



Authentic leadership and personal and job demands/resources: A person-centered approach and links with work-related subjective well-being

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Abstract

The job demands-resources theory considers an open group of personal and job demands and resources. Thus, it allows us to include personal resources not yet covered (i.e., vigor at work) or less explored (i.e., emotional abilities), as well as personal demands not yet explored (i.e., overcommitment). Additionally, from this theory, it is proposed that leaders may influence employee wellbeing. Therefore, of particular interest is to analyze positive leadership styles, such as authentic leadership (AL). This study addresses three research objectives: 1) to identify profiles of employees from a person-centered approach, combining personal resources (self-perception of emotional abilities, vigor at work and self-efficacy) and personal demands (overcommitment) with job resources and demands; 2) to analyze the relation of the identified profiles with indicators of work-related subjective well-being; and 3) to acknowledge whether the AL style determines the pertaining to a profile probability. A large heterogeneous sample of Spanish employees ($N=968$) responded to a questionnaire. Data were analyzed by adopting a person-centered approach using latent profile analysis. The results revealed five patterns of job and individual characteristics: *Profile 5* (very low personal resources, and low job resources and demands); *Profile 4* (low resources and high demands); *Profile 3* (mid-level personal resources, high job resources and low demands); *Profile 2* (high personal resources, mid-level job resources and high demands); and *Profile 1* (high resources and low demands). Analyses showed that workers differed significantly in well-being depending on their profile membership, with *Profile 1* having the highest well-being. Profiles that yielded the worst outcomes were *Profile 4* and *Profile 5*, especially the latter. Finally, the results indicated that AL increased the probability that a profile would show a high well-being level.

Keywords Authentic leadership · Job demands-resources theory · Latent profile analysis · Subjective well-being

In a broadly globalized economy, increased competitiveness among organizations and the incursion of finance into business

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have resulted in a profound transformation of working environments (Siegrist, 2016). This transformation exposes employees to adverse psychosocial factors (Rigó et al., 2021) due to an increase in work pressure (Eurofound, 2017), ultimately affecting their health and well-being (Wadsworth et al., 2010). Therefore, the study of occupational risk factors (those that increase or reduce the vulnerability of workers to stress-related syndromes and diseases, such as burnout or cardiovascular issues; Bakker & Derks, 2010) holds special significance. Occupational risk factors can be classified into two general categories (Demerouti et al., 2001): job demands (e.g., work-home conflict, emotional demands, and work pressure) and job resources (e.g., autonomy, supervisor support, and feedback). However, employees' mental health does not only amount to stress or related conditions, but also involves positive manifestations (Fredrickson, 2008; Massé et al., 1998) that are responsible, among others, for the employees'

well-being levels (Bakker & Derks, 2010). Theories as the job demands-resources theory (JD-R; Demerouti et al., 2001), the effort-reward imbalance (ERI) model (Siegrist, 1996), or the conservation of resources theory (COR; Hobfoll, 1989), that are proposed to explain the health and well-being of employees, have led to a multitude of empirical studies, most of which focus on a variable-centered approach. The theories and models mentioned include courses of action in which various moderating constructs are involved. From the variable-centered approach the moderating role of some variables has been analyzed, although only partially (see Keller et al., 2017). This assertion about partial analyses is due to the limited inclusion of one or, at most, two moderating variables in the studies (interpreting interactions with further variables would be complex and very demanding at the sample level). This implies not considering all the variables that can potentially interact and affect outcomes such as health or well-being (Lee & Cho, 2020). This problem can be solved using a person-centered approach. This approach allows explaining how the variables proposed in the theoretical models are combined in an intrapersonal way, even establishing how different interactions occur in different groups of employees (Häusser et al., 2010; Wang & Hanges, 2011). However, previous studies do not cover the set of variables included in the models (e.g., not considering personal demands), and yield profiles of employees that do not coincide and are even contradictory in some cases. If we also consider that positive leaders, in general, have been recognized as influential in the well-being of employees (Berger et al., 2019), and that specific leadership styles, such as authentic leadership (AL), have recently shown their indirect impact on employees' wellbeing (Towsen et al., 2020), it would be interesting to know to what extent an AL style would contribute to generating a certain combination of indicators (both job and individual resources, and demands) that would ultimately affect levels of well-being at work.

Our purpose in this study is to analyze how an enriched combination of resource indicators and both personal and job demands results in different employee profiles, and to what extent those profiles relate to antecedents such as perceived leadership style (specifically AL), as well as to outcomes related to well-being at work. To address this objective, we perform a latent profile analysis (LPA) that, in contrast to a variable-centered approach, considers that a group of employees is not homogeneous. Thus, a sample may include different subpopulations in which the variables of interest could differ quantitatively and qualitatively (Morin et al., 2011). From an applied point of view, the identification of different groups of employees (heterogeneous), and acknowledging to what extent they are present in a given organization, could help to know if positive leadership styles are appropriately used, and which results to expect in the employee well-being level (Moeller et al., 2018).

Theoretical background

JD-R theory (Demerouti et al., 2001) is a very useful approach in explaining the mechanisms that condition work-related subjective well-being. The authors propose that job resources (i.e., physical, psychological, social or organizational aspects that enable goals to be achieved at work, reduce work demands and associated psychological and physiological costs, or stimulate personal growth, development and learning), lead to motivational outcomes (Bakker & Demerouti, 2007). Effects are exerted by employing a motivational course of action that is relatively independent (Schaufeli & Taris, 2014) from job demands (i.e., physical, psychological, social or organizational aspects involving sustained physical and/or psychological efforts that are associated with physical and/or physiological costs) to adversely affect the health of employees (Demerouti et al., 2001). Moreover, job demands may “exhaust employees' mental and physical resources and may therefore lead to the depletion of energy (i.e., a state of exhaustion) and to health problems” (Bakker & Demerouti, 2007, p. 313). There is ample empirical evidence about the relationships between job resources and well-being, including several meta-analyses that confirm the effects of these resources at different levels, of different natures and with different time frames (Halbesleben, 2010; Lesener et al., 2020; Nielsen et al., 2017). Job demands and resources, under the effort and reward at work labels, respectively, have also been taken into account in stress models as the ERI model (Siegrist, 1996). A decompensation among these extrinsic factors, highly favoring the first group (efforts), increases the likelihood of suffering from health problems associated with stress. The model also raises potential moderators of both extrinsic (lack of opportunities and high competitiveness) and intrinsic types, (overcommitment, also known as need for control). Overcommitment is a motivational pattern characterized by a strong work ambition, with a high need for control and self-esteem (Hanson et al., 2000; Siegrist, 1996). These moderators contribute to increasing the imbalance between efforts and rewards, mainly by investing continuous efforts at work without being able to “disconnect” from it (Siegrist et al., 2004). One of the limitations of the ERI model is that it starts from a specific proposal of efforts and rewards (Schaufeli & Taris, 2014; Siegrist et al., 2004) (e.g., the demands relate exclusively to economic benefits, esteem and career development, and job security). The JD-R theory, using a broad definition of what demands and resources are, overcomes this limitation and makes it a labile heuristic model in which any variable can potentially become a resource or a demand (Schaufeli & Taris, 2014). Thus, it is possible to include *new* variables as demands or resources, such as those arising from workplace transformations (Hellgren et al., 2008). This flexibility also makes it possible to

include individual variables, as personal resources not yet covered by other proposals. These personal resources refer to the psychological aspects associated with resilient processes and are concerned with the ability to control and act on the environment adaptively manner (Xanthopoulou et al., 2007). In general, it is possible to state that personal resources, with a role similar to that of job resources, are also positively related to work well-being as well as to other positive results (Airila et al., 2014; Mastenbroek et al., 2014). Except for Mayerl et al. (2016), who propose the construct *resources* as a general latent variable that integrates job resources and a group of personal resources of different nature (i.e., social support, self-efficacy, and fitness), the personal resources considered under the JD-R theory are cognitive and related to a resilience function (Airila et al., 2014; Xanthopoulou et al., 2009a, 2009b). This implies that personal resources of a social nature, or even related to personal physical energy, have not been heeded previously, even though all personal resources tend to relate to each other, which could reveal the existence of a common core (Mayerl et al., 2016).

The JD-R theory bases on the COR theory principles (Hobfoll, 1989) in conceiving what resources are and how they act. From the COR theory, people have innate and learned ways of creating, promoting, conserving, and protecting the quality and quantity of their resources, being the processes associated with them that generate stress experiences (resources threatened, lost or unable to replenish) or engagement (resource gain) (Hobfoll et al., 2018). If we consider, based on the most recent reviews of the COR theory (Halbesleben et al., 2014), that any aspect that the person perceives that can help him or her to reach a goal could be considered a resource, then vigor at work (Shirom, 2004) may also be regarded as a personal resource. Vigor at work is a positive type of affect that facilitates behavior aimed at achieving goals (Carver & Scheier, 1990), making it de facto a personal resource resulting from work experiences (Halbesleben et al., 2014). Vigor at work encompasses three components or dimensions: physical strength, emotional energy, and cognitive liveliness (Shirom, 2004, 2011). Feeling vigor at work implies a sense of moderate activation accompanied by the experience of liking or pleasure (Shirom, 2011). Thus, vigor could be viewed as a complete personal resource that includes cognitive aspects, and also covers the social and physical dimensions of the individual.

Another personal resource, not explicitly included in other *stress models* but positively related to workers' well-being, comprises emotional competencies (Schaufeli & Taris, 2014). Emotional intelligence includes several emotional competencies (Mayer et al., 2016) and refers to the ability to perceive and express emotions, take emotions into account when thinking or making decisions, understand emotions, and regulate emotions in oneself and others. This latter ability has been seen as a personal resource related to

higher levels of employee well-being (Buruck et al., 2016). Considering the role of other personal resources, it could be expected that emotional intelligence would make people more sensitive to positive experiences associated with performing work tasks (Day & Carroll, 2004). This would lead them to experience more positive feelings that would be effectively reinvested in their work (Jordan et al., 2002), increasing well-being levels.

Moreover, JD-R theory opens the possibility of including *new* personal demands, deemed to be “the requirements that individuals set for their performance and behavior that force them to invest effort in their work and are therefore associated with physical and psychological costs” (Barbier et al., 2013, p. 751). For example, the negative effects of these personal demands have been analyzed in workaholics (Guglielmi et al., 2012), performance expectations (Barbier et al., 2013), or overcommitment (van Vegchel et al., 2005), among others. Findings suggest that employees are more vulnerable to the negative impacts of job demands or even do not allow them to fully benefit from the positive aspects (Van den Broeck et al., 2013).

In addition to the direct effects on the levels of work-related subjective well-being, and collected by the JD-R theory, job resources and demands also interact with each other, contributing to well-being (Bakker & Demerouti, 2017). Specifically, resource management cushions the negative impact of demands on stress levels or *burnout* (Bakker et al., 2010; Xu & Payne, 2020). Moreover, when sufficient job resources are available, demands can increase experienced levels of engagement (Bakker et al., 2007; Hakanen et al., 2005), but these effects do not always occur (Hu et al., 2011). Furthermore, other variables may intervene in the relationship (Schaufeli & Taris, 2014; Siegrist, 2016). Something similar to JD-R theory proposal occurs with the ERI model. The so-called interaction hypothesis states that employees whose efforts are markedly above rewards and who, simultaneously, present high levels of overcommitment, will have the most damaged health. However, the studies analyzing this interaction are scarce and show contradictory results (van Vegchel et al., 2005).

Thus far, we have discussed the effects under the JD-R theory, and some connections to the ERI model, but this revised empirical evidence is based on a variable-centered approach using interindividual methods that only allow generalizing the results to a population of homogeneous employees (Reitzle, 2013). However, organizations often need to precisely identify differentiated groups of employees (heterogeneous) to offer them individualized feedback and support (Moeller et al., 2018). Furthermore, complex interactions (with three or more moderators) can occur when different demands and job or/and personal resources are combined, and the interpretation of results may be difficult (Lee & Cho, 2020). Moreover, if we add that different both job and personal demands and

resources "overlap" and interact, it would be necessary for an approach that, beyond analyzing cause-relations effects in a unitary way, considers the combination of different predictors (Kahn & Byosiere, 1992).

To solve these problems, an option is to choose a person-centered approach, such as LPA, that is based on intraindividual analyses. From a methodological point of view, compared to traditional nonlatent clustering methods, LPA offers several advantages: a) individuals are classified into clusters based upon membership probabilities estimated directly from the model; b) all types of variables (continuous, categorical etc.) and their combinations can be used; and (c) covariates can be used as antecedents and outcomes of the profiles obtained (Vermunt & Magidson, 2002). These analyses allow obtaining unique combinations of demands, jobs and personal resources that help to understand the differentiated results at the subgroup level, and that are obtained in outcomes, such as well-being at work (Woo et al., 2018). Given that job demands and resources do not act in isolation, but are thought to interact in creating a (un)favorable work environment, there is a broad tradition in determining how they combine, leading to different profiles that affect employee outcomes in unequal ways (Häusser et al., 2010). Since Carayon's (1994) pioneering study, which used cluster analysis as a technique, there have been many proposals from a person-centered approach, but with more sophisticated techniques, such as LPA or factor mixture modeling (Spurk et al., 2020), that analyze combinations of job and personal demands and resources, even if only partially. Studies have focused on job resources (Mäkikangas et al., 2016), job demands (Jenull & Wiedermann, 2013; Mauno & Minkkinen, 2020; Mayerl et al., 2017), or both but without including personal resources (Bíetry & Creusier, 2017; De Spiegelaere et al., 2017; Fan et al., 2019; Gameiro et al., 2020). There is a dearth of studies including personal resources along with job demands and resources (Lee & Cho, 2020; Moeller et al., 2018; Radey & Wilke, 2021), none including personal demands. In a sample of child welfare workers, Radey and Wilke (2021) obtain five distinct profiles (floundering, surviving through supervision, surviving through a role, surviving through support, and thriving). Social support at work is the resource that contributes the most to differentiating profiles, but with little contribution from personal resources (self-esteem, family support, and task-oriented coping skills, if any). Moreover, the authors only relate profile membership with continuity in the position, and not with indicators related to subjective well-being. Meanwhile, Lee and Cho (2020), in a sample of US-aged workers from different sectors, identified four profiles (moderate resources, high resources-low latitude, high resources-high latitude and low personal resources) in which job demands did not help to differentiate between profiles and autonomy levels, but personal resources did (self-esteem, optimism and active coping). These results

disagree with Moeller et al. (2018), who, also with US workers, obtained three profiles (poor jobs, resourceful jobs and rich jobs) in which job demands differentiated to a greater extent than job and personal resources (self-efficacy). Studies neither agree on the relationships established between belonging to a profile and levels of well-being. Personal resources and only certain job resources (peer support and supervisors) ensured the highest levels of well-being in Lee and Cho (2020), whereas the combination of personal (self-efficacy) and job resources ensured the highest levels of engagement in Moeller et al. (2018).

The revision of the literature yields different results, which are not always homogeneous regarding the role that environmental and personal factors play in the development of well-being at work, with even contradictory results in some cases. From a person-centered approach, it is possible to analyze the relations that job and personal factors have with employee well-being levels. Moreover, an analysis of the role of third variables reveals that these relations are not invariant, and that interactions may occur that change their effects on the results. Furthermore, such interactions may not occur in the same way for all employees. Herein lies the person-centered approach most important contribution. This type of analysis offers a more holistic insight into the impact that the work environment and personal factors have on job results, as employees are not a homogeneous population (Urbanaviciute et al., 2021). Moreover, most of the studies analyzing the emergence of profiles are mainly located in the USA, with few cases in northern and central Europe. Thus, it may be of interest to address the extent of this heterogeneity in the Spanish working population. We propose to identify profiles of employees from a person-centered approach, combining job resources and demands, but introducing, along with personal resources previously considered (i.e., self-efficacy), new resources, such as self-perceived emotional abilities and vigor at work. In addition, the introduction of personal demands, such as overcommitment, can contribute to a wider variety of profiles.

Research Question 1 What employee profiles are obtained when personal resources (self-perception of emotional capacities, vigor at work and self-efficacy) and personal demands (over-commitment) are used as indicators?

Previous studies have identified profiles with a diversity of indicators (personal resources, job resources and demands) but have not considered well-being as an outcome (Radey & Wilke, 2021), and have covered only one facet of well-being, such as affective experiences (Moeller et al., 2018), or have examined the impact of profiles on well-being from a purely eudemonic perspective (Lee & Cho, 2020). Well-being, as formulated by Diener (2009), applied to the workplace, implies a high satisfaction with work and frequent positive emotional experiences or, in other words, cognitive evaluations of one's

work and “positive emotions employees experience at work indicative of engagement, happiness, or satisfaction (as an affective experience)” (Bakker & Oerlemans, 2012, p. 180). Thus, the positive forms of work-related subjective well-being proposed by Bakker and Oerlemans (2012), that is, positive affect, work engagement, and job satisfaction cover pleasurable affective experiences from low to high activation. Work engagement is a positive and emotional-motivational state in workers that has been considered an indicator of well-being at work, comprising three dimensions: vigor, dedication and absorption (Schaufeli et al., 2002). The first dimension is different from vigor at work previously explained. This vigor dimension of engagement is characterized by energy levels, but it also includes mental resilience, effort, and persistence at work. Vigor at work and engagement are different constructs making differing contributions to various work results (Cortés-Denia et al., 2021; Wefald et al., 2012).

Research Question 2 Is there any relationship between profiles and work-related subjective well-being indicators?

Furthermore, we expand the nomological network surrounding job demands and resource profiles by identifying unique factors. Specifically, we consider the workers’ perception of AL, a positive leadership style that may better demarcate the profile membership. The influence that leaders exert on work environments can affect the generation of job demands and resources, and ultimately the employee’s well-being (Bakker & Demerouti, 2017). Under the JD-R theory, leadership has been considered a social job resource (Martinez et al., 2020; Schaufeli & Taris, 2014). However, due to the importance that leadership, in general, has demonstrated in working contexts (Lord et al., 2017) and especially in positive leadership styles (Wang et al., 2011), this variable has been analyzed in the revisions about the advances in this theory (Bakker & Demerouti, 2017) as an especial and separate factor from the other job resources due to its capacity to transform the labor context (Fernet et al., 2015). Certainly, positive leaders are characterized by seeking, through exemplary honesty and transparency, to achieve the best results for their followers, which are also AL characteristics (Hoch et al., 2018). AL is defined as the “process that draws from both positive psychological capacities and a highly developed organizational context, which results in both greater self-awareness and self-regulated positive behaviors on the part of leaders and associates, fostering self-development” (Luthans & Avolio, 2003, p. 243). However, AL also includes distinctive features (Avolio & Gardner, 2005). AL relies to a lesser extent on inspirational motivation (the degree to which a leader articulates an appealing vision that inspires and motivates others to perform beyond expectations), and to a higher extent on coherence (that is, they behave based on congruence between values and actions, even if the result is against him/her) and self-consciousness

(implies knowing their strengths and weaknesses; it also involves being aware of their behaviors’ influence on their collaborators and the organizational context) in leaders guiding their followers toward the development of their true selves (Gardner et al., 2005). In fact, the perception of an AL style has similar consequences on employee well-being than the perception of a positive style (Perko et al., 2016) to the extent it can influence both job demands and resources, and personal resources (Wang et al., 2017). For example, a leader asking for an opinion among the employees, and trying to get feedback on decisions he/she has to make, increases confidence and credibility on him/her among employees, who get the perception of a higher level of emotional support or, in other words, increasing part of the job resources perceived by their employees. Furthermore, the levels of personal demands, such as overcommitment, can be affected by the perceived leadership style when the actions of the leader contribute to generating work environments characterized by high levels of competitiveness (Gómez Ortiz, 2010). AL is a pattern of behavior that includes several components and thus, the consistency in their behaviors is highly important. These leaders promote honesty and integrity and discourage unethical behaviors within their organizations (e.g., promoting positive interactions among employees and giving positive messages whilst controlling and confronting for the negative ones, Ribeiro et al., 2019). The personal identification that employees have with their authentic leaders (Avolio et al., 2004), and how the group and organizational interests are reflected in these leaders (Ilies et al., 2005), make AL contribute to reducing competitive work environments, and let the employee experience lower levels of overcommitment.

Research Question 3 Does the AL style determine the profiles’ pertaining probability?

Method

Sample and procedure

Initially, 1029 workers from different sectors and settings completed a cross-sectional paper survey. However, after the elimination of multivariate outliers, as they may affect the estimation of profiles (Vermunt & Magidson, 2002), there remained a final sample of 968 workers, of whom 55.6% were women ($n = 538$). A total of 40.6% worked in different public organizations ($n = 393$) in Spain compared to other options, such as private or mixed organizations (i.e., public with private management) ($n = 575$). The average age of the participants was 40.3 years ($SD = 12.0$; range from 18 to 66), and the average tenure at the organization was 11.4 years ($SD = 11.0$). Regarding the level of the participants’ studies,

43.9% had university studies, 38.8% had secondary education, and 17.1% had primary or no education. To participate, a minimum of 6 months of seniority in the organization was required, a participant had to be under the supervision of a direct leader (self-employed workers were thus excluded), and to have no hierarchical responsibility for other employees. Psychology undergraduate students involved in a research seminar approached employees from different organizations that were previously contacted and consented to for participation. This student recruiting sampling procedure follows the guidelines proposed by Wheeler et al. (2014) for applying this sampling technique. The students were instructed on the procedure and distribution of the survey, following the protocol approved by the Ethics Committee of the first author university (Ref. DIC.20/8.PROY). Informed consent was obtained from all participants.

Measures

Personal resources and demands

Emotional intelligence The Wong and Law Emotional Intelligence Scale (Wong & Law, 2002) is an instrument for assessing emotional intelligence in organizational contexts. It comprises 16 items that are scored on a 7-point Likert scale (from 1 *totally disagree* to 7 *totally agree*), and measures four dimensions: self-emotional appraisal (e.g., “I really understand what I feel”) ($\omega=0.83$), others’ emotional appraisal (e.g., “I am sensitive to the feelings and emotions of others”) ($\omega=0.82$), use of emotions (e.g., “I am a self-motivating person”) ($\omega=0.83$), and regulation of emotions (e.g., “I can always calm down quickly when I am very angry”) ($\omega=0.86$). In our study, the overall composite of emotional intelligence was used in our analyses ($\omega=0.92$).

Vigor at work The Shirom-Melamed Vigor Measure (Shirom, 2004) was used to measure vigor at work. This is a 12-item scale with a 7-point Likert response format (from 1 *almost never* to 7 *almost always*) and comprises three subscales: physical strength (e.g., “I feel energetic”) ($\omega=0.95$), cognitive liveliness (e.g., “I feel I can think rapidly”) ($\omega=0.89$), and emotional energy (e.g., “I feel able to show warmth to others”) ($\omega=0.88$). We used the overall composite of vigor in our analyses ($\omega=0.92$).

Self-efficacy The General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995) is a ten-item self-report scale with a 4-point Likert response format (from 1 *not at all true* to 4 *completely true*) that measures general self-efficacy as a prospective and operative construct. For example, participants have to rate their self-efficacy levels on items such as “It is easy for me to

stick to my aims and accomplish my goals”. This scale explicitly refers to personal agency, that is, the belief that our own actions are responsible for successful outcomes ($\omega=0.86$).

Overcommitment This is a subscale from the Effort-Reward Imbalance questionnaire (ERI, Siegrist et al., 2004). It consists of six items (e.g., “As soon as I get up in the morning I start thinking about work problems”), with a 4-point Likert response format (from 1 *strongly disagree* to 4 *strongly agree*), that evaluates spending excessive effort at work, as evidenced by the respondent’s inability to withdraw from work obligations, and to develop a more distant attitude toward job requirements ($\omega=0.80$).

Job resources and demands

Rewards This is a subscale from the ERI (Siegrist et al., 2004). It includes ten items (e.g., “I experience adequate support in difficult situations”), with a 4-point Likert response format (from 1 *strongly disagree* to 4 *strongly agree*), that refers to financial reward, esteem reward, and reward-related to promotion prospects (career) and job security ($\omega=0.77$).

Effort This is a subscale from the ERI (Siegrist et al., 2004). It consists of five items (e.g., “I have constant time pressure due to a heavy workload”), with a 4-point Likert response format (from 1 *strongly disagree* to 4 *strongly agree*), measuring quantitative load, qualitative load, and increases in total load over time ($\omega=0.71$).

Work-related subjective well-being

Positive affect The Positive and Negative Affect Schedule (PANAS; Watson et al., 1988) includes 20 words describing feelings and emotions to which participants had to respond on a rating scale of 5 Likert points (from 1 *never* to 5 *always*), indicating to what extent they usually feel each expression. The Positive Affect subscale, which reflects the extent to which a person feels enthusiastic, active, alert, energetic, and rewarding participation, was used in this study ($\omega=0.90$).

Job satisfaction The S10/12 Job Satisfaction Questionnaire (Meliá & Peiró, 1989) was used to measure job satisfaction. The response format is a 7-point Likert scale (from 1 = *very dissatisfied* to 7 = *very satisfied*) and measures different aspects of work satisfaction: satisfaction with the environment (e.g., “The physical environment and space at your workplace”), satisfaction with supervision (e.g., “The way your supervisors evaluate your tasks”), and satisfaction with the legal aspects (e.g., “The degree to which your company

complies with the convention, labor regulations and laws”). We used the overall composite of job satisfaction in our analyses ($\omega=0.92$).

Work engagement The 9-item Utrecht Work Engagement Scale (Schaufeli et al., 2006) was included in this study. This scale has a 7-point Likert response format (from 0 *almost never* to 6 *always*) and comprises three dimensions: vigor (e.g., “At my job, I feel strong and vigorous”) ($\omega=0.75$), dedication (e.g., “I am enthusiastic about my job”) ($\omega=0.87$), and absorption (e.g., “I am immersed in my work”) ($\omega=0.78$). In this study, work engagement is considered in general, and thus, it is appropriate to evaluate in a one-dimensional model (Seppälä et al., 2009) ($\omega=0.92$).

Leadership style Authentic leadership The Authentic Leadership Questionnaire (Walumbwa et al., 2008) is a 16-item questionnaire with a 5-point Likert response format (from 0 *highly unlikely* to 4 *highly likely*). It contains four subscales: relational transparency, which refers to the way leaders open to others and show themselves as they are (e.g., “Says exactly what he or she means”) ($\omega=0.87$), internalized moral perspective, which refers to self-regulation of their conduct according to their principles, and not by external pressures (e.g., “Demonstrates beliefs that are consistent with actions”) ($\omega=0.86$), balanced processing of information, which concerns to objectivity and valuing all the information before deciding (e.g., “Solicits views that challenge his or her deeply held positions”) ($\omega=0.88$), and self-awareness, which refers to the knowledge of one’s own strengths and weaknesses (e.g., “Accurately describes how others view his or her capabilities”) ($\omega=0.92$). We used the overall composite of AL in our analyses ($\omega=0.96$).

Analytic approach

We first analyzed the reliability, means and standard deviation, as well as asymmetry and kurtosis indices. Moreover, the factorial structure of the measures was determined (by confirmatory factor analysis, CFA). To test the fit of the measurement models, maximum likelihood with robust standard errors (MLR) was used as an estimation method, as it indicates the tests of multivariate normality and abnormal distribution of the data. Mplus 8.6 software was used for the analyses. Because of the complexity of a global measurement model, CFAs were separately performed for each instrument or scale of measurement associated with a variable included in the study (Portoghese et al., 2020). In addition, based on these measurement models, the score factors that were to be used as indicators for the LPA were obtained (Morin et al., 2020). Regarding the model fit of the CFA, the root mean square error of approximation (RMSEA)

and standardized root mean square residual (SRMR) values ≤ 0.80 are acceptable, and comparative fit index (CFI) values ≥ 0.90 are interpreted as adequate (Hu & Bentler, 1999). Using LPA, we took a profile as a contrast model, and we increased the number of profiles extracted until an improvement in the fit of the model was achieved (Nylund et al., 2007). To avoid local solutions and following the most recent recommendations (Morin et al., 2020; Spurk et al., 2020), we decided to use multiple starting values to help find the global solutions (Asparouhov & Muthén, 2012). We report eight fit statistics: log likelihood, Akaike information criterion (AIC), consistent AIC (CAIC), Bayesian information criterion (BIC), sample size-adjusted BIC (SSA-BIC), Lo-Mendell-Rubin adjusted likelihood ratio test (LMRA), bootstrap likelihood ratio test (BLRT) and entropy. The lowest values for AIC, CAIC, BIC, and SSA-BIC statistics indicate a profile solution with a better fit for the $k+1$ profile option (Morin et al., 2020; Spurk et al., 2020). Because these statistics can be affected when using large samples (Marsh et al., 2009), it is recommended to use an *elbow plot* (Spurk et al., 2020). We also considered LMRA and BLRT to be statistically significant ($p < 0.05$). For entropy, comprising values between 0.00 and 1.00, values close to 1.00 indicate a high accuracy when classifying subjects in the different profiles (Jung & Wickrama, 2008). For the determination of the final number of profiles, we also consider the theoretical significance of the profiles, their heuristic value, and their potential relationships with covariate variables (both outcomes and antecedents) (Morin et al., 2020).

The entire detailed process for the extraction of profiles is the first step within the automatic three-step procedure for LPA (Asparouhov & Muthén, 2014). In the second step, the most likely profile membership was obtained based on the subsequent distribution from the first step. This captures the possible error in profile classification (Morin et al., 2016; Wang & Hanges, 2011).

The last step accounts for the relationships that occur between the optimal solution of profiles and a group of covariate variables (outcomes and antecedents) considering both the probability of belonging to the different profiles and the error rate in the classification. For the outcomes, we use the BCH option (Asparouhov & Muthén, 2021), which allows us to verify whether a profile is statistically and significantly different from other profiles by considering a group of criteria variables related to well-being (positive affect, work engagement, and job satisfaction). The R3STEP command (Asparouhov & Muthén, 2014) is intended for the antecedents. Using multinomial logistic regressions, it is possible to analyze whether the increase in a unit of a variable taken as an antecedent, makes it more or less likely to belong to a certain profile instead of another profile. In this case, the variables taken are the perception of the employees’ supervisors’ AL style plus the covariates considered in other studies, such as gender and tenure (Radey & Wilke,

Table 1 Means, standard deviations, correlations between study variables and internal consistency indices

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Emotional intelligence	5.38	0.77	(0.92)											
2. Vigor	5.43	0.82	0.54**	(0.92)										
3. Self-efficacy	3.22	0.47	0.54**	0.46**	(0.86)									
4. Overcommitment	9.22	2.02	-0.02	-0.11*	-0.08*	(0.80)								
5. Rewards	18.67	2.96	0.02	0.14**	-0.04	0.15**	(0.77)							
6. Efforts	10.94	2.67	0.05	-0.06	0.05	0.35**	-0.05	(0.71)						
7. Positive affect	31.73	6.27	0.48**	0.72**	0.42**	-0.08*	0.14**	0.00	(0.90)					
8. Job satisfaction	5.15	1.14	0.22**	0.37**	0.14**	-0.07*	0.35**	-0.24**	0.34**	(0.92)				
9. Engagement	4.31	1.09	0.39**	0.57**	0.31**	0.01	0.20**	0.03	0.59**	0.40**	(0.92)			
10. Authentic leadership	2.57	0.89	0.17**	0.29**	0.14**	-0.06	0.31**	-0.19**	0.31**	0.68**	0.30**	(0.96)		
11. Gender ^a	-	-	-0.03	-0.04	-0.09**	0.00	-0.05	0.00	-0.07*	-0.04	-0.06	0.02	-	
12. Tenure	11.4	11.0	0.07*	-0.05	0.02	0.10**	0.00	0.15**	-0.16**	-0.12**	0.03	-0.16**	-0.04	-

McDonald’s coefficients are reported in brackets

^a 1 = men and 2 = women

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

2021), making it more or less likely for an employee to belong to a certain profile instead of another profile. Gender and tenure are related to the activity sector and, in turn, the sectors are associated with different working conditions and job quality (Eurofound, 2014). In addition, odds ratios (ORs) are calculated, which facilitate the interpretation of the coefficients obtained. The ORs reflect “the change in likelihood of membership in a target profile versus a comparison profile associated for each unit of increase in the predictor” (Morin et al., 2016, p. 246). For the sake of clarity and to facilitate the interpretation of the results, the comparison between profiles is expressed as “profile X vs. profile Y”. Specifically, profile Y is the reference or comparison profile, and profile X is the target profile. Thus, for example, an OR of 2 indicates that each unit of increase in the antecedent makes an employee 2 times more likely to belong to the target profile versus the comparison profile. Moreover, ORs that fall below 1 (i.e., ORs that correspond to negative coefficients from the R3STEP analysis) suggest that the likelihood of pertaining to the target profile is reduced. For example, an OR of 0.22 indicates that the membership likelihood to the target profile reduces a 80% each of the increases in a unit for the antecedent versus the comparison profile (see Morin et al., 2016 for more details). The R3STEP and BCH commands are separately applied following the automatic three-step procedure (Asparouhov & Muthén, 2014).

Results

As a first step, we tested the fit to the data of different measurement models corresponding to the factorial structure of the measuring instruments used. After the relevant

modifications,¹ the adjustment values achieved were optimal, with CFI values ranging from 0.94 to 1.00, RMSEA values ranging from 0.000 to 0.075, and SRMR values ranging from 0.005 to 0.045. See Table 1 for means, standard deviations, correlations between the study variables, and internal consistency indices.

The results related to the numbering of the profiles are listed in Table 2. Although there are options with lower values for indices such as BIC, a significant LMR statistic ($p < 0.05$), a higher entropy value and the absence of profiles with a very small size (approximately 1%) led us to opt for the five-profile solution that showed the best fit. Similarly, the elbow plot (see Fig. 1) indicated a flattening of the slope in the five-profile solution. Finally, considering the theoretical aspects, the five-profile solution optimally captures the differences in the new variables included in this study (which is not the case with the two-profile solution), and it is a parsimonious solution compared to other options that would statistically fit well (nine profiles).

In Fig. 2, profiles are depicted according to the average scores for each variable in the profile. The profile with the largest number of members (32%) gathers employees with mid-level personal resources (the averages of emotional intelligence, vigor and self-efficacy are 0.00, 0.03, and -0.07, respectively), a high level of reward ($M = 0.21$), and low levels of work effort ($M = -0.38$) and overcommitment ($M = -0.37$). Thus, this profile is characterized by having mid-level personal resources, high job resources and low demands (*Profile 3*). The second-largest membership profile

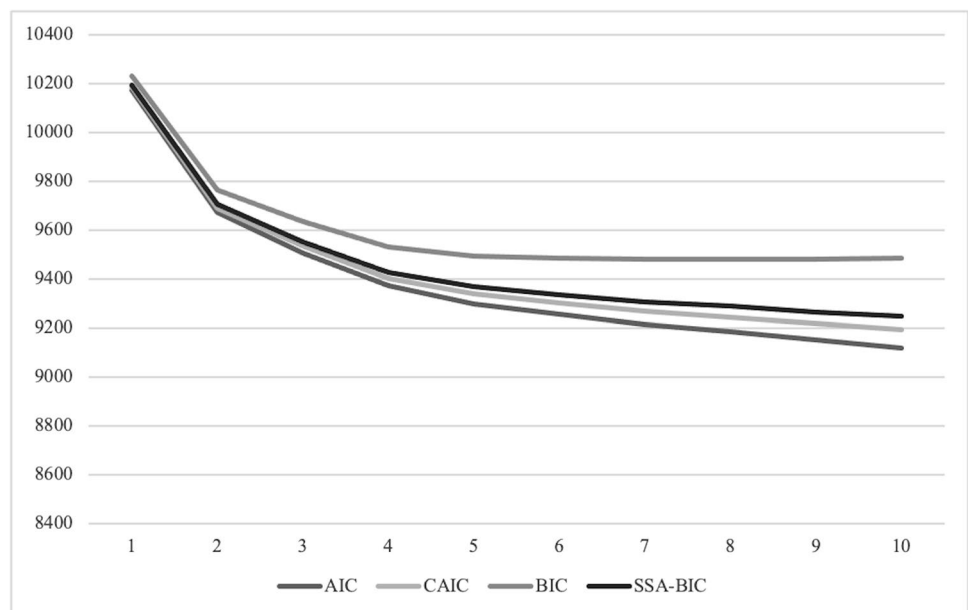
¹ The analyses’ details can be requested from the correspondence author.

Table 2 Latent profile analysis model fit summary

Model	Log likelihood	FP	AIC	CAIC	BIC	SSA-BIC	Entropy	Smallest class (%)	LMRA p value	BLRT p value
1	-5073.63	12	10,171.26	10,183.26	10,229.76	10,191.65	1	968 (100)	-	-
2	-4816.85	19	9671.70	9690.70	9764.33	9703.98	0.64	427 (56)	<0.001	<0.001
3	-4727.78	26	9507.56	9533.56	9634.31	9551.74	0.74	52 (5.4)	0.195	<0.001
4	-4652-13	33	9370.26	9403.26	9531.15	9426.34	0.70	36 (3.7)	0.805	<0.001
5	-4609.38	40	9298.75	9338.75	9493.76	9366.72	0.69	24 (2.5)	0.035	<0.001
6	-4579.92	47	9253.83	9300.83	9482.97	9333.70	0.67	13 (1.3)	0.544	<0.001
7	-4553.79	54	9215.58	9269.58	9478.85	9307.34	0.71	13 (1.3)	0.451	<0.001
8	-4530.58	61	9183.16	9244.16	9480.55	9286.82	0.74	13 (1.3)	0.447	<0.001
9	-4506.72	68	9149.44	9217.44	9480.95	9264.99	0.70	13 (1.3)	0.049	<0.001
10	-4483.98	75	9117.95	9192.95	9483.59	9245.39	0.75	16 (1.4)	0.241	<0.001

$N=958$. FP=free parameters; AIC=Akaike's information criterion; CAIC=consistent AIC; BIC=Bayesian information criterion; SSA-BIC=sample-size adjusted BIC; LMRA=Lo-Mendell-Rubin adjusted likelihood ratio test; BLRT=bootstrap likelihood ratio test

Fig. 1 Elbow plot for AIC, CAIC, BIC and SSA-BIC in determining profile solution. Note. AIC=Akaike's information criterion; CAIC=consistent AIC; BIC=Bayesian information criterion; and SSA-BIC=sample-size adjusted BIC



(31.7%) brings together the employees that are characterized by low levels of personal (the averages of emotional intelligence, vigor and self-efficacy are -0.37, -0.42 and -0.27, respectively) and job resources (reward average is -0.25), and high levels of work effort ($M=0.23$) and overcommitment ($M=0.27$). Thus, this profile is defined by low resources and high demands (*Profile 4*). Our third largest profile (17.0%) includes employees with high levels of emotional intelligence ($M=0.54$), vigor ($M=0.58$), self-efficacy ($M=0.41$) and job reward ($M=0.21$). This group includes employees with a high level of job and personal resources and who are not subjected to high pressures, either because of job demands (average of effort is -0.11) or their personal characteristics (average of overcommitment is -0.40). This profile is marked by high resources and low demands (*Profile 1*). The fourth profile (16.8%) is characterized by

high levels of personal resources (the means of emotional intelligence, vigor and self-efficacy are 0.37, 0.30 and 0.29, respectively), a mid-level of job reward ($M=-0.10$) and high levels of effort ($M=0.39$) and overcommitment ($M=0.58$). Thus, it is featured by high personal resources, mid-level job resources, and high demands (*Profile 2*). Finally, the smallest membership profile (2.5%), is characterized by employees with very low levels in the set of variables analyzed. The means for emotional intelligence, vigor and self-efficacy are -1.70, -1.24, and -0.64, respectively. Job reward yields an average of -0.25, and regarding demands or the pressure level, the average of effort at work is -0.33, and overcommitment is -0.21. Thus, it is marked by very low personal resources, and low job resources (*Profile 5*).

To respond to research question 2, we analyzed whether the profiles differed from each other in terms of work-related

Fig. 2 Latent profiles of workers. *Note:* Profile 1: high resources and low demands; Profile 2: high personal resources, mid-level job resources and high demands; Profile 3: mid-level personal resources, high job resources and low demands; Profile 4: low resources and high demands; Profile 5: very low personal resources, and low job resources and demands

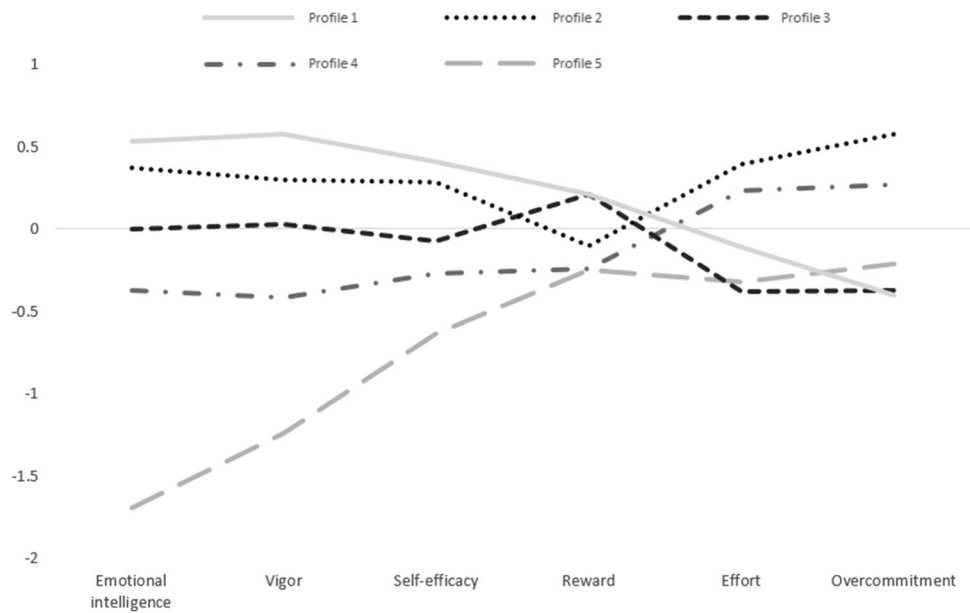


Table 3 Three-step results for distal outcomes (BCH)

Outcome	Profile 1: high resources and low demands (A)	Profile 2: high personal resources, mid-level job resources and high demands (B)	Profile 3: mid-level personal resources, high job resources and low demands (C)	Profile 4: low resources and high demands (D)	Profile 5: very low personal resources, and low job resources and demands (E)	Chi-square (χ^2)
Positive affect	0.635 ^{BCDE}	0.264 ^{ACDE}	-0.050 ^{ABDE}	-0.389 ^{ABCE}	-0.855 ^{ABCD}	362.48***
Engagement	0.484 ^{CDE}	0.216 ^{CDE}	0.047 ^{ABDE}	-0.352 ^{ABCE}	-1.052 ^{ABCD}	180.28***
Job satisfaction	0.256 ^{BDE}	-0.039 ^{ACDE}	0.191 ^{BDE}	-0.277 ^{ABC}	-0.338 ^{ABC}	123.35***

N = 968. The BCH procedure in Mplus uses full information maximum likelihood estimation. The values per outcome are means. The chi-squared value reflects the significance of the omnibus difference test. The pairwise comparisons are highlighted through the superscripts, indicating profiles that are significantly different at least at $p < 0.05$ within each row

*** $p < 0.001$

subjective well-being outcomes (i.e., positive affect, job satisfaction, and work engagement). The results are shown in Table 3. Regarding positive affect, all profiles differed significantly from each other (all significant comparisons at $p < 0.05$). Higher levels of positive affect corresponded to the Profile 1 followed in order by Profile 2, Profile 3, Profile 4 and Profile 5. For work engagement, the Profile 1 and Profile 2 showed the highest levels without significant differences between them, but with significant differences from the previous ones ($p < 0.05$). We also found significant differences in work engagement between the Profile 3, Profile 4 and Profile 5, with Profile 3 showing higher levels than Profile 4 and this, Profile 4, with higher levels than Profile 5, which would show the lowest levels of work engagement among the profiles.

Finally, in terms of possible differences in job satisfaction levels, the highest levels are found in the Profile 1 and Profile 3, without any significant difference between them.

Their level is higher than that for Profile 2 ($p < 0.05$), who yields higher levels of job satisfaction than Profile 4 and Profile 5. These last two profiles, with the lowest job satisfaction levels, do not differ from each other ($p > 0.05$). Therefore, we may conclude that the Profile 1 obtains the best results, whereas Profile 4 and Profile 5 obtain the worst outcomes (especially the latter regarding positive affect and work engagement). The Profile 2 and Profile 3, also yielding positive results, differ in that the former ensures higher positive affect and work engagement and the latter ensures higher job satisfaction.

Finally, research question 3 aimed to determine whether the employees' perception of the AL of their supervisor, along with the employees' gender (value for men = 1 and women = 2) and tenure at the organization covariates, contributed to the determination of the employee's belonging to a certain profile among the five identified. The results are shown in Table 4. As noted in the *Analytic approach*

section, to facilitate the interpretation of the results, we use the expression “profile X vs. profile Y”, with profile Y being the reference or comparison profile and profile X being the target profile. Regarding the covariates, no results were statistically significant for tenure. However, for gender, being a woman reduces in a 45% the probability of belonging to the *Profile 2* compared to the *Profile 4* membership likelihood (OR = 0.55; $p < 0.05$). The differences in the probability of pertaining to a certain profile are mostly related to the employee’s perception, i.e., a higher or lower perception, of an AL style of their supervisor. We find that a leader who is perceived as an AL by his/her employees always fosters the probability of pertaining to a more favorable profile, or reduces the likelihood of belonging to more unfavorable profile, both defined from the point of view of well-being at work. In other words, authentic leaders promote higher levels of positive affect, work engagement, and job satisfaction. Thus, a unit increase in the perception of an AL style reduces an 80%, for the employee, the probability of pertaining to the *Profile 2* compare to the *Profile 1* membership likelihood (OR = 0.20; $p < 0.01$) and reduces approximately a 70% the likelihood of pertaining to the *Profile 3* compared to the *Profile 1* (OR = 0.32; $p < 0.05$). The results of these comparisons indicate that the perception of AL would always increase the probability of belonging to the group of employees with the highest positive affective experiences and, according to the comparison profile, also with the highest levels of engagement and job satisfaction. When comparing the probabilities of belonging to the *Profile 1* with those of belonging to the profiles that enable the worst outcomes in terms of well-being at work (*Profile 4* and *Profile 5*), we find that a unit increase in the perception of an AL style enhances up to 6 times the probability of belonging to the *Profile 1* than to the *Profile 4* (OR = 6.17; $p < 0.001$) and up to 10 times the probability of belonging to the *Profile 1* than to the *Profile 5* (OR = 10.26; $p < 0.001$). The perceived AL style does not determine differences belonging to the *Profile 3* vs. *Profile 2* (OR = 1.59; $p > 0.05$) or the *Profile 2* vs. *Profile 4* (OR = 1.23; $p > 0.05$). However, it does differentiate between the employee belonging to the *Profile 2* vs. *Profile 5* (OR = 2.05; $p < 0.05$). In the latter case, an increase in a unit’s perception of a leadership style increased up to twice the probability of belonging to the *Profile 2*. The perception of an AL style also increases the probability of pertaining to the *Profile 3* vs. that of pertaining to the profiles yielding the worst well-being results (*Profile 4* and *Profile 5*). Specifically, an increase in a unit of perception of an AL style almost doubles the possibility of belonging to the *Profile 3* (OR = 1.96; $p < 0.001$) in the first case, and triples the possibility of belonging to the *Profile 3* (OR = 3.26; $p < 0.001$) in the second case. Finally, if we compare the differences in the probabilities of pertaining to the *Profile 4* vs. *Profile 5* regarding the perception of a leadership style, once again,

Table 4 Three-step results for antecedents (R3STEP)

Comparison		Antecedent		
		Authentic leadership	Gender	Tenure
Profile 3 vs. Profile 2	Coef	0.466	0.271	-0.002
	SE	0.251	0.266	0.001
	OR	1.593	1.312	0.998
Profile 3 vs. Profile 1	Coef	-1.147*	0.052	-0.002
	SE	0.499	0.304	0.001
	OR	0.318	1.053	0.998
Profile 3 vs. Profile 4	Coef	0.673***	-0.324	0.000
	SE	0.180	0.250	0.001
	OR	1.960	0.723	1.000
Profile 3 vs. Profile 5	Coef	1.181***	0.044	0.003
	SE	0.271	0.502	0.004
	OR	3.258	1.045	1.003
Profile 2 vs. Profile 1	Coef	-1.613**	-0.219	0.000
	SE	0.577	0.344	0.001
	OR	0.199	0.803	1.000
Profile 2 vs. Profile 4	Coef	0.207	-0.595*	0.001
	SE	0.241	0.271	0.001
	OR	1.230	0.551	1.001
Profile 2 vs. Profile 5	Coef	0.715*	-0.228	0.005
	SE	0.310	0.514	0.004
	OR	2.045	0.796	1.005
Profile 1 vs. Profile 4	Coef	1.820***	-0.376	0.001
	SE	0.464	0.273	0.001
	OR	6.171	0.687	1.001
Profile 1 vs. Profile 5	Coef	2.328***	-0.008	0.004
	SE	0.527	0.529	0.004
	OR	10.258	0.992	1.004
Profile 4 vs. Profile 5	Coef	0.508*	0.368	0.003
	SE	0.255	0.506	0.004
	OR	1.662	1.444	1.003

Positive coefficient values indicate that higher values on the antecedent make a person more likely to be in the first latent profile of the two being compared; negative values indicate the opposite. Coef. = β estimate from the R3STEP multinomial logistic regression analysis; SE = standard error; OR = odds ratio. Profile 1: high resources and low demands; Profile 2: high personal resources, mid-level job resources and high demands; Profile 3: mid-level personal resources, high job resources and low demands; Profile 4: low resources and high demands; Profile 5: very low personal resources, and low job resources and demands

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

perceiving this AL style favors belonging to an unfavorable profile but is not such a bad situation from the point of view of the outcomes (*Profile 4*). Concretely, if we increase in a unit the perception of an AL style, the probability of belonging to the *Profile 4* vs. *Profile 5* increases 1.7 times (OR = 1.67; $p < 0.05$). In sum, the results indicate that AL increases the probability of belonging to profiles that yield a high work-related subjective well-being level.

Discussion

Since Carayon's (1994) pioneering study, many other researchers have tried to identify homogeneous subgroups of employees resulting from the combination of different indicators and personal and job variables. The JD-R theory (Demerouti et al., 2001) provides a framework to understand the relationships and interactions that occur between the job and personal resources and demands in the explanation of different work outcomes, such as health, performance, or work-related subjective well-being. Studies by Moeller et al. (2018), Radey and Wilke (2021), and Lee and Cho (2020), based on the JD-R theory offer different profiles for personal and job demands and resources. Their proposals are not consistent either in terms of the variables or indicators used for the identification of profiles, or in terms of the outcomes with which the profiles obtained are related. This makes comparability between proposals difficult. In addition, the flexibility offered by the JD-R theory to consider new variables, such as both personal and job demands or resources (Schaufeli & Taris, 2014), encouraged us to study and identify different profiles covering new indicators not included to date. As a novelty, we include resources of different nature, such as the perception of emotional abilities (Mayer et al., 2016) and vigor at work (Shirom, 2004), along with the job demands, job resources and personal resources, such as self-efficacy, that have already been considered in other studies (e.g., Moeller et al., 2018).

Regarding research question 1, a five-profile solution was obtained (Fig. 2). The *Profile 3* is characterized by having mid-level personal resources (emotional intelligence, vigor, and self-efficacy), a high level of reward, and low levels of effort at work and overcommitment. Employees under the *Profile 4* are characterized by scarce resources, are exposed to high levels of effort, and show great overcommitment. The *Profile 1* includes employees with high personal and job resources and an absence of demands (job and personal). High levels of personal resources, mid-level job rewards, effort and overcommitment are characteristics of the *Profile 2*. Finally, employees under the *Profile 5* show low levels of both personal and job demands and resources. The introduction in the model of new resources, such as the self-perception of emotional abilities and vigor at work, has shown their usefulness and, together with self-efficacy,

allows us to obtain differentiated profiles from, for example, very similar levels of job rewards (*Profile 1*, *Profile 3* or *Profile 4* and *Profile 5*). Similarly, personal resources also act differently from job demands on profiles such as *Profile 4*. We assert that the pool of job resources combined with other indicators of the JD-R theory occur in a *homogeneous* way, as well as in the study of Lee and Cho (2020). The introduction of overcommitment (a personal demand) did not differentiate profiles regarding the demands accounted for in the model. However, considering the importance of this type of demand in previous studies (Barbier et al., 2013; Guglielmi et al., 2012; van Vegchel et al., 2005), it would be worth exploring additional personal demands in combination with the other indicators. Another aspect to be considered is the distribution of the sample by profiles. Although stratified sampling was not performed, if the composition of these profiles were extrapolated to the whole working population, we would obtain that the two most beneficial profiles regarding subjective well-being (*Profile 1* and *Profile 2*) jointly represent 33.8% of the total. This suggests that, from the point of view of the adjustment to work, positive interventions on resources and demands, or on predisposing factors such as AL (Meyers et al., 2013) could potentially benefit a large group of the working population.

Regarding research question 2, the obtained profiles related differently to job subjective well-being. Specifically, the *Profile 1* and *Profile 2* obtained the highest levels of well-being. Regarding job satisfaction, the *Profile 2* was related to achieving a higher positive affect and engagement, whereas the *Profile 3* contributed to achieving higher levels of job satisfaction. In contrast, the *Profile 4* and *Profile 5* related negatively to work-related subjective well-being.

Our results are in line with previous studies about the importance of personal resources in the preservation of well-being levels (Lee & Cho, 2020; Moeller et al., 2018). Similar profiles related to the level of demands (both personal and job demands) are favored at the well-being at work level, provided they present moderate or high levels of personal resources. This occurs when comparing *Profile 2* with *Profile 4* and *Profile 1* with *Profile 3*. These results would help in the planning of strategies within the framework of healthy organizations (Acosta et al., 2015), as they would make it possible to identify groups of employees working under the most favorable conditions and with a variety of personal resources, and those who are most at risk and, therefore, need the quickest interventions.

Finally, Research question 3 aimed to determine whether employees' perceptions of their supervisor AL contribute to the probability of pertaining to an identified profile. In most all the cases, from the point of view of work subjective well-being, this style of leadership managed to differentiate between belonging to the most favorable profiles versus belonging to those with the greater risk. Thus, we may conclude that an AL style in supervisors promotes high levels of work subjective well-being, both because of

its direct influence on the working environment in promoting changes in personal and job resources and demands and because of its indirect effects on personal and job resources and demands (Wang et al., 2017). AL manages to increase personal resources (e.g., perceived support) by increasing the levels of subordinates' trust (Niswaty et al., 2021). In addition, maintaining a transparent internal communication structure not only would produce an increase in employees' job resources, but would help face the demands as well (Jiang & Men, 2017). The authentic leaders' strong moral values, loyalty, integrity and authenticity would increase the willingness to work levels, which would also optimize coping with job demands. Finally, due to their reflection of the group and organizational interests (Ilies et al., 2005) and the high identification of followers with such leaders, the work environment would avoid the perception of competition, leading the employee to experience lower levels of overcommitment.

Although the covariate gender was included as a control variable in the regression analyses and not due to the theoretical interest, being a woman makes an employee five times more likely to belong to the *Profile 4* than to the *Profile 2*. A possible explanation could be the *confidence gap* in which men tend to be more confident in their personal resources (Bengtsson et al., 2005), whereas women tend to underestimate their abilities (i.e., emotional intelligence, Lopez-Zafra & Gartzia, 2014).

From a person-centered approach, this study allows us to analyze the influence of enriched profiles (including not previously covered personal resources and demands) on the levels of subjective well-being and to verify the predictive role of AL in these profiles. Furthermore, this study contributes to a better understanding of the variables that condition well-being levels at work in a sample of Spanish employees. This contribution goes beyond the mere description of extremely favorable profiles (high resources but low personal and job demands) or unfavorable profiles (high demands along with low personal and job resources) for well-being. From an applied point of view, the use of methodologies that consider the ratio of resources/demands, as seen in studies focusing on variables approaches (Jenny et al., 2020), would help those responsible for the organization to classify employees in the different obtained profiles. Similarly, in addition to the importance of styles, such as the AL, in the emergence of profiles favorable to well-being, initiatives with a bottom-up design perspective, such as job-crafting, may be enhanced by the organization (Wrzesniewski & Dutton, 2001), thus contributing to increasing resources and reducing demands, or making them more challenging and bold (Oprea et al., 2019).

Limitations and future directions

In terms of limitations, this study used a transversal design through a convenience sample, preventing the generalization of the results. However, conducting LPA improved and

enriched the results. A clear limitation is the use of self-report measures based on the subjective assessments of the participants. Despite the inclusion of some procedural strategies (use of different scale points and anchor labels, the inclusion of inverted coded articles, administration to participants of a good research information sheet and set of instructions...) that contribute to reducing common method bias (Jordan & Troth, 2019), we are aware of possible artificial inflation of relations. Thus, for future studies, work-related well-being could be analyzed from an objective approach with behavioral and physiological measures (i.e., wearable sensors) (Wijngaards et al., 2021). Another limitation stems from the sample. Our employee population was heterogeneous, and no information was collected about organizational characteristics that could be relevant to their role in well-being (organization size, organizational culture, etc.). On the other hand, adjusting to a rule of thumb to reject profiles that include less than 1% of the total sample size or fewer than 25 cases (Lubke & Neale, 2006), we should have considered the *Profile 5* as spurious. However, authors such as Spurk et al., (2020) suggest that the preferred rule of thumb is to consider the percentage of the overall sample size. Additionally, because the smallest profile included 24 cases, we decided to maintain this profile. However, the greatest drawback of this study is the stability of the identified profiles. It would be necessary to analyze the generalization of these profiles both in time, using methodological options such as latent transition analysis, and in specific and varied samples of employees (Nylund-Gibson et al., 2014). An additional issue is that, although from the analyses carried out it is possible to think that AL exerts an "indirect effect" on the levels of well-being at work, to make this kind of assertion a more complex analytical approach is needed, similar to those proposed by McLarnon and O'Neill (2018) that raise, among others, mediations in mixture models. Finally, other variables could influence leadership (e.g., organizational culture, Schein, 1985) in a mutual influence analysis in future designs. In future studies, gender or job contexts could also be included as a predictor in different job contexts.

Conclusion

In this study, we adopted a person-centered approach as it enables us to obtain sub-groups of employees based on their indicators of, both job demands and resources, and personal demands and resources. The results revealed the existence of five different profiles. Membership to a certain profile predicts levels of work-related subjective well-being (i.e., work engagement, job satisfaction and happiness at work or positive affect). Specifically, the profiles with the most favorable results were the *Profile 1* and *Profile 2*. However, when considering the indicators of work-related subjective

well-being separately, *Profile 3* achieved, for example, higher levels of job satisfaction than *Profile 2*. The *Profile 4* and *Profile 5* obtained the worst results in work-related subjective well-being. Furthermore, results show that the perception of an AL style increased the pertaining probability to profiles associated with better levels of well-being. Our research provides insights to better understand, from the JD-R theory, how different resources and demands, both job and personal, are combined and interacted at the individual level. This approach helps to explain the levels of work-related subjective well-being, and how positive leadership styles, such as the AL, can influence this combination.

Authors' contributions Manuel Pulido-Martos: Conceptualization, Methodology, Software, Data curation, Formal analysis, Writing-Original draft preparation, Project administration.

Daniel Cortés-Denia: Resources, Visualization, Investigation, Validation.

Octavio Luque-Reca: Resources, Visualization, Investigation, Validation.

Esther Lopez-Zafra: Funding acquisition, Resources, Supervision, Writing- Reviewing and Editing.

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Availability of data and material (data transparency) The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declarations

Conflicts of interest/Competing interests All authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

Ethics approval Ethics Committee of the University of Jaén (Ref. DIC.20/8.PRY).

Consent to participate Informed consent was obtained from all individual participants included in the study.

Consent for publication All authors whose names appear on the submission approved the version to be published.

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