

EXTROVERT MEANS ENGAGED? THE ROLE OF TEAM COHESION AND EMOTION IN THE MOTIVATIONAL PROCESS

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Securing high-quality outcomes in educational settings necessitates an in-depth investigation of the antecedents of work engagement, a critical driver of excellence in these essential environments. Drawing on a sample of 551 Italian teachers ($M_{\text{age}} = 47.61$, $SD = 10.29$; 67.9% female), this study delves into the mechanisms through which extroversion, a key personality trait, significantly enhances work engagement. Results from multilevel structural equation modeling indicate that the effect of extroversion on engagement is mediated by both individual-level and team-level resources. Specifically, personal resources, such as positive emotions, along with team resources, such as cohesion, were found to play a crucial mediating role. The findings not only reinforce the Job Demands-Resources (JD-R) theory's relevance in educational settings but also offer practical insights for school administrators, helping them leverage these dynamics to foster more engaging and supportive work environments, ultimately enhancing teacher well-being and effectiveness.

Keywords: Engagement; Extroversion; Team cohesion; Emotions; JD-R theory.

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In the evolving landscape of work psychology, the study of work engagement has garnered unprecedented attention, recognized widely for its transformative impact on enhancing occupational health and productivity. Defined as a positive and fulfilling psychological state directly linked to one's work activities (Schaufeli & Bakker, 2010), work engagement stands at the forefront of research for its critical connection to workers' health and overall well-being. Notably, work engagement is intricately tied to enhanced psychological health, showcasing notably lower levels of stress, anxiety, depression, fatigue, and psychological tension (Cortés-Denia et al., 2023). Moreover, engagement transcends its immediate benefits, extending to encompass increased job satisfaction (Chan et al., 2020), particularly among individuals who perceive great personal resources, and is deemed instrumental in propelling job performance to new heights (Yandi & Havidz, 2022). Consistently, the exploration of engagement antecedents has, over the years, unveiled its complex interrelations with individual-level variables, such as personality traits, attitudes toward work, emotional states, and the dynamics of social interactions (Kossyva et al., 2023). Amidst personal factors, the Big Five personality traits, with extroversion at the helm, have been identified as significantly correlating with work engagement (Fukuzaki & Iwata, 2021;

Prieto-Díez et al., 2022). The study of engagement has been pivotal across various occupational sectors and job profiles. However, researchers have devoted considerable effort to deepening our understanding of both personal and situational factors that foster positive work experiences among teachers (e.g., Perera et al., 2018; Zee & Koomen, 2016). Indeed, nurturing teachers' engagement can lead to significant improvements for students, including enhanced achievement (Wang, 2022), school and academic commitment (Zhang & Yang, 2021), and student's positive affection (Vujčić et al., 2022). From an organizational perspective, encouraging teacher engagement also motivates teachers to engage in actions that support the smooth functioning of the school (e.g., Choochom, 2016) and it can help reduce teachers' intentions to leave their jobs (e.g., Mérida-López et al., 2020). Consistent with the motivational processes described by the Job Demands-Resources (JD-R) theory, this study aims to deepen our understanding of the mechanisms through which extroversion influences work engagement among teachers by exploring the mediating roles of team cohesion, as a pivotal job resource, and positive emotions, serving as a critical personal resource.

THE ROLE OF RESOURCES IN THE MOTIVATIONAL PROCESS LEADING TO WORK ENGAGEMENT

The Job Demands-Resources (JD-R) theory (Bakker et al., 2014; Demerouti et al., 2001) is one of the most widely used models for describing the dynamics that influence work well-being. In this model, work engagement is defined as a positive fulfilling and work-related state resulting from the combination of three interrelated dimensions, namely vigor, dedication, and absorption (Schaufeli & Bakker, 2010). Vigor refers to high levels of energy and resilience; dedication refers to experiencing a state of meaning, pride, and challenge; and finally, absorption reflects the workers' condition of being completely immersed in their tasks, making it difficult for them to perceive the passage of time and divert their attention from work.

Work engagement yields significant benefits for both individuals and organizations, as evidenced by a wealth of research findings. For instance, engagement is linked to improved mental and physical well-being, including reduced depression levels (Hakanen & Schaufeli, 2012) and lower anxiety rates (Innstrand et al., 2012), enhanced quality of sleep (Barber et al., 2013), and diminished psychological distress (Schaufeli et al., 2008). Moreover, research indicates that engagement at work also positively affects organizational performance. This includes associations with reduced frequency of sickness absence (Schaufeli et al., 2009), diminished risk of prolonged sickness absence (Rongen et al., 2014), improved self-assessed job performance (Rich et al., 2010), task and contextual performance improvements (Christian et al., 2011), increased innovativeness (Hakanen et al., 2008), enhanced proactivity (Salanova & Schaufeli, 2008), and boosted creativity (Demerouti et al., 2015).

Currently, the JD-R theory is recognized as the preeminent paradigm in occupational psychology for elucidating and investigating the nomological network of engagement. According to the JD-R theory, employee well-being is influenced by workplace characteristics, which are broadly divided into two categories: job demands, referring to tasks that require sustained effort and thus are linked to physical and psychological burdens; and job resources, which are aspects of a job that help employees deal with these demanding tasks and encourage their personal growth and development (Bakker & Demerouti, 2007). The theory outlines two distinct processes. The health impairment process suggests that continuous exposure to high job demands, particularly when paired with inadequate job resources, can lead to burnout, potentially causing long-term negative effects on an employee's health and performance. On the other hand, the JD-R theory's motivational process posits that a sufficient provision of job resources can boost employees' engagement levels, leading to beneficial outcomes such as improved job performance and fostering

positive attitudes like organizational commitment (Taris, 2017). A subsequent revision of the model also incorporated personal resources in addition to job resources, defining them as “positive self-evaluations that are linked to resiliency and refer to individuals’ sense of their ability to control and impact upon their environment successfully” (Xanthopoulou et al., 2009, p. 236).

Thus, beyond situational attributes of work environment, the JD-R theory acknowledges the crucial impact of personal-level factors on both the health impairment and motivational processes (Bakker et al., 2023). With respect to the motivational process, the JD-R theory identifies personal resources as instrumental in achieving goals, protect against risks from physiological and psychological costs, and ultimately promote personal growth (Xanthopoulou et al., 2007). A recent meta-analysis within the JD-R framework focused on the antecedents, correlates, and outcomes of work engagement, indicated that among the antecedents, personal and developmental resources exert a more substantial influence compared to social resources and work resources (Mazzetti et al., 2023). Specifically, stable personal resources such as personality traits appear to be stronger antecedents of work engagement.

The current study is aimed to explore the role of (personal and work) resources using the JD-R theory, as its inherent versatility and specificity ensures that the model remains capable of explicating the nuances affecting outcomes across different professions, adapting as the specific demands and resources characteristic of distinct work environments evolve (Schaufeli, 2017). Consistently, an extensive body of literature supports the suitability of the model for investigating the occupational well-being and engagement of teachers (Dicke et al., 2018). Recent investigations employing the JD-R theory to explore the influence of demands and resources on teacher well-being have demonstrated that resources can significantly enhance levels of work engagement, in contrast to the negative impact observed from demands (Castro Silva et al., 2024). Notably, autonomy and peer support stand out as pivotal mediators in modulating the relationship between work demands and teacher well-being.

In their latest reconceptualization of the model, Bakker and colleagues (2023) introduce four important findings from the past decade. Among them, the person \times situation approach and the multilevel JD-R theory. The person \times situation approach is based on the Big Five model of personality traits, and it appears that these traits significantly influence the perception and evaluation of job demands and resources, resulting in direct and indirect effects on work well-being. Therefore, personality traits could moderate the impact of demands and resources on worker well-being. The multilevel approach emphasizes how resources (in the current study, team cohesion) exists within the broader context of school norms. Proactive approaches, on the other hand, highlight the continuous effort of workers to actively seek resources to cope with work demands.

The present study investigates work engagement among Italian teachers from the person \times situation perspective, by exploring the relationship between extroversion and work engagement. Additionally, in line with the multilevel perspective, team cohesion and positive emotions were analyzed as mediators of the relationship.

THE ANTECEDENTS OF WORK ENGAGEMENT: THE ROLE OF PERSONAL AND JOB RESOURCES

The inclusion of personal resources, alongside work resources, enhances the explanatory power of the JD-R theory for several reasons (Taris & Schaufeli, 2016). First, personal resources, akin to job resources and demands, can act as antecedents to both strain and motivation. Second, the intrinsic characteristics of such resources position them as potential moderators in the dynamics between job demands/resources and their outcomes. A third rationale is that personal resources could act as mediators

in the relationship between job characteristics and their consequences. Furthermore, they can act as catalysts for the perception of job resources (Bakker & Demerouti, 2017, 2018). According to this perspective, the study of work engagement's antecedents and correlates has to be focused on both personal and job resources.

Over the last decades, the spotlight in academic research has shifted toward uncovering the factors that drive work engagement across different professions, with a burgeoning interest on teachers. Actually, teaching is one of the professions that has traditionally been considered challenging to the individual, both because of the cognitive and emotional demands involved and because of the constant social changes that teachers have to deal with (Kariou et al., 2021). Studying expectations with respect to the work and role of the teacher in the Finnish context, Juvonen and Toom (2023) report that teachers' expectation of self-actualization is only partial and is influenced by society's expectations, which are both explicit and related to teaching, and implicit, affecting teachers' behavior. Such dynamics have an impact in defining the emotional and work excess load and in influencing their well-being.

Consistent with the person-situation hypothesis embedded within the JD-R framework, several studies have explored the relation between personality dimensions, as delineated by the Big Five model, and work engagement. Notably, research has demonstrated that individuals predisposed to regularly experiencing high levels of work engagement are typically characterized by prominent levels of extroversion (Inceoglu & Warr, 2011; Langelaan et al., 2006; Pérez-Fuentes et al., 2019). In particular, extroversion is associated with an increased propensity for experiencing positive psychological states at work, which is believed to be a foundational factor in its positive association with engagement (Zecca et al., 2015). Extrovert individuals tend to be more engaged in their work due to their sociability and preference for external stimulation. This aligns well with collaborative and dynamic work environments. Their assertiveness and valuable communication skills not only enable them to tackle challenges proactively, but also to maintain positive relationships (e.g., in the workplace), further enhancing their engagement and job satisfaction (Rhee et al., 2013).

Studies focused on the relationship between extroversion and work engagement among teachers report mixed results, emphasizing both the role of extroversion as a predictor on work engagement (Janssens et al., 2019; Paulik, 2020) and the nonexistence of the relationship between these variables (Li et al., 2021). Despite extensive research on the relationship between personality traits and work engagement further research should delve into the mediating role that work resources, such as social cohesion, and personal resources, such as emotion contagion, may play.

In a recent study Bakker (2022) systematized the psychosocial processes involved in work engagement, identifying team cohesion—quoting a definition by Carron (1982, p. 124)—as a key antecedent “dynamic process that is reflected in the tendency for a group to stick together and remain united in the pursuit of its instrumental objectives and/or for the satisfaction of member affective needs. Team cohesion is defined as the force that drives members to work together and contributes to greater cohesion and collaboration among workers would influence the contagion of positive emotions..

Research into group dynamics, consistently identifies cohesion as a crucial characteristic of highly functional groups (Evans & Dion, 2012; Rosh et al., 2012). This quality is known to confer numerous benefits to organizations, teams, and individual members, significantly enhancing motivation, satisfaction, and overall well-being (e.g., Mathieu et al., 2015; Walsh et al., 2010). On the social and group dynamics front, the significance of team cohesion cannot be overstated, where membership in a highly cohesive workgroup markedly enhances member well-being (e.g., Reizer et al., 2023). These findings affirm the substantial role that cohesion plays in the effectiveness and health of work groups.

Yet, research examining the link between team cohesion and work engagement among teachers has yielded inconclusive outcomes. Bakker and Bal (2010), in their investigation of teachers' weekly work engagement, found no significant correlation with colleague relationships. Conversely, Shaw (2019) discovered that schools with high levels of teacher team cohesion experienced greater achievement of goals and success. Fuller et al. (2016) further supported this, suggesting that social cohesion within schools is closely associated with teacher effectiveness. While direct studies connecting team cohesion to work engagement in teachers remain limited, evidence from various sources, including Skaalvik and Skaalvik (2018), indicates that social and group dynamics, such as relationships with colleagues, serve as significant job resources that can enhance teachers' work engagement and well-being. Moreover, Nwoko et al. (2023) highlighted teacher collaboration as a key component in bolstering work well-being, emphasizing its role in fostering a conducive work environment.

Team cohesion leads group members to engage more in relational exchange with others, and this increases the sharing of positive emotions, strengthening the person-group bond (Lawler et al., 2000). Belonging to and working in cohesive groups in which members are able to collaborate in achieving goals allows them to experience more of a state of emotional well-being and increases the circularity of positive emotions (Peñalver et al., 2019).

The sphere of emotions, too, plays a crucial role, with positive emotions known to amplify work engagement levels (Diener et al., 2020). Additional research has shown that teachers who are more engaged in their work not only experience more positive emotions than negative ones but also sustain these feelings over time, which in turn enhances their levels of self-efficacy, joy, love, and happiness, while reducing feelings of despair, anger, and fatigue (Burić & Macuka, 2018).

Consistent with previous research, the present study aims to investigate the relationship between extroversion, as a personality trait, and work engagement, as an outcome of the motivational process, as described by the JD-R theory, considering team cohesion and positive emotions as mediators of the relationship, in a sample of Italian teachers (Figure 1).

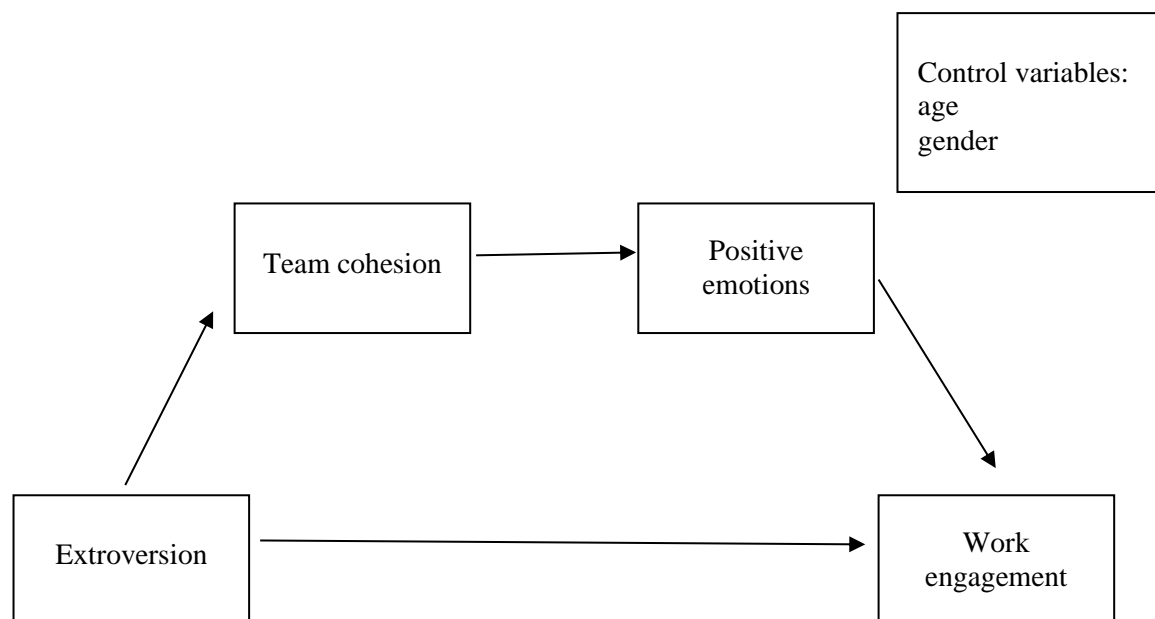


FIGURE 1
The hypothesized serial mediation model

Based on discussed literature and reasoning, the following hypothesis was formulated:

H1: Extroversion is positively and significantly indirectly associated with engagement, via team cohesion and positive emotion, in series.

Secondly, two exploratory hypotheses were formulated to understand the roles of team cohesion and positive emotion separately. The first one focuses on the role of team cohesion:

H1a: Team cohesion mediates the relationship between extroversion and work engagement.

The second one focuses on the role of positive emotion:

H1b: Positive emotion mediates the relationship between extroversion and work engagement.

METHODS

Participants and Procedures

This study was part of a larger research project focusing on the occupational health and well-being of Italian teachers. The research team contacted several primary and secondary schools in the Emilia-Romagna region to invite teachers to participate. The questionnaire was distributed through the Qualtrics online platform (www.qualtrics.com/it), with school principals providing the teachers' email addresses to the research team. Participants then received an email with an anonymous link to access the online questionnaire. Anonymity and confidentiality of the responses were protected in accordance with the Declaration of Helsinki, as well as the data protection regulations outlined by the General Data Protection Regulation (GDPR) and Italian and European privacy laws (Law Decree DL-196/2003 and Article 89 of EU REGULATION 2016/679). Informed consent was obtained from all participants, who were first introduced to the study details through a Participant Information Sheet, and a Consent Form was presented on the first page of the questionnaire. Consent was documented using a click-box method, permitting only those who clicked the *I agree* box to access the questionnaire. If a participant selected the *I do not agree* box, the questionnaire automatically closed.

A total of 551 teachers completed the questionnaire. This included high school teachers ($n = 449$; 81.5%), middle school teachers ($n = 54$; 9.8%), and primary school teachers ($n = 48$; 8.7%). Most of the participants were women ($n = 374$; 67.9%), with an average age of 47.61 years ($SD = 10.29$; min = 20, max = 66). The majority were employed on permanent contracts (70.4%) and worked full-time (80.4%). On average, their tenure at their current schools was 7.94 years ($SD = 8.63$).

Measures

Extroversion was evaluated through two corresponding items (i.e., "I see myself as someone who is reserved — Rev" and "I see myself as someone who is outgoing, sociable") derived from the Big Five Inventory 10-item (BFI-10), created by Rammstedt and John (2007). Participants responded to each item on a 5-point Likert scale, from 1 = *strongly disagree* to 5 = *strongly agree*.

Team cohesion was measured using the 5-item scale taken from Graetz and colleagues (2014). Each item (e.g., "When there is conflict on this team, the people involved usually talk it out and resolve the problem successfully") was assessed on a 5-point Likert scale, ranging from 1 = *strongly disagree* to 5 = *strongly agree*.

Positive emotions were assessed using the Emotion Contagion Scale (ECS; Doherty, 1997), a 15-item self-report scale that evaluates susceptibility to the social transmission of five basic emotions: anger, fear, sadness, happiness, and love. In the current study, only the 3-item scales pertaining to happiness (e.g., “When someone smiles warmly at me, I smile back and feel warm inside”) and love (e.g., “When I look into the eyes of the one I love, my mind is filled with thoughts of romance”) were utilized. Participants were asked to indicate how frequently they experience the situations described, using a 5-point frequency scale ranging from 1 (*never*) to 5 (*always*).

Work engagement was assessed through the short version of the Utrecht Work Engagement Scale (UWES-9; Schaufeli et al., 2006). This version includes three subscales that capture the essential dimensions of the concept: vigor (e.g., “At my job, I feel strong and vigorous”), dedication (e.g., “I am enthusiastic about my job”), and absorption (e.g., “I am immersed in my work”). Each subscale contains three items, with responses recorded on a 7-point frequency scale ranging from 0 (*never*) to 6 (*always*).

Analysis Strategy

Research hypothesis was tested by employing a bootstrapping technique as described by Hayes (2018). Specifically, a mediation model featuring several mediators operating in sequence was analyzed through the SPSS macro PROCESS (Model 6), enabling the evaluation of our current model. The model concurrently calculated all pathway coefficients to determine both direct and indirect effects. Furthermore, the bootstrapping procedure provided an estimate for the indirect effect, along with a 95% confidence interval. Absence of zero in this 95% confidence interval suggests that the indirect impact of the independent variable (i.e., extroversion) on the criterion variable (i.e., work engagement) through the outlined sequential mediators (i.e., team cohesion and positive emotions) is significant. Reflecting on prior research findings, controls were applied for the potential confounding influences of the participants’ gender and age (e.g., Lyu & Fan, 2022; Mazzetti et al., 2023; Shao et al., 2022).

RESULTS

Descriptive Results

Table 1 reports the correlations among the study variables. The control variables included in the current study were not significantly related to our study variables. In contrast, our criterion variable (work engagement) reported positive associations with all the variables under investigations. Moreover, all the scale used in the current study showed adequate parameters for internal reliability, with Cronbach’s alpha values exceeding the minimum threshold of .70 (Hair et al., 2010). Following the recommendations from Eisinga and colleagues (2013), the internal consistency of our extroversion measure was assessed by computing the Spearman-Brown coefficient, deemed the most appropriate reliability coefficient for a 2-item scale ($rs = .50, p < .001$).

TABLE 1
Means, standard deviations, reliability coefficients (on the diagonal),
and correlations between the study variables ($N = 551$)

	<i>r</i>							
	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Gender (1= male)	.32	.47	–					
2. Age	47.61	10.29	–.12**	–				
3. Extroversion	3.11	.85	–.15***	.05	(.50) ^a			
4. Team cohesion	3.25	.51	–.03	–.03	.10*	(.83)		
5. Positive emotions	4.12	.60	–.05	.01	.13**	.22***	(.82)	
6. Work engagement	5.03	.94	–.05	.01	.13**	.22***	.23***	(.70)

Note. $a = rs$ (Spearman-Brown coefficient).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Model Testing

Table 2 displays the estimates of all the path coefficients, as well as the 95% bias-corrected bootstrapped confidence intervals (95% CI) concerning the indirect relationships included in the hypothesized model. The examination of path coefficients reveals a significant relationship between extroversion and team cohesion, $\beta = .06$, $SE = .02$, 95% CI [.01, .11], suggesting that individuals with higher levels of extroversion are more likely to perceive or contribute to greater team cohesion. Furthermore, when considering positive emotions as an outcome, the relationship between extroversion and positive emotions is highlighted by a statistically significant path coefficient, $\beta = .11$, $SE = .02$, 95% CI [.07, .15], indicating that individuals scoring higher on extroversion tend to experience more positive emotions. Similarly, team cohesion demonstrates a stronger relationship with positive emotions, as indicated by a higher path coefficient, $\beta = .21$, $SE = .04$, 95% CI [.13, .29].

When focusing on the criterion variable (i.e., work engagement), the obtained results underscore that our independent variable (i.e., extroversion) contributes positively to this positive work-related psychological state, $\beta = .08$, $SE = .04$, 95% CI [.01, .18]. In a similar vein, both mediators report a positive association with work engagement. Specifically, our analysis reveals a positive impact of team cohesion, $\beta = .17$, $SE = .07$, 95% CI [.16, .47], and positive emotions, $\beta = .17$, $SE = .06$, 95% CI [.14, .40], on work engagement. Conversely, control variables (i.e., gender and age) did not exhibit significant associations with any of the constructs under investigation.

The analysis of indirect effects reveals how extroversion influences work engagement through several mediated pathways. The first pathway indicates that extroversion impacts work engagement via team cohesion, $\beta = .01$, $SE = .01$, 95% CI [.01, .03]. This result support Hypothesis 1a. Furthermore, extroversion's influence extends through positive emotions toward work engagement, $\beta = .02$, $SE = .01$, 95% CI [.01, .04]. This result support Hypothesis 1b. Looking at the overall model, it can be observed that extroversion affects work engagement through a sequential mediation involving both team cohesion and positive emotions, $\beta = .01$, $SE = .01$, 95% CI [.01, .02]. These findings provide empirical support to our study hypothesis (Hypothesis 1).

TABLE 2
Path coefficients and indirect effects for mediation models

Path coefficients									
	Team cohesion			Positive emotions			Work engagement		
	β	<i>SE</i>	95% CI	β	<i>SE</i>	95% CI	β	<i>SE</i>	95% CI
Gender (1= male)	-.03	.04	[-.12, .06]	-.03	.05	[-.14, .06]	-.02	.08	[-.22, .11]
Age	-.03	.01	[-.01, .01]	.01	.01	[-.01, .01]	.01	.01	[-.01, .01]
Extroversion	.06*	.02	[.01, .11]	.11**	.02	[.01, .13]	.08*	.04	[.01, .18]
Team cohesion				.21***	.04	[.15, .34]	.17***	.07	[.16, .47]
Positive emotions							.17***	.06	[.14, .40]
Indirect effects									
							β	<i>SE</i>	95% CI
Total							.04*	.01	[.01, .07]
Extroversion → Team cohesion → Positive emotions → Work engagement							.01*	.01	[.01, .02]
Extroversion → Team cohesion → Work engagement							.01*	.01	[.01, .03]
Extroversion → Positive emotions → Work engagement							.02*	.01	[.01, .04]

Note. *N* = 551. *SE* = standard error; 95% CI = 95% confidence interval using the bootstrap bias corrected method using 5000 samples.

p* < .05. *p* < .01. ****p* < .001.

DISCUSSION

The current study aimed to enrich the body of knowledge concerning the Job Demands-Resources (JD-R) theory by articulating how personality traits, particularly extroversion, interact with team dynamics and emotional climates to bolster work engagement among Italian teachers. In line with our main assumption, the results imply that extroversion significantly contributes to work engagement through its influence on team cohesion and positive emotions, supporting the person-situation interaction framework suggested by the JD-R theory. This finding supports the theory's assumption of the influence of personal resources, in addition to work resources, in the motivational process (Schaufeli & Taris, 2014).

Consistent with prior studies (Fukuzaki & Iwata, 2021; Prieto-Díez et al., 2022), our results affirm that extroversion is positively related to higher levels of work engagement. Extraverts' propensity to engage more deeply in their work environments likely stems from their inherent sociability and energy, which facilitate richer interactions and result in more vibrant participation in school activities. This finding corroborates the notion that personality traits can significantly shape perceptions and interactions within the workplace, influencing overall engagement levels (Macey & Schneider, 2008; Zulkarnain et al., 2023). The mediating role of team cohesion in the relationship between extroversion and work engagement provides deeper insight into social dynamics in work settings. This aligns with previous assertions that team cohesion is crucial for effective group functioning and significantly enhances member well-being (Beal et al., 2003; Evans & Dion, 2012). Extroverted individuals, characterized by their enthusiastic, confident, and proactive nature, are more motivated to build social relationships and collaborate with others. Such qualities lead to more positive and cohesive relationships within the work group (Aeron & Pathak, 2012) and foster collaborative teamwork. Groups composed of members with higher levels of extroversion experience greater team cohesion even in the initial stages of group formation (Acton et al., 2020). In educational contexts, where cooperation and interpersonal relationships are pivotal, fostering team cohesion could be particularly beneficial. Our findings suggest that extroverted teachers may naturally facilitate stronger team bonds, which in turn enhance engagement, underscoring the symbiotic relationship between individual traits and group dynamics.

Similarly, the mediating role of positive emotions highlights the importance of affective states in the workplace. Working in cohesive teams allows individuals to experience positive emotion contagion to a greater extent. It has been studied how the contagion of positive emotions, such as happiness, within the work environment increases group happiness (Barsade & Gibson, 2007). Positive emotions experienced within groups are positively related to social and interpersonal dynamics involving members, such as team cohesion. The engagement that teams invest in the circularity of emotions at the interpersonal level appears to influence both group emotions and individual members' affects and behaviors through a cascading process (Herman et al., 2008). Consistent with Diener and colleagues (2020), our findings illustrate that positive emotions not only enrich the work experience but also act as catalysts for higher engagement levels. This supports the idea that emotional contagion and the general emotional climate can significantly impact employee motivation and satisfaction.

The expression of positive emotions, especially in jobs involving high levels of stress, has been studied as a protective personal resource that reduces the impact of negative emotions by increasing work engagement (Lan et al., 2020). The experience of positive emotions in the work environment is seen as one of the greatest predictors of work engagement. Positive emotions thus emerge as highly important personal resources in work, as they are a source of the energy process and consequently the sustenance on which work engagement is based (Green et al., 2017). Work engagement, therefore, turns out to be emotionally grounded and nurtured, producing positive organizational outcomes.

While our results align closely with existing theories on the impacts of extroversion and team dynamics on work engagement, they also offer deeper insights into the specific mechanisms at play within educational environments. Unlike some studies that report mixed effects of extroversion on engagement (Li et al., 2021), our study is consistent with the literature confirming this relationship (Janssens et al., 2019; Paulik, 2020) and clearly delineates the pathway through which extroversion enhances engagement via interpersonal and emotional mediators.

Limitations and Future Research

Our study provided support in investigating the antecedents of work engagement among teachers. Although it emphasized the role of team cohesion and positive emotions in the relationship between extroversion and work engagement, some limitations of the research should be acknowledged.

First of all, although the sample of teachers consists of 551 subjects, all of them work in the same Italian region, Emilia Romagna, and this does not allow generalization of the results to the entire national context. Future research should include participants from different Italian regions to test the robustness of the associations highlighted by our study in the different school contexts.

Moreover, this cross-sectional study does not allow us to hypothesize causal relationships between variables, but only to be able to observe associations. Future research should include other objective measures (e.g., emotional intelligence, students' grades, the role of leadership) to provide more information about the influence of team cohesion and emotion in the teachers' work engagement.

Furthermore, another limitation of our study, which future research should address, is the multi-level analysis of team cohesion to investigate whether there is variability in effects at higher levels, such as between teachers from different classes or schools. Nonetheless, our findings attempt to fill the gap in the literature regarding the role of team cohesion and positive emotion on work engagement among teachers and highlight practical implications.

Practical Implications

The implications of this study are particularly relevant for school principals aiming to enhance the teacher engagement and institutional effectiveness. By recognizing the critical roles of personality, team cohesion, and emotional well-being, school leaders can develop targeted strategies to foster a more engaging and supportive work environment.

Given the significant impact of team cohesion on engagement, educational leaders should consider implementing team-building activities and collaborative projects that help strengthen the interpersonal bonds among teachers (Vangrieken et al., 2015). Encouraging open communication and shared goals can also enhance cohesion. School administrators could focus on creating positive emotional climates by recognizing achievements, celebrating successes, and providing support during challenges (Price, 2012). Training programs that equip teachers with emotional intelligence skills could help them manage their emotions and those of their peers, contributing to a more positive work environment (Valente et al., 2020; Wang, 2022).

Understanding that extraverted individuals might naturally boost team dynamics and positive emotions suggests that schools could benefit from leveraging these personality traits. School principals' knowledge of their staff's personality characteristics can help them create a work environment that facilitates

cohesion and teamwork and increases teacher satisfaction. Overall, this study not only corroborates but extends JD-R theory by clarifying how specific personality and psychosocial factors contribute to improved work engagement in educational settings. These insights offer valuable guidelines for the development of more cohesive and emotionally supportive educational environments.

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