., 2013; Hökkä et al., 2017; Ursin et al., 2020). These have shown that emotions can both enable and constrain the enactment of agency. For example, there is evidence that the emotion of fear exerts a strong power in pushing leaders toward agentic actions, whereas it seems to paralyze employees and prevent them from taking agentic actions even if urgently needed to transform work practices (Hökkä et al., 2017). However, the studies in question have elaborated the relation between emotion and agency one-sidedly and have not addressed how emotions are dealt with and influenced by agency. In addition, in elaborating the relationship between emotions and agency, there have been

some tentative attempts to apply and describe the concept of *emotional agency* (e.g., Krone and Dougherty, 2015; Weenink and Spaargaren, 2016; Hökkä et al., 2017). However, these have failed to give a comprehensive and elaborative description of the concept due to applying an overly narrow focus or rendering a vague theoretical definition. Thus, a more comprehensive conceptualization of emotional agency at work is needed, which could be built on previous conceptualizations of both agency and emotions. Next, we will share our understanding of emotional agency by first focusing on describing our approach to agency at work and then on emotions at work.

### Agency at Work

In general, agency at work has been categorized on the basis of two different approaches. In the first place, agency has been described as a *behavioral phenomenon*, that is, as something that individuals do with transformative or creative purposes in mind, either on their own or with other people (Eteläpelto et al., 2013; Damsa et al., 2017). Agency at work would thus refer to the ways in which professionals exert influence, take initiatives, make choices, and engage in negotiations regarding (i) their work (i.e., their individual and collective ways of working), and (ii) their professional identity (i.e., their professional interests, goals, and values). Viewed in this light, agency is manifested via renegotiating one's professional identity (Vähäsantanen et al., 2017), influencing and developing work practices and environments (Kerosuo, 2017), or transforming organizational and institutional structures (Tuominen and Lehtonen, 2018).

The recent studies by Vähäsantanen et al. (2017, 2022) have elaborated the concept of agency at work by adopting a subject-centered sociocultural approach (Eteläpelto et al., 2013, 2014) that emphasizes agency as an action-based phenomenon that is enacted within sociocultural conditions by individuals based on their unique life narratives. They have further presented a multidimensional structure of agency at work that consists of three different dimensions: *Influencing at work*, *Developing work practices*, and *Negotiating professional identity*. This structure of agency at work emphasizes agency in the form of intentional actions at work aiming to improve work performance and practices.

Current literature also suggests that agency can be understood as an *individual capacity, skill, or competence* (Goller and Paloniemi, 2017). In this case, agency is notably conceptualized as an individual characteristic encompassing the dispositions and competences that enable individuals to make choices and initiate actions in such a way as to exercise control in their professional lives and work environments (Goller, 2017; Goller and Harteis, 2017). In fact, in building on previous approaches to agency as (i) behavior or (ii) an individual characteristic, we recognize these as complementary. We see emotional agency as encompassing both individual competencies and actual behavior, such as when a person influences emotions or consciously uses emotions in everyday work practices.

### Emotion at Work

In organization and workplace studies, there is a long tradition of studies on the operations and conceptions of emotion at

work. In these studies, a psychological approach has prevailed wherein emotions are viewed mainly as individual and subjective experiences, emphasizing emotion either as universally shared, discrete states (e.g., Ekman, 2016) or as dimensions of valence and arousal (Harmon-Jones et al., 2016). However, during the last few decades, sociological and sociocultural understandings of emotion have become increasingly prominent. These approaches tend to emphasize emotions as socioculturally and collectively constructed interpersonal entities that are dependent on learned rules, and as socially produced categories and concepts (Barbalet, 2001; Russell, 2003; Boler and Zembylas, 2016). Thus, emotions are not seen primarily as phenomena existing in the mind but rather as entities that shape social interaction and its consequences (Hareli et al., 2008). Despite this, both psychological and sociological approaches have been challenged on the grounds that they offer too narrow a picture of the multidimensional nature of emotion. The sociological approach has been criticized for ignoring the importance of the individual and of subjective feelings, and also for reducing emotion to meanings (Leavitt, 1996). For its part, the psychological approach has been seen as narrowing the scope of emotions to the point that they become intrapersonal feelings (of a universal nature), separated from social and contextual practices, circumstances, and cultures (e.g., Parkinson, 1995; Schutz and DeCuir, 2002).

On the basis of the criticisms above, scholars—notably in the fields of adult education and organizational studies—have called for a more holistic understanding of emotion. This would take into account both individual and social aspects of emotion, and pay attention also to their interactions (e.g., Zembylas, 2007; Butler and Gross, 2009; Rimé, 2009). Our understanding of emotion is in accord with these pleas. We thus understand emotions as subjective experiences, which are at the same time embedded in sociocultural contexts that can act as either triggers or inhibitors of certain emotions. This way of thinking emphasizes also the processual nature of emotions, situated, as they are, within the dynamic everyday actions that take place in the workplace and elsewhere.

From this understanding of emotions, plus our understanding of agency at work as encompassing both characteristics and behavior, we see *emotional agency* through an integrative lens. Emotional agency is thus characterized as individuals' competences and intentional emotion-related actions that take place within real-life organizational cultures and practices and which can be supported or hindered by the sociocultural affordances of these. This definition takes into account the relationship between agency and emotion as reciprocal; more specifically, it includes a theoretical distinction insofar as it views emotional agency as the *intentional influencing of emotions at work*. This involves the competence to perceive, understand and take into account both one's own and other people's emotions, and influencing emotions in organizational practices, actions and interactions. On the basis of this conceptualization, we assumed emotional agency to encompass two potential dimensions, namely *Emotional Competence at Work* and *Influencing Emotions at Work*. Next, we will look at these dimensions in more detail.

## Potential Dimensions of Emotional Agency

### Emotional Competence at Work

In understanding and studying emotions in workplace contexts, the construct of emotional intelligence has been very popular in recent decades. Emotional intelligence refers to an individual's ability to perceive, assimilate, understand and manage their own emotions and those of others (Mayer et al., 1999; Van Rooy and Viswesvaran, 2004). Despite its popularity, there has been a lively and critical discussion about the topic regarding, for example, whether emotional intelligence is an innate trait or something that can be learned. The scholars that emphasize the idea that emotional skills can be learned and developed prefer the concept of *emotional competence* (e.g., Goleman, 1998; Kotsou et al., 2011; Wang et al., 2016; Gerbeth et al., 2021). They propose that emotional intelligence offers a foundation, but to enable ongoing development and improvement at work (e.g., improved job performance) emotional competence must be developed (Vaida and Opre, 2014). Thus, emotional competence includes how a member of an organization recognizes, expresses, and deals with emotions at work (e.g., Kim et al., 2009; Ikävalko et al., 2020) plus the idea of individuals' potential to learn to better deal with emotions at work (Kotsou et al., 2011; Brasseur et al., 2013). There is evidence that persons with greater emotional competence are likely to show improved work performance through their actions in the work setting (Kim et al., 2009) and that adults' emotional competence can be enhanced via emotion training (Kotsou et al., 2011). Clarke (2006) has argued that when the aim is to develop emotional competence at work, one must pay attention to the sociocultural nature of the work setting. In line with this, we consider it important to regard emotional competence as a phenomenon embedded in everyday work practices (Ikävalko et al., 2020).

### Influencing Emotions at Work

In conceptualizing emotional agency, another key principle is how one can influence emotions at work (Hökkä et al., 2017). This includes influencing both one's own and other people's emotions. Furthermore, it includes affecting shared emotions as well as the emotional climate of the work organization. Understanding emotional agency as intentional influencing of emotions thus underlines its nature as an action-based phenomenon enacted in certain sociocultural circumstances (cf., Eteläpelto et al., 2014; Vähäsantanen et al., 2017, 2022). The idea of influencing emotions at work can be seen as closely related to another emotion-based construct at work, namely emotion regulation. Emotion regulation refers to ways in which people control and manage their emotional responses in certain social circumstances. Gross (1998) defines emotion regulation as individuals influencing which emotions they have, when they have them, and how they express these emotions. This perspective encompasses how people can manage their emotional responses in order to adjust to prevailing circumstances in contextually and socially acceptable ways. The circumstances and sociocultural contexts in question have an effect on emotion regulation and on the regulation strategies that people use,

such as how people suppress or inhibit their authentic feelings (English et al., 2017). By including the contextual element of the situation, our conceptualization of emotional agency goes beyond the psychological concept of emotion regulation. We note that despite recent developments within emotion regulation literature—including the recognition of the role that context plays in emotional processes (cf., Brockman et al., 2017; English et al., 2017)—the main emphasis is still on the individual or interpersonal perspective and, further, on control over which emotions are experienced (Gross, 2015).

Influencing emotions at work also means strengthening positive emotions in work communities, bearing in mind that a supportive emotional climate is connected, for instance, to better service outcomes (Härtel et al., 2008) and fosters knowledge sharing among people in organizations (Jalili and Salempour, 2019). In addition, influencing emotions at work means taking constructive actions to deal with difficult and unpleasant emotions like anxiety and frustration. For example, a study by Stephens and Carmeli (2016) showed that when team members were able to constructively express their negative emotions this improved the knowledge creation within the team and performance outcomes. Thus, strengthening positive emotions does not mean enforced positivity, that is, allowing space only for positive emotions and suppressing negative ones (cf., Hochschild, 1983). To the contrary, in line with Parke and Seo (2017), our understanding of emotional agency as influential emphasizes the importance of dealing with all kinds of emotions at work, including negative or unpleasant ones.

As just described, we emphasize the integrative nature of emotional agency as encompassing both individual and social aspects of emotion and behavior as well as characteristic aspects of agency at work. Based on this theoretical understanding, we assumed the structure of emotional agency to be comprised of two dimensions: *Emotional Competence at Work* and *Influencing Emotions at Work*. Since there is so far no research addressing the structure of emotional agency, we aimed to validate a measure and to explore its structure within different professional domains, the final goal thus being to develop an applicable instrument for studying and developing working life.

## Emotional Agency and Other Emotion-Related Constructs

Through this study, our aim is to validate the dimensions of emotional agency in relation to emotional climate at work and work engagement. In our definition of emotional agency, we emphasize its integrative nature both as an individual and social phenomenon, as socioculturally supported and hindered within everyday work practices, and as an intentional action to influence emotions at work. We propose that all of these concepts (emotional agency, emotional climate at work, work engagement) refer to a positive attachment to work and that they are related to some extent. Accordingly, we assumed that there are positive associations between emotional agency and (i) emotional climate at work as well as with (ii) work engagement, but that emotional agency is distinct from these two phenomena. Due to the absence of previous quantitative studies on emotional

agency, clear assumptions regarding the magnitude of these associations were not made.

## Emotional Climate at Work

Emotional climate has been proposed as a useful concept for understanding organizational life and emotions in the workplace (Yurtsever and de Rivera, 2010; Liu et al., 2014). Using the term *affect climate*, Parke and Seo (2017, p. 335) defined it as “employees’ shared perception of organizational aspects such as policies, practices and routines, as well as the behaviors that are expected, supported or rewarded regarding their affective expressions or experiences.” Following this perspective and aligned to the general use of the “climate” concept (Luria, 2019), in the present study the emotional climate was understood as employees’ perceptions of the extent to which they perceive their organizational environment to be conducive to their emotions and emotion-related behavior.

Parke and Seo (2017) constructed a theory of *collective affective processes* that an organization’s affective climate shapes and sustains. According to Parke and Seo (2017), an authentic experiential climate within an organization allows members to openly discuss their emotions and to resolve negative feelings they have toward one another. The authors described the factors of *affect valence* and *affect authenticity* as resulting in different types of affective climates. However, they did not provide measures for evaluating the emotional climate.

Previous studies have shown that supportive emotional climate has many positive affects at organizations. For example, a study by Härtel and Liu (2012) presents the positive relationship between emotional climate and workplace effectiveness. A study by Patterson et al. (2004) showed that satisfaction with the organizational climate was strongly connected to company productivity. In our understanding of emotional agency, we underline its nature both as an individual and social phenomenon, and as socioculturally supported and hindered within organizational practices. We therefore assumed that emotional climate at work and emotional agency are positively related but empirically distinct phenomena.

## Work Engagement

Work engagement is a well-established and widely used measure, comprising the components of vigor, dedication, and absorption (Schaufeli et al., 2002). When first developed, work engagement was seen as a relatively stable phenomenon involving a positive work-related state of mind. However, recent studies have shown that both social and individual factors (e.g., job resources and personal resources) play a pivotal role and are important drivers for work engagement (Schaufeli et al., 2002). This implies the situational nature of work engagement.

Previous research on work engagement and its relation to various work-related phenomena gives due weight to the idea that emotional agency and work engagement are positively related. Work engagement has been found to have a positive association, for example, with job performance (Bakker and Bal, 2010), creativity (Demerouti et al., 2015), and job crafting (Petrou et al., 2017). Furthermore, emotion-related resources such as positive affect (Laguna et al., 2017) and the psychological safety

climate (Garrick et al., 2014) have been conceptualized as types of workplace resources that moderate the negative relationship between job demands and work engagement. There is strong evidence that work engagement can enhance both individual and organizational outcomes in terms of, for example, promoting health and wellbeing at work (Bakker and Bal, 2010; Hakanen and Schaufeli, 2012). Furthermore, there is evidence that work engagement is positively connected to productivity at work (Bakker et al., 2014) and to the sustainability of organizations (Schaufeli, 2013).

Since positive job-related emotions and work engagement are both positive (work-related) dimensions, it is reasonable to assume that they are conceptually closely related. There are nevertheless grounds for viewing them as conceptually and empirically distinct (see Van Wijhe et al., 2011). We anticipated that a similar distinction applies to emotional agency and work engagement, that is, that they would be positively related but conceptually and empirically distinct phenomena.

## THE RESEARCH QUESTIONS

In the present study, our aim was to develop and validate a measure for investigating emotional agency in working life. In addition, we examined whether employees from two different professional domains interpreted the measure of emotional agency in a conceptually similar manner. Overall, we aimed to validate the measure of emotional agency in relation to the (i) *emotional climate at work* and to (ii) *work engagement*. The research questions (RQ) were set as follows:

RQ1. What dimensions can be identified in terms of emotional agency at the workplace?

RQ2. Do employees in two different work contexts interpret the measure of emotional agency in a similar manner?

RQ3. Does emotional agency show adequate convergent and discriminant validity in relation to emotional climate at work and work engagement?

## MATERIALS AND METHODS

### Participants and Procedure

This study was conducted as part of a larger research project encompassing two organizations: real estate services (227 participants in total) and healthcare (118 participants in total). The data were gathered before the global COVID-19 pandemic, in 2018 and 2019. The topic was related to the companies' internal development projects, and the data collection was supported by the top management. To collect the data, the authors sent a personal e-mail to the employees, introducing the study and inviting them to respond anonymously to the questionnaire via a separate link. Participation was voluntary, with the option to withdraw at any time. The participants did not receive any financial or professional benefit from their participation.

The study was conducted in line with the instructions and ethical principles laid down by the EU General Data Protection Regulation (GDPR), the Academy of Finland, and the authors'

home university. The participants were informed of these points in the questionnaire, and the consent forms were collected in conjunction with the information. Ethical issues, such as voluntary participation and comprehensive information on the study (e.g., its purpose and ethical principles), were taken into account throughout the study. The data were gathered from two different professional domains. The questionnaire was filled in by 240 participants. The participants in data set 1 ( $n = 138$ ) came from real estate services, with a response rate of 61%. Those in data set 2 ( $n = 102$ ) were from the healthcare sector, with a response rate of 86%.

The respondent profiles of the participants from the two organizations were fairly similar (see **Table 1**). However, they differed notably in terms of gender (data set 1 was male-dominated, while data set 2 was female-dominated) and education (data set 1 participants had a lower education level than those in data set 2). Furthermore, in data set 1 more of the employees had a vocational education, and they also had longer work experience in the organization than did the employees in data set 2. The participants' age, education level, and gender corresponded to the domain-specific and general employee distribution in Finland (Lehto and Sutela, 2014).

## Measures

### Emotional Agency at Work

When we set up this study, there were no measures to investigate emotional agency at work. Hence, the first step was to develop a questionnaire with relevant items. From the inception of this development and validation study, our aim was to work toward a concise, rigorous, and user-friendly measure. This included the idea that when addressing the content validity of the measure the number of items must remain within reasonable limits. Moreover, in order to reduce potential method biases, we carried out several procedural methods (Podsakoff et al., 2003). First, we paid attention to the careful construction of the items themselves by avoiding ambiguous terms, vague concepts and double-barreled questions, and by keeping the questions as simple and concise as possible. Second, in the information letter shared via e-mail and in the online questionnaire's preface sheet we informed the participants that the answers are anonymous and that there are no "right or wrong" answers. In addition, we underlined that the collected data will be available only to the authors of this research project. These procedural methods were used to protect the respondents' anonymity, reduce possible evaluation apprehension, and improve the scale items (Podsakoff et al., 2003).

In designing the questionnaire, we referred to (i) previous research on emotions at work (e.g., Ashkanasy and Tse, 2000; Zembylas, 2007; Butler and Gross, 2009; Kim et al., 2009; Hodzic et al., 2018; Hökkä et al., 2019, 2020), (ii) research on agency at work (e.g., Billett, 2011; Eteläpelto et al., 2013, 2014; Damsa et al., 2017; Goller and Harteis, 2017; Goller and Paloniemi, 2017; Vähäsantanen et al., 2017), (iii) our own prior studies, understandings and observations, and (iv) close collaboration with a team of experts with expertise in emotion training in a variety of work organizations and professional

**TABLE 1** | Descriptive statistics (frequencies, *n*; percentages, %) for background variables (*N* = 219–236).

Background factors		Descriptive statistics			
		Real estate services ( <i>n</i> = 138)		Healthcare services ( <i>n</i> = 102)	
		<i>n</i>	%	<i>n</i>	%
Gender ( <i>n</i> = 236)	Men	103	75	23	24
	Women	30	22	70	71
	Other	5	3	5	5
	Missing	0		4	
<b><math>\chi^2(2) = 61.79, p &lt; 0.001</math></b>					
Age group ( <i>n</i> = 228)	20–29 years	11	8	10	11
	30–39	28	20	23	25
	40–49	29	21	26	29
	50–59	50	36	23	24
	60 +	19	14	9	11
Missing	1		11		
<b><math>\chi^2(4) = 5.32, n.s.</math></b>					
Level of education ( <i>n</i> = 233)	Low <sup>a</sup>	45	33	12	13
	Medium <sup>b</sup>	78	57	59	61
	High <sup>c</sup>	14	10	25	26
	Missing	1		6	
<b><math>\chi^2(2) = 18.20, p &lt; 0.001</math></b>					
Work experience ( <i>n</i> = 219)	0–9 years	72	53	57	69
	10–19	26	19	22	27
	20 +	38	28	4	5
	Missing	2		19	
<b><math>\chi^2(2) = 17.82, p &lt; 0.001</math></b>					
Position ( <i>n</i> = 232)	Leaders	22	16	14	15
	Employees	116	84	80	85
	Missing	0		9	
<b><math>\chi^2(1) = 0.047, n.s.</math></b>					

Valid frequencies and percentages are presented in the table.

<sup>a</sup>Upper secondary school diploma.

<sup>b</sup>Degree from vocational college or polytechnic, or a bachelor's degree from a university.

<sup>c</sup>At least a master's degree from a university or an equivalent degree from a polytechnic.

fields. The questionnaire development was also partly based on existing literature addressing measuring emotions, notably emotional competence (Kotsou et al., 2011; Brasseur et al., 2013; Wang et al., 2016) and emotional intelligence (EI) in teams (Jordan and Lawrence, 2009). However, as our focus was on emotions and agency, the previously validated scales were not appropriate for our purposes due to their individual focus and/or psychology-related orientation. Note also that although some existing EI measures are connected to teams (e.g., Jordan and Lawrence, 2009), but our aim was to more broadly capture the social and shared aspects of

emotions at the workplace, and also the behavioral aspects of emotional agency.

We chose altogether 12 items to represent emotional agency in the initial item pool, following a consensus on content validity and appropriateness. These items are presented in **Table 2** (variables 1.1–2.5). The response options for the items ranged from 1 (*I strongly disagree*) to 5 (*I strongly agree*). The initial questionnaire and the web-based implementation of it were pilot-tested with seven professionals working in the field of education in order to ensure the clarity and face validity of the items (Podsakoff et al., 2003). On the basis of the pilot testing, we made some modifications to the item formulations and to the general instructions. Originally, the items were developed and presented in Finnish. The English translations and back-translations were made by a native English linguistics expert who is also an expert in the Finnish language. These translations were further triangulated and discussed by the research team.

### Emotional Climate at Work

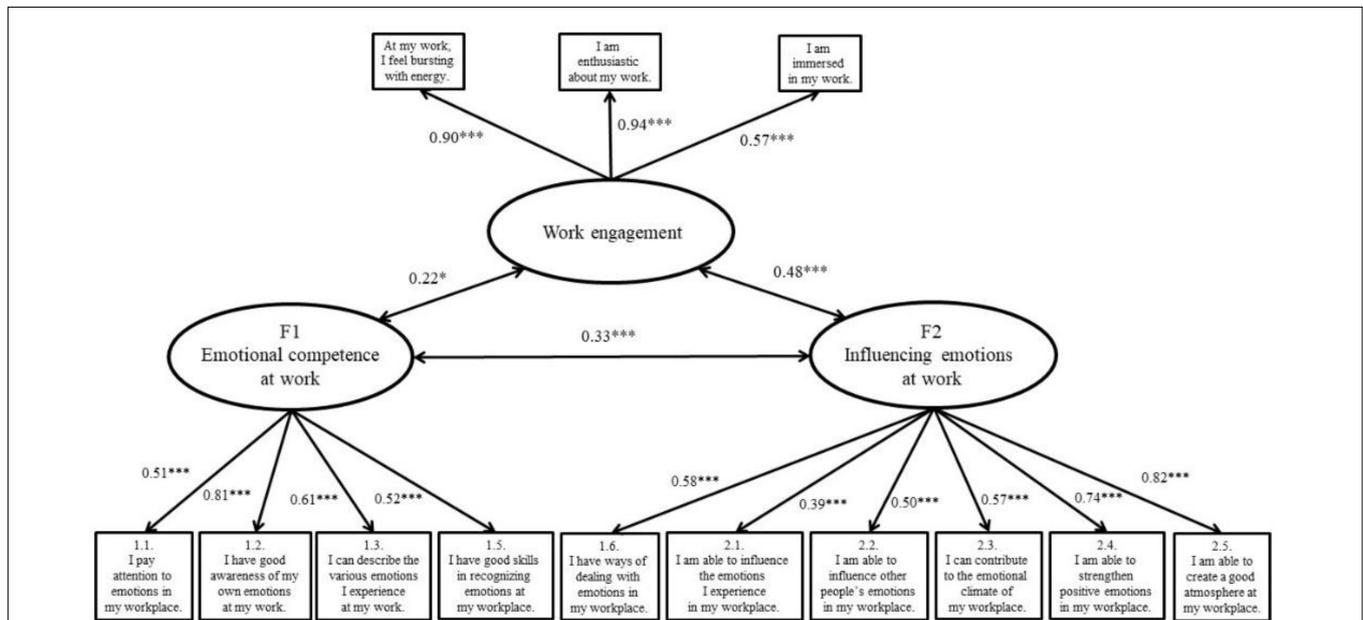
There exist a few validated measures to assess emotional climate at work. However, these are focused on measuring either emotions at the workgroup level (Liu et al., 2014) or on the predominant collective emotions of the majority of the organizations' members (Yurtsever and de Rivera, 2010). In our study, we were interested in finding out about individuals' own perceptions concerning how emotions are taken into account, permitted and expressed at their workplace. Thus, we formulated four items to assess how encouraging individuals perceive their organization to be in terms of emotion and emotion-related behavior by utilizing existing literature and theory (Parke and Seo, 2017). The emphasis was on developing items that would capture constructive aspects of the emotional climate at the organizational level. The items are: (1) "Emotions are taken into account in my workplace," (2) "In my workplace, people are able to discuss emotions in a constructive way," (3) "In my workplace, people are permitted to express different emotions," and (4) "In my workplace, emotions are expressed in a variety of ways." The participants rated the items on a 5-point scale ranging from 1 (*I strongly disagree*) to 5 (*I strongly agree*). The factor structure of the measure is shown in **Figure 1**. McDonald's  $\omega$  reliability for the scale was 0.83.

### Work Engagement

*Work engagement* was assessed with the Ultra-Short Measure for Work Engagement UWES-3 (Schaufeli et al., 2019). The ultra-short version of the measure was chosen to enhance the conciseness and user-friendliness of the questionnaire. The items for measuring the three subscales are: (1) "At my work, I feel bursting with energy" (vigor), (2) "I am enthusiastic about my job" (dedication), and (3) "I am immersed in my work" (absorption). UWES-3 allowed us to use advanced statistical methods applicable to our data size, and to limit the length of the questionnaire. The response options ranged from 0 (*never*) to 6 (*every day*). The validity and reliability (Cronbach's alpha ranging from 0.77 to 0.88) of the UWES-3 measure was confirmed by Schaufeli et al. (2019). In our study, the reliability assessed

**TABLE 2** | Descriptive statistics for the studied variables (N = 240).

Variables	M	SD	Skewness	Kurtosis
<b>Emotional agency (1 = strongly disagree, to 5 = strongly agree)</b>				
<b>Hypothesized Dimension of Emotional Competence at Work</b>				
1.1 I pay attention to emotions in my workplace.	3.93	0.83	-0.72	0.50
1.2 I have good awareness of my own emotions at my work.	4.13	0.73	-0.74	0.81
1.3 I can describe the various emotions I experience at my work.	3.55	0.91	-0.28	-0.15
1.4 At my workplace, I can express how I feel if necessary.	3.76	0.90	-0.75	0.31
1.5 I have good skills in recognizing emotions at my workplace.	3.86	0.77	-0.73	1.14
1.6 I have ways of dealing with emotions in my workplace.	3.55	0.79	-0.52	0.25
1.7 I am able to deal with negative emotions in my workplace.	3.61	0.78	-0.72	0.80
<b>Hypothesized dimension of influencing emotions at work</b>				
2.1 I am able to influence the emotions I experience at my work.	3.80	0.79	-0.59	0.43
2.2 I am able to influence other people's emotions in my workplace.	3.43	0.85	-0.42	0.27
2.3 I can contribute to the emotional climate of my workplace.	4.14	0.79	-1.23	2.95
2.4 I am able to strengthen positive emotions at my workplace.	3.75	0.76	-0.57	1.13
2.5 I am able to create a good atmosphere at my workplace.	3.95	0.77	-0.81	1.74
<b>Emotional Climate at Work (1 = strongly disagree, to 5 = strongly agree)</b>				
3.1 Emotions are taken into account in my workplace.	3.23	0.99	-0.28	-0.40
3.2 In my workplace, people are able to discuss emotions in a constructive way.	2.76	0.99	-0.74	-0.65
3.3 In my workplace, people are permitted to express different emotions.	3.43	0.96	-0.52	-0.03
3.4 In my workplace, emotions are expressed in a variety of ways.	3.27	0.90	-0.31	-0.37
<b>Work Engagement (0 = never, to 6 = every day)</b>				
4.1 At my work, I feel bursting with energy.	5.39	1.35	-1.09	0.81
4.2 I am enthusiastic about my work.	5.61	1.40	-1.10	0.85
4.3 I am immersed in my work.	5.27	1.60	-1.03	0.45



**FIGURE 1** | Dimensions of emotional agency in relation to Work engagement (N = 240). Standardized estimates are presented (\* $p < 0.05$ , \*\*\* $p < 0.001$ ). The numbers before the emotional agency items refer to the original item numbers shown in **Table 1**. Fit statistics:  $\chi^2(53) = 68.32$ ,  $p = 0.08$ ; RMSEA = 0.04 [90% CI = 0.00–0.06], CFI = 0.98, TLI = 0.98; SRMR = 0.04.

via McDonald's  $\omega$  was 0.84. This corresponds to the range of reliability reported by Schaufeli et al. (2019).

In general, in developing the new measure and deciding what constructs to use for validating the structure of the measure of

emotional agency, we carefully considered the possible method biases. In this regard, we focused on considering how to avoid social desirability and reducing item ambiguity as described. In addition, we aimed to improve the scale items by using scales that

have different endpoints and formats (i.e., 5-point and 7-point scales) in order to avoid method biases caused by commonalities in scale endpoints (Podsakoff et al., 2003).

## Data Analysis

We conducted the analyses using Mplus software, version 8.6 (Muthén and Muthén, 1998/2018). Descriptive statistics of the studied variables are shown in **Table 2**. The robust maximum likelihood estimator (MLR) was chosen as a method of estimation since some of the items were slightly skewed. There were no missing values among the analyzed variables. For our first research question, we used data set 1. We examined the factor structure of emotional agency on the basis of 12 items, applying exploratory factor analysis (EFA; Fabrigar and Wegener, 2012; Tabachnik and Fidell, 2013). We chose EFA as the method of analysis because we were developing a new measure and hence had no firm hypotheses concerning either the number of dimensions of emotional agency at work or how the items would reflect these potential dimensions. An oblique geomin rotation was chosen, since it allowed the factors of emotional agency to be correlated. To identify possible factor structures, we relied on several criteria: the eigenvalues-greater-than-one rule of thumb (Kaiser, 1960) in combination with Cattell's (1966) scree plot test, parallel analysis (Horn, 1965) and fit indices (see further on regarding the fit indices for exploratory structural equation modeling, ESEM), plus having an adequate number of items per factor (which should be at least three; see Fabrigar and Wegener, 2012). We also considered the interpretability of the solutions and their consistency with theoretical predictions (Gorsuch, 1983). Moreover, items that cross-loaded (i.e., those with a loading of 0.32 or higher; see Tabachnik and Fidell, 2013) on two or more factors were excluded from the final solution. After deciding on the final factor structure, McDonald's  $\omega$  (McDonald, 1999) was computed for each factor.

Our second research question concerned whether employees in two different work contexts interpreted the measure of emotional agency similarly. Hence, it was necessary to examine whether the structure of emotional agency was invariant across work contexts. For the purposes of the third research question, we examined the convergent and discriminant validity of the measure of emotional agency in relation to *emotional climate at work* and *work engagement*. For both of these examinations, we utilized data sets 1 and 2.

A typical approach to these kinds of research questions has been the use of confirmatory factor analysis (CFA) and structural equation modeling (SEM). However, increasing research evidence shows that instruments assessing multidimensional constructs seldom manage to achieve a reasonable fit, an adequate differentiation of factors or measurement invariance across groups within this traditional framework (e.g., Marsh et al., 2009; for a review, see Marsh et al., 2014). The primary reason for this is that such instruments have had cross-loadings, indicating that some of the items are reflecting not only their respective factor but also one or more other factors. Thus, they are imperfect indicators of a latent construct. Although these cross-loadings have been coherent with the underlying theory, in CFA modeling they are forced to be zero due to

assumptions inherent in CFA. Previous research has shown that if cross-loadings are not estimated, CFA produces overestimated latent factor correlations that might further result in biased estimates in SEM incorporating the CFA measurement model and other variables (e.g., Asparouhov and Muthén, 2009; Marsh et al., 2009).

As all of the aforementioned issues were relevant to our investigations, we decided to use exploratory structural equation modeling (ESEM; Asparouhov and Muthén, 2009; Marsh et al., 2009) instead the CFA/SEM framework, especially since ESEM can overcome these limitations by integrating EFA factors with the analytical possibilities of CFA and SEM in a single framework. Thereby, we could conduct invariance examinations for the EFA measurement model of emotional agency using multigroup analysis, and we were able to compare these competing models through tests of statistical significance and fit indices as well as to include both EFA and CFA factors within the same analysis.

We investigated the measurement invariance of the structure of emotional agency between data sets 1 and 2 via four steps, evaluated successively (Vandenberg and Lance, 2000; Marsh et al., 2009). In the first step, the *configural invariance* (i.e., the equivalence of the model form) was tested by estimating factor loadings, intercepts, and residual variances of the items freely, constraining the latent variances to 1 and the latent means to 0 across the data sets. The second step was to test *weak invariance*. This included the preceding step plus the setting of equal factor loadings across the data sets. The third step included a test of *strong invariance*, within which item intercepts (in addition to the constraints operating in the preceding steps) were constrained to be equal across data sets. The fourth step, *strict invariance*, was tested by also constraining item residual variances so that they would be equal. Finally, *factor variances/covariances* were set as equal in order to test their invariance across the data sets. In each step, the model of the preceding step served as a reference.

We assessed the goodness-of-fit of all estimated models on the basis of the  $\chi^2$ -test, the root mean square error of approximation (RMSEA), the Comparative Fit Index (CFI), the Tucker–Lewis Index (TLI), and standardized root mean square residuals (SRMR). Fit with the data was considered acceptable if the  $p$ -value for the  $\chi^2$ -test was non-significant, if CFI and TLI values were greater than 0.95, if an RMSEA value was less than 0.06, and if an SRMR value was less than 0.08 (Hu and Bentler, 1999). Yet, it is important to note that these cut-offs were established for the traditional CFA/SEM framework, and ESEM scholars (e.g., Marsh et al., 2009, 2010) have suggested that fit indices which include a correction for parsimony (TLI and RMSEA) may be particularly important in ESEM, given that the number of estimated parameters is much larger than in CFA. However, research regarding the adequacy of these criteria for EFA and ESEM is still lacking (Arens and Morin, 2016). Hence, in line with previous ESEM applications (e.g., Marsh et al., 2009, 2010; Arens and Morin, 2016), we used these criteria only as rough guidelines for facilitating the model evaluation and, at the same time, considered the theoretical adequacy of the model for determining the fit of our ESEM models.

We compared the models at each step of the invariance testing process using the scaled  $\chi^2$  difference test

(Satorra and Bentler, 1999). A statistically significant  $\chi^2$  difference test denotes that the reference model (i.e., the preceding invariance step in which the parameters of interest are freely estimated across the two data sets) fits better with the data than the model in which the parameters of interest are set to be equal (i.e., invariant) across the data sets. However, the  $\chi^2$  difference test does not accommodate the effects of model complexity, which means that the reference model will always fit better than the more constrained model. This issue is particularly relevant in our study, since competing invariance models differ greatly in degrees of freedom. Reliance on indices that do not adjust for model complexity may amplify the risk of capitalizing on chance.

This being so, we also inspected changes ( $\Delta$ ) in CFI, TLI, and RMSEA more closely (Marsh et al., 2005; Chen, 2007).  $\Delta$ CFI and  $\Delta$ TLI  $\leq 0.01$ , supplemented by a  $\Delta$ RMSEA  $\leq 0.015$  between a more constrained model and the reference model, would indicate reasonable support for the more constrained model.

Finally, we examined the convergent validity via correlations, but used the Fornell–Larcker method (Fornell and Larcker, 1981) to assess discriminant validity. The Fornell–Larcker method allowed us to compare the shared variance (i.e., the squared correlation) of each of the latent dimensions of emotional agency with either *emotional climate at work* or *work engagement*, comparing each of these against the average variance extracted (AVE) for each of them. The AVE is the average amount of variance that a latent variable accounts for in the observed variables associated with it. It is computed as an average of the squared loadings of the variables that are associated with that particular latent variable. If for each pair of latent variables the shared variance is smaller than their AVEs, then discriminant validity is confirmed.

Prior to the validity examinations, we formed a CFA measurement model for *emotional climate at work* and *work engagement* and then computed their reliabilities via McDonald's  $\omega$  (McDonald, 1999). Moreover, since the design of our study was cross-sectional and the data were collected with self-report measures, it is possible that common method variance would distort the observed associations of the dimensions of emotional agency with *emotional climate at work* and *work engagement* (Podsakoff et al., 2003). Therefore, we assessed the potential effect of common method variance by applying Harman's single-factor test via EFA. The test results showed that the first factor explained 30.69% of the total variance. As this percentage is well below the cut-off criteria of 50% (Podsakoff et al., 2003), we concluded that common method variance is not a substantial concern in our study.

## RESULTS

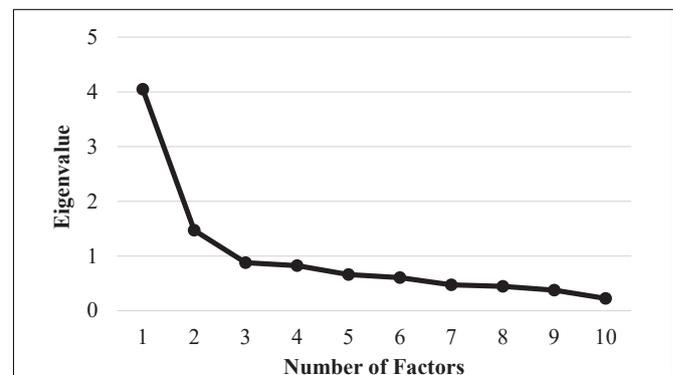
### Research Questions 1: Structure of Emotional Agency

The initial EFA results showed that the criteria for model selection did not agree. The eigenvalues-greater-than-one criterion and parallel analysis favored a 2-factor solution, whereas

Cattell's scree plot test indicated that either one or two factors should be selected since the "elbows" of the plot were located under two and three factors. For its part, the  $\chi^2$ -test favored a 4-factor solution as it was the only solution that gave a statistically non-significant result. Closer inspection of the different factor solutions revealed that in the 4-factor solution there was a factor relating to only one item (item 1.7, see **Table 1**: Loading 1.31), and another factor relating to only two items. Moreover, item 1.7 formed a factor by itself in the 3-factor solution also (the size of the loading being 1.11). Because of this, we omitted item 1.7 and re-estimated the EFA with 11 items.

After re-estimation, the eigenvalues-greater-than-one criterion and parallel analysis still favored a 2-factor solution, while the scree plot test pointed to either one factor or two factors. Once again, the  $\chi^2$ -test favored one more factor than the aforementioned criterion (since only the 3-factor solution gave a statistically non-significant result). However, for the 2-factor solution the  $\chi^2$ -test result came close to non-significance ( $p = 0.02$ ). Closer inspection of the 3-factor solution revealed that the third factor was related to only two items (items 2.2 and 2.3; see **Table 1**). Moreover, there were several items that cross-loaded to two factors, as was found also for the 2-factor solution. In both solutions, items 1.4 and 1.5 cross-loaded. This being so, we omitted item 1.4 and re-estimated the EFA once again with the remaining 10 items.

As occurred previously, the eigenvalues-greater-than-one criterion and parallel analysis favored two factors, and the scree plot test (**Figure 2**) either one or two factors. As regards the  $\chi^2$ -test, we found that only a 3-factor solution gave a statistically non-significant  $\chi^2$ -test result:  $\chi^2(18) = 20.44$ ,  $p = 0.31$ , together with other good fit index values (RMSEA = 0.03 [90% CI = 0.00–0.09], CFI = 0.99, TLI = 0.98). These considerations would indeed have favored the 3-factor solution. However, the fit of the 2-factor solution was also reasonable:  $\chi^2(26) = 40.66$ ,  $p = 0.03$ ; RMSEA = 0.06 [90% CI = 0.02–0.10], CFI = 0.96, TLI = 0.93. Inspection of the factor loadings revealed that in the 3-factor solution, items 1.5 and 2.3–2.5 cross-loaded on two factors. Moreover, item 2.4 formed a third factor on its own. In the 2-factor solution, no cross-loadings or one-item factors



**FIGURE 2** | Scree plot from EFA with maximum likelihood robust estimator and oblique geomin rotation based on dataset 1 ( $n = 138$ ).

were found. All of this led us to choose the 2-factor solution as the final one.

**Table 3** presents the 2-factor structure of emotional agency, and the reliability scores for the factors. Based on these analyses, our initial assumption obtained empirical support and the first factor was ultimately labeled as *Emotional Competence at Work*. It related to the original items 1.1–1.3. Item 1.2 (“I have good awareness of my own emotions at my work”) seemed to reflect the factor most strongly. The second factor was finally labeled *Influencing Emotions at Work*. Items 1.5, 1.6, and 2.1–2.5 loaded on this factor. Thus, the second factor combined the theoretically based dimension of *Influencing Emotions at Work* with two items from the theoretically based dimension of *Emotional Competence at Work* (i.e., item 1.5, “I have good skills in recognizing emotions at my workplace”; and item 1.6, “I have ways of dealing with emotions in my workplace”). Item 2.4 (“I am able to strengthen positive emotions at my workplace”) and item 2.5 (“I am able to create a good atmosphere at my workplace”) seemed to reflect the second dimension most strongly. The correlation between the two factors was fairly low, 0.19.

## Research Questions 2: Invariance of the Structure of Emotional Agency Across Two Professional Domains

Next, we compared the structure of emotional agency obtained from data set 1 with that of data set 2. These data sets represent the contexts of two different professional domains: real estate services and healthcare. Descriptive statistics and the Pearson correlations for the 10 items of emotional agency are presented in **Table 4**.

The initial configurally invariant ESEM model with two factors of emotional agency fit well with the data (**Table 5**, model 1). Model 2, having weak invariance, also fit the data relatively

well, although the  $\chi^2$ -test did not quite reach statistical non-significance. However, the  $\chi^2$ -difference test, and changes in the other fit indices, supported weak invariance. This suggested that the factor loadings could be set as equal across data sets 1 and 2. Thus, the two-dimensional construct of emotional agency represented the same overall construct regarding employees from the two different professional domains.

Support was found also for the strong and strict invariance of emotional agency across data sets 1 and 2, even if the  $\chi^2$ -test for the strict invariance model did not quite reach statistical non-significance (**Table 5**, models 3–4). Hence, the emotional agency items functioned similarly across the two professional domains (the participants of the two domains rated the items similarly). Moreover, there were no substantial differences between the professional domains in regard to the measurement errors of the items. This result makes it possible to use the manifest scores or the factor scores of the dimensions of emotional agency in further analyses.

Finally, we examined whether the factor variances of the emotional agency dimensions, and also the covariance between the dimensions, showed a similarity across the two data sets. Indeed, this level of invariance did receive support (**Table 5**, model 5). Thus, our further analyses regarding convergent and discriminant validity were shown to be warranted.

All in all, a similar two-dimensional structure of emotional agency could be estimated across the two different professional domains. This final structure is presented in the lower part of **Figures 1, 3**. However, a small discrepancy between the initial and final structure was also detected, that is, when we analyzed both data sets jointly, item 1.5 (“I have good skills in recognizing emotions at my workplace”) reflected the first dimension of emotional agency, *Emotional Competence at Work* (see **Figures 1, 3**). By contrast, in the initial structure of emotional agency, based solely on data set 1, the item reflected the second dimension, *Influencing Emotions at Work*

**TABLE 3** | Results of exploratory factor analysis based on data set 1, representing professionals from real estate services ( $n = 138$ ).

Items <sup>a</sup>	Loadings	
	F1 Emotional competence at work	F2 Influencing emotions at work
1.1. I pay attention to emotions in my workplace.	<b>0.361</b>	0.097
1.2. I have good awareness of my own emotions at my work.	<b>0.878</b>	−0.005
1.3. I can describe the various emotions I experience at my work.	<b>0.426</b>	0.250
1.5. I have good skills in recognizing emotions at my workplace.	0.295	<b>0.522</b>
1.6. I have ways of dealing with emotions in my workplace.	−0.077	<b>0.605</b>
2.1. I am able to influence the emotions I experience at my work.	0.217	<b>0.462</b>
2.2. I am able to influence other people's emotions in my workplace.	0.037	<b>0.604</b>
2.3. I can contribute to the emotional climate of my workplace.	0.091	<b>0.662</b>
2.4. I am able to strengthen positive emotions at my workplace.	−0.023	<b>0.799</b>
2.5. I am able to create a good atmosphere at my workplace.	−0.004	<b>0.896</b>
McDonald's $\omega$ reliabilities of the dimensions	0.68	0.82

<sup>a</sup>The number before the item refers to the original item number shown in **Table 2**. A 5-point response scale of the items: 1 = I strongly disagree, to 5 = I strongly agree. The primary loadings are presented in bold.

**TABLE 4 |** Pearson correlations of the 10 items of emotional agency for data sets 1 and 2, representing professionals from real estate services (below the diagonal;  $n = 138$ ) and healthcare (above the diagonal;  $n = 102$ ), respectively.

Items <sup>a</sup>	1.1.	1.2.	1.3.	1.5.	1.6.	2.1.	2.2.	2.3.	2.4.	2.5.
1.1.	–	0.47***	0.45***	0.49***	0.17	0.23*	0.14	0.07	0.28**	0.27**
1.2.	0.33***	–	0.59***	0.55***	0.39***	0.25*	–0.06	0.18	0.31***	0.29**
1.3.	0.21*	0.42***	–	0.54***	0.43***	0.22*	0.04	0.36***	0.51***	0.47***
1.5.	0.25**	0.34***	0.31***	–	0.32**	0.18	0.05	0.22*	0.32**	0.24*
1.6.	0.07	0.27**	0.19*	0.41**	–	0.24*	–0.01	0.38***	0.38***	0.43***
2.1.	0.08	0.03	0.11	0.36***	0.25**	–	0.45***	0.26**	0.28**	0.41***
2.2.	0.13	0.14	0.11	0.42***	0.38***	0.53***	–	0.24*	0.38*	0.41***
2.3.	0.15	0.18*	0.32***	0.36***	0.44***	0.46***	0.40***	–	0.36***	0.47***
2.4.	0.19*	0.11	0.28**	0.45***	0.34***	0.43***	0.41***	0.54***	–	0.62***
2.5.	0.11	0.15	0.31***	0.50***	0.44***	0.49***	0.54***	0.60***	0.74***	–

<sup>a</sup>The number before the item refers to the original item number shown in Table 2.  
\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . A 5-point response scale: 1 = I strongly disagree, to 5 = I strongly agree.

**TABLE 5 |** Fit index values from the multiple group tests of measurement invariance across data sets 1 and 2, representing professionals from real estate services ( $n = 138$ ) and healthcare ( $n = 102$ ), respectively.

Invariance level	$\chi^2$	df	Scaling correction	CFI	TLI	RMSEA (90% CI)	$\chi^2$ difference test
1. None (configural invariance)	62.93	50	1.05	0.98	0.96	0.05 (0.00–0.08)	
2. Loadings (weak invariance)	87.84*	66	1.09	0.97	0.95	0.05 (0.01–0.08)	Model 1 vs. $2\Delta\chi^2(16) = 22.62, p = 0.12$
3. Loadings, intercepts (strong invariance)	96.07	74	1.09	0.97	0.96	0.05 (0.01–0.08)	Model 2 vs. $3\Delta\chi^2(7) = 8.23, p = 0.41$
4. Loadings, intercepts, residual variances and covariance (strict invariance)	114.14*	85	1.12	0.95	0.95	0.05 (0.02–0.08)	Model 3 vs. $4\Delta\chi^2(11) = 17.49, p = 0.09$
5. Loadings, intercepts, residual variances and covariance, factor variances and covariances	113.58	88	1.15	0.96	0.96	0.05 (0.01–0.07)	Model 4 vs. $5\Delta\chi^2(3) = 1.71, p = 0.64$

$\Delta =$  difference. \* $p < 0.05$ .

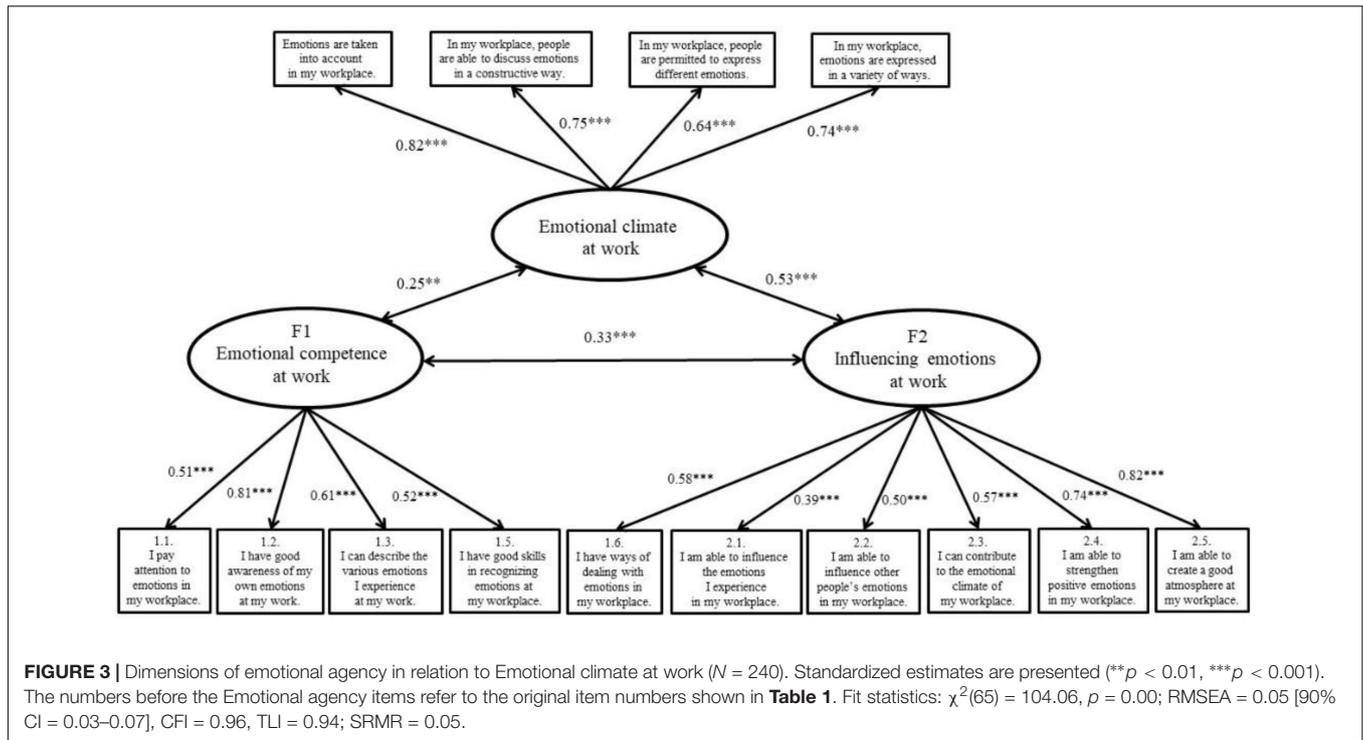
(see Table 3). For the final structure of emotional agency, item 1.5 (“I have good skills in recognizing emotions at my workplace”) was indicated to reflect the dimension of *Emotional Competence at Work*.

### Research Questions 3: Convergent and Discriminant Validity of the Measure of Emotional Agency

Our last aim was to investigate the convergent and discriminant validity of the measure of emotional agency in relation to the *emotional climate at work* and *work engagement*. These investigations were conducted with all of the data (data sets 1 and 2 combined). Prior to the validity investigations, we separately checked the factorial structures of the *emotional climate at work* and *work engagement*. These were found to be acceptable (*emotional climate at work*:  $\chi^2(2) = 0.55, p = 0.76$ ; RMSEA = 0.00 [90% CI = 0.00–0.09], CFI = 1.00, TLI = 1.02; SRMR = 0.01; for *work engagement*, the model was saturated). For both constructs, the factor loadings were relatively high (see Figures 1, 3), and the residual variances of the observed variables were positive (range for *emotional climate* = 0.33–0.61; range for *work engagement* = 0.12–0.68) and statistically significant.

Figures 1, 3, respectively, present the associations of the dimensions of emotional agency with the *emotional climate at work* and *work engagement* (see also Table 6). The dimensions of emotional agency at work were positively associated with the *emotional climate at work* and *work engagement*. Thus, the higher the participants perceived their own emotional competence to be and the more they reported that they were able to influence emotions at their workplace, the better they perceived the emotional climate at work to be and the higher was their work engagement. Furthermore, the results revealed that the *emotional climate at work* and *work engagement* were more strongly related to *Influencing Emotions at Work* than to *Emotional Competence at Work*. Overall, our results demonstrated sufficient convergent validity between the dimensions of emotional agency, the *emotional climate at work*, and *work engagement*.

The results related to discriminant validity examinations are shown in Table 6. The AVE for both dimensions of emotional agency at work was higher than its shared variance with either the *emotional climate at work* or *work engagement*. Thus, our results demonstrate sufficient discriminant validity regarding the measure of emotional agency in relation to the *emotional climate at work*, and *work engagement*.



## DISCUSSION

In this study, our main aim was to examine the concept of emotional agency, which has appeared as a new construct in understanding professional development in workplace contexts. Based on our theoretical understanding of emotional agency, we assumed that it encompasses two potential dimensions, namely *Emotional Competence at Work* and *Influencing Emotions at Work*. Based on our empirical analysis, this assumption of the structure of emotional agency at work obtained empirical support. Of the two dimensions, *Emotional Competence at Work* encompasses individuals' competence to be aware of their personal emotions in their work and the emotions that exist at work more broadly, plus the skill to describe these. *Influencing Emotions at Work* comprises ways of dealing with emotions and

the ability to influence one's own and other people's emotions; it further comprises the ability to strengthen positive emotions and to create a good atmosphere and emotional climate at work. The analysis showed a positive but relatively low correlation between these two dimensions, suggesting that they are related but separate phenomena.

The study was conducted across two different professional domains, namely real estate services and healthcare, and these varied considerably in terms of the nature of the work and background factors such as gender and level of education. The strength of this study is that the structure of emotional agency could be validated, even though the domains under study varied. The analysis also revealed some interesting facts related to a number of particular items in the dimension of *Influencing Emotions at Work*. Two items, 2.4 ("I am able to strengthen positive emotions at my workplace") and 2.5 ("I am able to create a good atmosphere at my workplace") loaded considerably more strongly on the dimension of *Influencing Emotions at Work* than was the case for the other items pertaining to this dimension. Both of these items refer to an individual's ability to influence collectively shared issues in the work community. By contrast, item 2.1 ("I am able to influence the emotions I experience at my workplace") loaded most weakly on this dimension. These results support the behavioral aspect of emotional agency as something people actually *do* with emotions, and in this way, emotions are embedded within actual workplace practices in addition to being individual experiences (Ikävalko et al., 2020).

In testing the convergent and discriminant validity of emotional agency, we utilized the measures of *work engagement* and *emotional climate at work*. The results demonstrated that the dimensions of emotional agency are distinct from, but positively

**TABLE 6 |** Correlations, average variance extracted (AVE), and estimated amount of shared variance between the dimensions of Emotional Agency, Emotional Climate at Work, and Work Engagement (N = 240).

Factors	1	2	3	4
1. Emotional competence at work <sup>a</sup>	<b>0.39</b>	0.11	0.06	0.05
2. Influencing emotions at work <sup>a</sup>	0.33***	<b>0.38</b>	0.28	0.23
3. Emotional climate at work <sup>a</sup>	0.25**	0.53***	<b>0.55</b>	–
4. Work engagement <sup>b</sup>	0.22*	0.48***	–	<b>0.67</b>

Correlations between the factors are below the diagonal, shared variance (i.e., squared factor correlations) are above the diagonal, and AVE estimates are presented on the diagonal (in bold).

\*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001.

<sup>a</sup>A 5-point response scale: 1 = I strongly disagree, to 5 = I strongly agree.

<sup>b</sup>A 7-point response scale: 0 = never, to 6 = every day.

linked to, the *emotional climate at work* and *work engagement*. It is interesting that *Influencing Emotions at Work* was more strongly connected to both the *emotional climate at work* and *work engagement* than was *Emotional Competence at Work*. After all, *work engagement* measures individual aspects, and it seems somewhat counterintuitive that its connection would be stronger with *Influencing Emotions at Work* than with *Emotional Competence at Work* (insofar as the latter, too, can be understood as a more individual phenomenon). However, the results for these dimensions do appear to underline the social nature of emotions as phenomena that are shared and have an influence on everyday practices at work. They also imply that one's (individual) emotional competence and one's concrete emotional actions are both important in building an organization's emotional climate.

Regarding the limitations of our study, it can be argued that the total number of respondents was fairly low for statistical analyses, and for the purpose of developing and validating a measure. However, even with this relatively low number of informants, the statistical analysis confirmed the structure of the construct developed and validated its relation to two closely related constructs (*work engagement* and *emotional climate at work*). In addition, the response rate was high (70%) and the profiles of the participants were equivalent to the domain-specific employee distribution in Finland (Lehto and Sutela, 2014). Thus, one strength of the study is that our sample can be considered to be representative of the professional domains in question. Nonetheless, another limitation lies in the cross-sectional nature of the present study. We were unable to evaluate the equivalence of the structure of emotional agency *over time*, which means that the stability of the emotional agency construct (as understood by the participants) remains unresolved. Nor was it possible to examine the *reciprocal* associations of emotional agency with the *emotional climate at work* and *work engagement* over time. One can speculate that the dimension of *Emotional Competence at Work* is relatively stable (cf., Kim et al., 2009) but that the dimension of *Influencing Emotions at Work* could vary over time and in different work contexts (cf., Parke and Seo, 2017). In addition, this study was conducted in a single national context, Finland, which can be seen as a limitation. The items for emotional agency were modified and studied in Finnish, and thus only Finnish items have so far been validated. This means that, in future, there will be a need to collect data with diverse study designs in different countries and work contexts. In this regard, a longitudinal study design would be of great value in addressing the issue of the invariance of the structure of emotional agency over time.

As interest in emotional agency at work grows, there will be new avenues for research to explore the construct. As with any new construct, there will be calls for follow-up research providing additional measures, plus refinements of the conceptual domain and the validity, bearing in mind that construct and scale development are iterative processes. Among the first steps will be to explore how emotional agency is connected to professional agency. Previous research has explored and validated the multidimensional structure of professional agency as encompassing three different dimensions: *influencing at work*, *developing work practices*, and *negotiating*

*professional identity* (Vähäsantanen et al., 2019). The Professional Agency Measure (PAM) developed in previous research is based on the theoretical assumption of agency as primarily a behavioral phenomenon, relatable to the aim of influencing work practices and enhancing professional identity negotiations within changing social affordances. However, this measure does not cover the aspect of emotion, which, as we have argued, is crucial for participating in organizational practices (e.g., Härtel et al., 2008) and also for shaping and negotiating professional identities (Horrocks and Callahan, 2007). We would expect professional agency and emotional agency to be closely related but separate constructs, and that these, together, constitute a basis for elaborating organizational change as well as the human behaviors involved. In the future, it would also be interesting to test the predictive validity of emotional agency at work within a longitudinal research design. This kind of investigation could reveal, for example, how the two dimensions of emotional agency presented here might predict other work-related phenomena (such as professional agency) over time.

In the field of organizational studies, there are also other agency-related constructs whose relation to emotional agency at work merits examination. For example, research could investigate whether there is a relationship between emotional agency at work and *job crafting* (Petrou et al., 2017) or *innovative work behavior* (Messmann and Mulder, 2012, 2017), both of which have been proven to have a close association with *work engagement*. We would expect these to also have a positive relationship with emotional agency at work. Another interesting path to pursue would be the rapidly developing area of psycho-physiological data designs attributed to real-life circumstances (e.g., Azevedo et al., 2016). In future studies, it would be fruitful to implement research designs combining psycho-physiological data with longitudinal survey data in a range of organizational contexts.

In an era of unforeseeable global and organizational challenges, emotions and agency at work are of crucial importance. The power of emotions is well known in many organizations (e.g., Härtel et al., 2005; Ashkanasy and Dorris, 2017), but how to take that power in to account, understand it, and utilize it within organizational day-to-day life and in further developments is still in its infancy in many organizations. In practical terms, our validated scale for measuring emotional agency at work offers a new instrument for organizations to deepen their awareness of emotional agency and its operations in organizational contexts. The measure gives attention to and supports deliberative actions to develop emotional competence and efforts to influence emotions in a constructive way. We suggest that the idea of emotional agency and the measure for assessing it could be adopted as an integral part of practices aiming to support and develop organizational practices. The tool presented here can help organizations to develop their culture and practices in order to support individuals' wellbeing at work, promoting their work performance and participation in shared practices, and thereby facilitating positive organizational change. The final version of the *E-Ag* instrument—comprising 10 items—offers an easily administrable and universally applicable measure for use in fast-paced organizational contexts.

## DATA AVAILABILITY STATEMENT

The datasets presented in this article are not readily available because consent forms did not include permission to publish the datasets. Requests to access the datasets should be directed to the corresponding author.

## 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.

## REFERENCES

- Agrawal, N., Han, D., and Duhachek, A. (2013). Emotional agency appraisals influence responses to preference inconsistent information. *Organ. Behav. Hum. Decis. Process.* 120, 87–97. doi: 10.1016/j.obhdp.2012.10.001
- Arens, A. K., and Morin, A. J. S. (2016). Examination of the structure and grade-related differentiation of multidimensional self-concept instruments for children using ESEM. *J. Exp. Educ.* 84, 330–355. doi: 10.1080/00220973.2014.999187
- Ashkanasy, N. M., and Dorris, A. D. (2017). Emotions in the workplace. *Annu. Rev. Organ. Psychol. Organ. Behav.* 4, 67–90. doi: 10.1146/annurev-orgpsych-032516-113231
- Ashkanasy, N. M., and Tse, B. (2000). “Transformational leadership as management of emotion: a conceptual review,” in *Emotions in the Workplace: Research, theory, and Practice*, eds N. M. Ashkanasy, H. E. J. Charminé, and W. J. Zerbe (Westport, CT: Quorum books), 221–235.
- Asparouhov, T., and Muthén, B. (2009). Exploratory structural equation modelling. *Struct. Equ. Model.* 16, 397–438. doi: 10.1080/10705510903008204
- Azevedo, R., Taub, M., Mudrick, N., Farnsworth, J., and Martin, S. A. (2016). “Interdisciplinary research methods used to investigate emotions with advanced learning technologies,” in *Methodological Advances in Research on Emotion and Education*, eds M. Zembylas and P. A. Schutz (New York, NY: Springer), 231–243. doi: 10.1007/978-3-319-29049-2\_18
- Bakker, A. B., and Bal, P. M. (2010). Weekly work engagement and performance: a study among starting teachers. *J. Occup. Organ. Psychol.* 83, 189–206. doi: 10.1348/096317909X402596
- Bakker, A. B., Demerouti, E., and Sanz-Vergel, A. I. (2014). Burnout and work engagement: the JD-R approach. *Annu. Rev. Organ. Psychol. Organ. Behav.* 1, 389–411. doi: 10.1146/annurev-orgpsych-031413-091235
- Bandura, A. (1989). Human agency in social cognitive theory. *Am. Psychol.* 44, 1175–1184. doi: 10.1037/0003-066X.44.9.1175
- Barbalet, J. M. (2001). *Emotion, Social Theory, and Social Structure: A Macrosociological Approach*. Cambridge: Cambridge University Press.
- Billett, S. (2011). “Subjectivity, self and personal agency in learning through and for work,” in *SAGE Handbook of Workplace Learning*, eds M. Malloch, L. Cairns, K. Evans, and B. N. O’Connor (London: Sage), 60–72. doi: 10.4135/9781446200940.n5
- Billett, S., and Noble, C. (2017). “Promoting the mediation of individuals’ learning through and for professional practice,” in *Agency at Work: An Agentic Perspective on Professional Learning and Development*, eds M. Goller and S. Paloniemi (Cham: Springer), 205–227. doi: 10.1007/978-3-319-60943-0\_11
- Boler, M., and Zembylas, M. (2016). “Interview with Megan Boler: from feminist politics of emotion to the affective turn,” in *Methodological Advances in Research on Emotion and Education*, eds M. Zembylas and P. Schutz (Berlin: Springer), 17–30. doi: 10.1007/978-3-319-29049-2\_2
- Brasseur, S., Grégoire, J., Bourdu, R., and Mikolajczak, M. (2013). The profile of emotional competence (PEC): development and validation of a self-reported

## AUTHOR CONTRIBUTIONS

PH, HI, SP, KV, and ER contributed to the design of the study. SP and HI organized the database. ER performed the statistical analysis. PH wrote the first draft of the manuscript. PH, ER, KV, and HI wrote sections of the manuscript. All authors contributed to manuscript revision, read, and approved the submitted version.

## FUNDING

We are grateful for the Finnish Work Environment Fund (Grant No. 200364) for funding the study.

- measure that fits dimensions of emotional competence theory. *PLoS One* 8:e62635. doi: 10.1371/journal.pone.0062635
- Brockman, R., Ciarrochi, J., Parker, P., and Kashdan, T. (2017). Emotion regulation strategies in daily life: mindfulness, cognitive reappraisal and emotion suppression. *Cogn. Behav. Ther.* 46, 91–113. doi: 10.1080/16506073.2016.1218926
- Butler, E. A., and Gross, J. J. (2009). Emotion and emotion regulation: integrating individual and social levels of analysis. *Emot. Rev.* 1, 86–87. doi: 10.1177/1754073908099131
- Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate Behav. Res.* 1, 245–276. doi: 10.1207/s15327906mbr0102\_10
- Chen, F. F. (2007). Sensitivity of goodness of Fit indexes to lack of measurement invariance. *Struct. Equ. Model.* 14, 464–504. doi: 10.1080/10705510701301834
- Clarke, N. (2006). Developing emotional intelligence through workplace learning: findings from a case study in healthcare. *Hum. Resour. Dev. Int.* 9, 447–465. doi: 10.1080/13678860601032585
- Collin, K., Lemmetty, S., Herranen, S., Paloniemi, S., Auvinen, T., and Riivari, E. (2017). “Professional agency and creativity in information technology work,” in *Agency at Work: An Agentic Perspective on Professional Learning and Development*, eds M. Goller and S. Paloniemi (Cham: Springer), 249–270. doi: 10.1007/978-3-319-60943-0\_13
- Damsa, C. I., Froehlich, D. E., and Gegenfurtner, A. (2017). “Reflections on empirical and methodological accounts of agency at work,” in *Agency at Work: An Agentic Perspective on Professional Learning and Development*, eds M. Goller and S. Paloniemi (Cham: Springer), 445–464. doi: 10.1007/978-3-319-60943-0\_22
- Demerouti, E., Bakker, A. B., and Gevers, J. M. P. (2015). Job crafting and extra-role behavior: the role of work engagement and flourishing. *J. Vocat. Behav.* 91, 87–96. doi: 10.1016/j.jvb.2015.09.001
- Ekman, P. (2016). What scientists who study emotion agree about. *Perspect. Psychol. Sci.* 11, 31–34. doi: 10.1177/1745691615596992
- English, T., Lee, I. A., John, O. P., and Gross, J. J. (2017). Emotion regulation strategy selection in daily life: the role of social context and goals. *Motiv. Emot.* 41, 230–242. doi: 10.1007/s11031-016-9597-z
- Eteläpelto, A. (2017). “Emerging conceptualisations on professional agency and learning,” in *Agency at Work: An Agentic Perspective on Professional Learning and Development*, eds M. Goller and S. Paloniemi (Cham: Springer), 183–201. doi: 10.1007/978-3-319-60943-0\_10
- Eteläpelto, A., Vähäsantanen, K., Hökkä, P., and Paloniemi, S. (2013). “Identity and agency in professional learning,” in *International Handbook of Research in Professional and Practice-Based Learning*, eds S. Billett, C. Harteis, and H. Gruber (Cham: Springer International Publishing). doi: 10.1007/978-94-017-8902-8\_24
- Eteläpelto, A., Vähäsantanen, K., Hökkä, P., and Paloniemi, S. (2014). What is agency? Conceptualizing professional agency at work. *Educ. Res. Rev.* 10, 45–65. doi: 10.1016/j.edurev.2013.05.001

- Fabrigar, L. R., and Wegener, D. T. (2012). *Exploratory Factor Analysis*. New York, NY: Oxford University Press. doi: 10.1093/acprof:osobl/9780199734177.001.0001
- Fornell, C., and Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *J. Mark. Res.* 18, 39–50. doi: 10.2307/3151312
- Forrier, A., Sels, L., and Stynen, D. (2009). Career mobility at the intersection between agent and structure. A conceptual model. *J. Occup. Organ. Psychol.* 82, 739–759. doi: 10.1348/096317909X470933
- Garrick, A., Mak, A. S., Cathcart, S., Winwood, P. C., Bakker, A. B., and Lushington, K. (2014). Psychosocial safety climate moderating the effects of daily job demands and recovery on fatigue and work engagement. *J. Occup. Organ. Psychol.* 87, 694–714. doi: 10.1111/joop.12069
- Gerbeth, S., Stamouli, E., and Mulder, R. H. (2021). Development of the short scale of the multidimensional emotional competence questionnaire in a German sample. *Sage Open* 2021, 1–15. doi: 10.1177/21582440211009220
- Giddens, A. (1984). *The Constitution of Society: Outline of the Theory of Structuration*. Cambridge: Polity Press.
- Goleman, D. (1998). *Working with Emotional Intelligence*. New York, NY: Bantam Books. doi: 10.1002/ltl.40619981008
- Goller, M. (2017). *Human Agency at Work: An Active Approach Towards Expertise Development*. Cham: Springer. doi: 10.1007/978-3-658-18286-1
- Goller, M., and Harteis, C. (2017). “Human agency at work: towards a clarification and operationalisation of the concept” in *Agency at Work: An Agentic Perspective on Professional Learning and Development*, eds M. Goller and S. Paloniemi (Cham: Springer), 85–104. doi: 10.1007/978-3-319-60943-0\_5
- Goller, M., and Paloniemi, S. (2017). “Agency at work, learning and professional development: an introduction,” in *Agency at Work: An Agentic Perspective on Professional Learning and Development*, eds M. Goller and S. Paloniemi (Cham: Springer), 1–14. doi: 10.1007/978-3-319-60943-0\_1
- Gorsuch, R. L. (1983). *Factor Analysis*, 2nd Edn. New Jersey, NY: Erlbaum.
- Gross, J. J. (1998). Antecedent-and response-focused emotion regulation: divergent consequences for experience, expression, and physiology. *J. Pers. Soc. Psychol.* 74, 224–237. doi: 10.1037/0022-3514.74.1.224
- Gross, J. J. (2015). Emotion regulation: current status and future prospects. *Psychol. Inq.* 26, 1–26. doi: 10.1080/1047840X.2014.940781
- Hager, P., and Beckett, D. (2019). *The Emergence of Complexity. Rethinking Education as a Social Science*. Cham: Springer. doi: 10.1007/978-3-030-31839-0
- Hakanen, J., and Schaufeli, W. B. (2012). Do burnout and work engagement predict depressive symptoms and life satisfaction? A three-wave seven-year prospective study. *J. Affect. Disord.* 141, 415–424. doi: 10.1016/j.jad.2012.02.043
- Hareli, S., Rafaeli, A., and Parkinson, B. (2008). “Emotions as social entities: interpersonal functions and effects of emotion in organizations,” in *Research Companion to Emotion in Organizations*, eds N. M. Ashkanasy and C. L. Cooper (Cheltenham: Edward Elgar), 349–359.
- Harmon-Jones, C., Bastian, B., and Harmon-Jones, E. (2016). The discrete emotions questionnaire: a new tool for measuring state self-reported emotions. *PLoS One* 11:e0159915. doi: 10.1371/journal.pone.0159915
- Härtel, C. E., and Liu, X. Y. (2012). How emotional climate in teams affects workplace effectiveness in individualistic and collectivistic contexts. *J. Manag. Organ.* 18, 573–585. doi: 10.5172/jmo.2012.18.4.573
- Härtel, C. E., Zerbe, W. J., and Ashkanasy, N. M. (2005). *Emotions in Organizational Behavior*. Mahwah, NJ: Lawrence Erlbaum Associates. doi: 10.4324/9781410611895
- Härtel, C. E. J., Gough, H., and Härtel, F. (2008). Work-group emotional climate, emotion management skills, and service attitudes and performance. *Asia Pac. J. Hum. Resour.* 46, 21–37. doi: 10.1177/1038411107086541.
- Hochschild, A. R. (1983). *The Managed Heart: Commercialization of Human Feeling*. Berkeley, CA: University of California Press.
- Hodzic, S., Scharfen, J., Ripoll, P., Holling, H., and Zenasni, F. (2018). How efficient are emotional intelligence trainings: a meta-analysis. *Emot. Rev.* 10, 138–148. doi: 10.1177/1754073917708613
- Hökkä, P., Vähäsantanen, K., and Paloniemi, S. (2020). Emotions in learning at work: a literature review. *Vocat. Learn.* 13, 1–25. doi: 10.1007/s12186-019-09226-z
- Hökkä, P., Vähäsantanen, K., Paloniemi, S., and Eteläpelto, A. (2017). “The reciprocal relationship between emotions and agency in the workplace,” in *Agency at work: An Agentic Perspective on Professional Learning and Development*, eds M. Goller and S. Paloniemi (Cham: Springer), 161–181. doi: 10.1007/978-3-319-60943-0\_9
- Hökkä, P., Vähäsantanen, K., Paloniemi, S., Herranen, S., and Eteläpelto, A. (2019). Emotions in leaders’ enactment of professional agency. *J. Workplace Learn.* 31, 143–165. doi: 10.1108/JWL-07-2018-0086
- Horn, J. L. (1965). A rationale and test for the number of factors in factor analysis. *Psychometrika* 30, 179–185. doi: 10.1007/BF02289447
- Horrocks, A., and Callahan, J. L. (2007). The role of emotion and narrative in the reciprocal construction of identity. *Hum. Resour. Dev. Int.* 9, 69–83. doi: 10.1080/13678860600563382
- Hu, L. T., and Bentler, P. M. (1999). Cutoff criteria for Fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Struct. Equ. Model.* 6, 1–55. doi: 10.1080/1070519990540118
- Hughes, J. (2005). Bringing emotion to work: emotional intelligence, employee resistance and the reinvention of character. *Work Employ. Soc.* 19, 603–625. doi: 10.1177/0950017005055675
- Ikävalko, H., Hökkä, P., Paloniemi, S., and Vähäsantanen, K. (2020). Emotional competence at work. *J. Organ. Change Manag.* 33, 1485–1498. doi: 10.1108/JOCM-01-2020-0024
- Jalili, Y. A., and Salempour, F. (2019). Group organizational citizenship behavior and knowledge sharing: the moderating role of workgroup emotional climate. *VINE J. Inf. Knowl. Manag. Syst.* 50, 117–135. doi: 10.1108/VJIKMS-12-2018-0117
- Jordan, P. J., and Lawrence, S. A. (2009). Emotional intelligence in teams: development and initial validation of the short version of the Workgroup Emotional Intelligence Profile (WEIP-S). *J. Manag. Organ.* 15, 452–469. doi: 10.1017/S1833367200002546
- Kaiser, H. F. (1960). The application of electronic computers to factor analysis. *Educ. Psychol. Meas.* 20, 141–151. doi: 10.1177/001316446002000116
- Kerosuo, H. (2017). “Transformative agency and the development of knotworking in building design,” in *Agency at Work: An Agentic Perspective on Professional Learning and Development*, eds M. Goller and S. Paloniemi (Cham: Springer), 331–349. doi: 10.1007/978-3-319-60943-0\_17
- Kim, T.-Y., Cable, D. M., Kim, S.-P., and Wang, J. (2009). Emotional competence and work performance: the mediating effect of proactivity and the moderating effect of job autonomy. *J. Organ. Behav.* 30, 983–1000. doi: 10.1002/job.610
- Kotsou, I., Nelis, D., Grégoire, J., and Mikolajczak, M. (2011). Emotional plasticity: conditions and effects of improving emotional competence in adulthood. *J. Appl. Psychol.* 96, 827–839. doi: 10.1037/a0023047
- Krone, K. J., and Dougherty, D. S. (2015). Re-claiming an unfinished past: from emotional labor to critical emotional agency. *Electron. J. Commun.* 25, 3–4.
- Laguna, M., Razmus, W., and Żaliński, A. (2017). Dynamic relationships between personal resources and work engagement in entrepreneurs. *J. Occup. Organ. Psychol.* 90, 248–269. doi: 10.1111/joop.12170
- Leavitt, J. (1996). Meaning and feeling in the anthropology of emotions. *Am. Ethnol.* 23, 514–539. doi: 10.1525/ae.1996.23.3.02a00040
- Lehto, A.-M., and Sutela, H. (2014). *Työolojen Muutokset 1977–2013, [Changes in Working Conditions 1977–2013]*. Helsinki: Tilastokeskus.
- Li, J., Ghosh, R., and Nachmias, S. (2020). A special issue on the impact of the COVID-19 pandemic on work, worker, and workplace!? Implications for HRD research and practices in time of crisis. *Hum. Resour. Dev. Int.* 23, 329–332. doi: 10.1080/13678868.2020.1752493
- Liu, X.-Y., Härtel, E. J., and Sun, J. J.-M. (2014). The workgroup emotional climate scale: theoretical development, empirical validation, and relationship with workgroup effectiveness. *Group Organ. Manag.* 39, 626–663. doi: 10.1177/1059601114554453
- Luo, Y. (2005). How does globalization affect corporate governance and accountability? A perspective from MNEs. *J. Int. Manag.* 11, 19–41. doi: 10.1016/j.intman.2004.11.003
- Luria, G. (2019). Climate as a group level phenomenon: theoretical assumptions and methodological considerations. *J. Organ. Behav.* 40, 1055–1066. doi: 10.1002/job.2417
- Marsh, H., Morin, A., Parker, P., and Kaur, G. (2014). Exploratory structural equation modeling: an integration of the best features of exploratory and confirmatory factor analysis. *Annu. Rev. Clin. Psychol.* 10, 85–110. doi: 10.1146/annurev-clinpsy-032813-153700
- Marsh, H. W., Hau, K.-T., and Grayson, D. (2005). *Goodness of Fit Evaluation*, eds A. Maydeu-Olivares and J. McArdle (Hillsdale, NJ: Erlbaum), 275–340.

- Marsh, H. W., Lüdtke, O., Muthén, B., Asparouhov, T., Morin, A. J. S., Trautwein, U., et al. (2010). A new look at the big five factor structure through exploratory structural equation modeling. *Psychol. Assess.* 22, 471–491. doi: 10.1037/a0019227
- Marsh, H. W., Muthén, B., Asparouhov, T., Lüdtke, O., Robitzsch, A., Morin, A. J. S., et al. (2009). Exploratory structural equation modeling, integrating CFA and EFA: application to students' evaluations of university teaching. *Struct. Equ. Model.* 16, 439–476. doi: 10.1080/10705510903008220
- Mayer, J. D., Caruso, D. R., and Salovey, P. (1999). Emotional intelligence meets traditional standards for an intelligence. *Intelligence* 27, 267–298. doi: 10.1016/S0160-2896(99)00016-1
- McDonald, R. P. (1999). *Test theory: A Unified Treatment*. Mahwah, NJ: Lawrence Erlbaum.
- Messmann, G., and Mulder, R. H. (2012). Development of a measurement instrument for innovative work behaviour as a dynamic and context-bound construct. *Hum. Resour. Dev. Int.* 15, 43–59. doi: 10.1080/13678868.2011.646894
- Messmann, G., and Mulder, R. H. (2017). “Proactive employees: the relationship between work-related reflection and innovative work behaviour,” in *Agency at Work: An Agentic Perspective on Professional Learning and Development*, eds M. Goller and S. Paloniemi (Cham: Springer), 141–159. doi: 10.1007/978-3-319-60943-0\_8
- Muthén, L. K., and Muthén, B. (1998/2018). *Mplus user's Guide*, 8th Edn. Los Angeles, CA: Muthén & Muthén.
- Parke, M. R., and Seo, M. G. (2017). The role of affect climate in organizational effectiveness. *Acad. Manag. Rev.* 42, 334–360. doi: 10.5465/amr.2014.0424
- Parker, S. C. (2011). Intrapreneurship or entrepreneurship? *J. Bus. Ventur.* 26, 19–34. doi: 10.1016/j.jbusvent.2009.07.003
- Parkinson, B. (1995). *Ideas and Realities of Emotion*. Abingdon: Routledge.
- Patterson, M., Warr, P., and West, M. (2004). Organizational climate and company productivity: the role of employee affect and employee level. *J. Occup. Organ. Psychol.* 77, 193–216. doi: 10.1348/096317904774202144
- Petrou, P., Bakker, A. B., and van den Heuvel, M. (2017). Weekly job crafting and leisure crafting: implications for meaning-making and work engagement. *J. Occup. Organ. Psychol.* 90, 129–152. doi: 10.1111/joop.12160
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., and Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *J. Appl. Psychol.* 88, 879–903. doi: 10.1037/0021-9010.88.5.879
- Rimé, B. (2009). Emotion elicits the social sharing of emotion: theory and empirical review. *Emot. Rev.* 1, 60–85. doi: 10.1177/1754073908097189
- Russell, J. A. (2003). Core affect and the psychological construction of emotion. *Psychol. Rev.* 110, 145–172. doi: 10.1037/0033-295X.110.1.145
- Satorra, A., and Bentler, P. (1999). *A Scaled Difference Chi-Square Test Statistic for Moment Structure Analysis, Technical Report*. Oakland, CA: University of California. doi: 10.2139/ssrn.199064
- Schaufeli, W. B. (2013). “What is engagement?,” in *Employee Engagement in Theory and Practice*, eds C. Truss, K. Alfes, R. Delbridge, A. Shantz, and E. Soane (London: Routledge), 15–35.
- Schaufeli, W. B., Salanova, M., Contzalez-Roma, V., and Bakker, A. B. (2002). The measurement of engagement and burnout: a two sample confirmatory factor analytic approach. *J. Happiness Stud.* 3, 71–92. doi: 10.1023/A:1015630930326
- Schaufeli, W. B., Shimazu, A., Hakanen, J., Salanova, M., and De Witte, H. (2019). An ultra-short measure for work engagement: the UWES-3 validation across five countries. *Eur. J. Psychol. Assess.* 35, 1–15. doi: 10.1027/1015-5759/a000430
- Schutz, P. A., and DeCuir, J. (2002). Inquiry on emotions in education. *Educ. Psychol.* 37, 125–134. doi: 10.1207/S15326985EP3702\_7
- Smith, R. (2017). “Three aspects of epistemological agency: the socio-personal construction of work-learning,” in *Agency at work: An Agentic Perspective on Professional Learning and Development*, eds M. Goller and S. Paloniemi (Cham: Springer), 67–85. doi: 10.1007/978-3-319-60943-0\_4
- Stephens, J. P., and Carmeli, A. (2016). The positive effect of expressing negative emotions on knowledge creation capability and performance of project teams. *Int. J. Proj. Manag.* 34, 862–873. doi: 10.1016/j.jproman.2016.03.003
- Tabachnick, B. G., and Fidell, L. S. (2013). *Using Multivariate Statistics*, 6th Edn. Boston, MA: Allyn & Bacon.
- Tuominen, T. M., and Lehtonen, M. H. (2018). The emergence of transformative agency in professional work. *Organ. Stud.* 39, 1601–1624. doi: 10.1177/0170840617717093
- Tynjälä, P. (2013). Toward a 3-P model of workplace learning: a literature review. *Vocat. Learn.* 6, 11–36. doi: 10.1007/s12186-012-9091-z
- Ursin, J., Vähäsantanen, K., McAlpine, L., and Hökkä, P. (2020). Emotionally loaded identity and agency in Finnish academic work. *J. Further High. Educ.* 44, 311–325. doi: 10.1080/0309877X.2018.1541971
- Vähäsantanen, K., and Eteläpelto, A. (2015). Professional agency, identity, and emotions while leaving one's work organization. *Prof. Prof.* 5, 1–16. doi: 10.7577/pp.1394
- Vähäsantanen, K., Paloniemi, S., Hökkä, P., and Eteläpelto, A. (2017). Agentic perspective on fostering work-related learning. *Stud. Contin. Educ.* 39, 251–267. doi: 10.1080/0158037X.2017.1310097
- Vähäsantanen, K., Räikkönen, E., Paloniemi, S., and Hökkä, P. (2022). Acting agentially at work: developing a short measure of professional agency 1. *Nord. J. Work. Life Stud.* 12, 49–69. doi: 10.18291/njwls.127869
- Vähäsantanen, K., Räikkönen, E., Paloniemi, S., Hökkä, P., and Eteläpelto, A. (2019). A novel instrument to measure the multidimensional structure of professional agency. *Vocat. Learn.* 12, 267–295. doi: 10.1007/s12186-018-9210-6
- Vaida, S., and Opre, A. (2014). Emotional intelligence versus emotional competence. *J. Psychol. Educ. Res.* 22, 26–33.
- Van Rooy, D. L., and Viswesvaran, C. (2004). Emotional intelligence: a meta-analytic investigation of predictive validity and nomological net. *J. Vocat. Behav.* 65, 71–95. doi: 10.1016/S0001-8791(03)00076-9
- Van Wijn, C., Peeters, M., Schaufeli, W., and van den Hout, M. (2011). Understanding workaholism and work engagement: the role of mood and stop rules. *Career Dev. Int.* 16, 254–270. doi: 10.1108/13620431111140156
- Vandenberg, R. J., and Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: suggestions, practices, and recommendations for organizational research. *Organ. Res. Methods* 3, 4–69. doi: 10.1177/109442810031002
- Wallin, A., Nokelainen, P., and Kira, M. (2022). From thriving developers to stagnant self-doubters: an identity-centered approach to exploring the relationship between digitalization and professional development. *Vocat. Learn.* [Epub ahead of print]. doi: 10.1007/s12186-022-09288-6
- Wang, N., Wilhite, S., and Martino, D. (2016). Understanding the relationship between school leaders' social and emotional competence and their transformational leadership: the importance of self-other agreement. *Educ. Manag. Adm. Leadersh.* 44, 467–490. doi: 10.1177/1741143214558568
- Weenink, D., and Spaargaren, G. (2016). “Emotional agency navigates a world of practices,” in *Practice Theory and Research: Exploring the Dynamics of Social Life*, eds G. Spaargaren, D. Weenink, and M. Lamers (New York, NY: Oxfordshire), 6–100. doi: 10.4324/978131565690
- Wiethe-Körpich, M., Weber, S., Bley, S., and Kreuzer, C. (2017). “Intrapreneurship competence as a manifestation of work agency: a systematic literature review,” in *Agency at Work: An Agentic Perspective on Professional Learning and Development*, eds M. Goller and S. Paloniemi (Cham: Springer), 37–65. doi: 10.1007/978-3-319-60943-0\_3
- Yurtsever, G., and de Rivera, J. (2010). Measuring the emotional climate of an organization. *Percept. Mot. Skills* 110, 501–516. doi: 10.2466/pms.110.2.501-516
- Zembylas, M. (2007). Theory and methodology in researching emotions in education. *Int. J. Res. Method Educ.* 30, 57–72. doi: 10.1080/17437270701207785

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

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

Copyright © 2022 Hökkä, Räikkönen, Ikävalko, Paloniemi and Vähäsantanen. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.