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Beyond occupational exhaustion: exploring the influence of positive meaningful work on teachers' psychoemotional well-being in the digital age

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The teaching profession, intrinsically vocational, bestows upon its practitioners a deep sense of meaning and personal dedication. However, this personal commitment can be affected by the constant evolution of labour demands, exacerbated by the increasing technification of education. Both these needs, at a personal and organisational level, can lead to the development of emotional exhaustion, a psychological state manifesting with increased frequency in the educational sector. In this context, and referencing the job demands-resources model, we propose a model focused on the examination of the role according to the positive meaning in modulating emotional exhaustion. The research was conducted with a sample of 213 secondary school teachers in southern Spain, using a survey methodology. All data were analysed throughout the SPSS and Smart PLS statistical programs. The obtained results indicate that the presence of positive meaningful work has a negative impact on emotional exhaustion, technocomplexity and work-family conflict. Furthermore, the negative effect of positive meaning work on work-family conflict was stronger for teachers with greater experience. This study enhances the understanding of teacher well-being, suggesting the update of theoretical models to reflect current labour complexities, promoting managerial strategies and flexible policies to mitigate emotional exhaustion and foster a healthy working environment.

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Introduction

"He who has a why to live can bear almost any how" (Friedrich Nietzsche).

Throughout history, many have shown interest in the quest for the meaning of life. Consequently, in today's society, where work occupies a fundamental space in daily life and with its increasing technification, the need to find a job that aligns with an intrinsically meaningful purpose for the individual becomes especially relevant (Smids et al., 2020).

In the case of teachers, this profession has historically had a high vocational and interactional component due to the role that teachers perceive in their task on the formation of youth and their direct impact on their development and growth, finding a transcendental meaning in their work (Korthagen, 2014; Lavy, 2019) which generates higher rates of well-being and satisfaction (Martela and Pessi, 2018).

However, the integration of technology into teaching activities has required teachers to develop competencies different from those traditionally associated with teaching. This process of technification has accelerated significantly since the onset of COVID-19 and the subsequent confinement and closure of educational institutions, where they were forced to incorporate Information and Communication Technologies (ICT) to continue with the educational process (Dunn and Kennedy, 2019). This shift not only demanded that teachers quickly adapt to new tools but also remain updated in the face of constant technological innovations (Voet and De Wever, 2017). Nonetheless, the lack of adequate training in this area has generated stress and uncertainty feelings in professional development, alongside struggles due to time demands, inadequate resources and lack of energy (Alvarado et al., 2021; Jones and Kessler, 2020).

Despite its relevance, there is scanty research addressing the interaction of technostress with meaningful work and emotional exhaustion, as well as its influence on aspects related to teaching. Therefore, this study will focus on the relationship of Positive Meaning (PM) to Emotional Exhaustion (EE) as well as the influence of other mediating and moderating variables.

This document is organised into seven sections. The first section (Literature review) provides a comprehensive review of the existing literature, including the theoretical background, as well as the research model and the hypotheses in this research. The second section (Methodology) describes the method followed in the research, detailing the instruments used and the data collection and analysis process. Subsequently, the third section (Results) presents the findings of the study, while the fourth section (Conclusion and Discussion) presents the main conclusions of the study. Lastly, the fifth and sixth sections will detail the practical implications and limitations of the study.

Literature review

Conceptualisation of Positive Meaningful work (PM). The meaning of work is conceived as the perception that individuals attribute to the elements present in their environment (Lysova et al., 2019). Over four decades ago, researchers began to exhibit a growing interest in beliefs, expectations, and attitudes towards work, predominantly in industrialised societies (Schnell and Hoffmann, 2020). Stemming from this interest, authors like Both-Nwabuwe et al. (2017) defined the meaning of work as the subjective experience of significance, positing that this derives from the alignment between the individual and their work. However, this conceptualisation can be positive, negative or neutral. In the realm of positive psychology, a distinction has been made between "meaningful work" and "Positive Meaningful work", the latter being characterised as worker's perception of work to contribute to the greater good (Wrzesniewski, 2003).

Nowadays, the conceptualisation of meaningful work has become a topic of interest among researchers, largely due to growing dissatisfaction with organisational imperatives, concerns about job quality, and a new vision that sees work as a domain where individuals find meaning and purpose in their lives (Lepisto and Pratt, 2017). Moreover, this escalating interest responds not only to its theoretical relevance but also to the extensive personal and organisational repercussions that arise from the perception of meaning in work. Evidence of this is that various studies have demonstrated how meaningful work has consequences on pivotal organisational parameters such as burnout, work-family conflict, emotional exhaustion or job commitment (Guidetti et al., 2021; Harry, 2021).

The significant perception of work will be influenced by the inherent demands of the job position. In the case of educators nowadays, they not only need to handle pedagogical and didactic skills but also have to deal with a breadth of demands (Alvarado and Bretones, 2018). The Job Demands-Resources Model (JD-R), proposed by Demerouti et al. (2001) is particularly useful in this context. The JD-R not only identifies the factors that can lead to emotional exhaustion but also highlights the importance of not only organisational but personal resources. Although job demands can be stressful and exhausting, the presence of adequate resources can act as a buffer against exhaustion, promoting resilience and well-being. In the context of teaching, as already explained, technological advancements and work-family conflict can pose job demands that may lead to exhaustion. Consequently, it is essential to consider and to recognise the value of the meaning of work as a resource. Given this framework, the JD-R provides a solid foundation to study and understand the challenges of the current teaching profession in addition to the potential solutions to enhance its well-being.

Hypothesis development

Positive Meaningful work and Emotional Exhaustion. Emotional Exhaustion (EE) is one of the most extended studied dimensions of burnout (Maslach et al., 2001). This facet of burnout principally originates from discordance between the intense workload and inadequate rewards (Leiter and Maslach, 2009). This dynamic exhibit pronounced relevance within the sphere of service-sector professions, inclusive of teaching realms (Grandey et al., 2004), wherein incumbents frequently grapple with the exigencies of multi-dimensional demands from users, augmented by a perpetual engagement in emotional labour. In this context, earlier scholarly discourse posits that a fortified perception of work's meaningfulness can act as a bulwark against the onset of emotional exhaustion (Tummers and Den Dulk, 2013). This protective mechanism is hypothesised to emanate from the capability of such perceptions to fortify internal resources, thereby mitigating the propensity towards developing emotional exhaustion (Vinje and Mittelmark, 2007). Consequently, individuals harbouring a heightened propensity to ascribe positive significance to their work are inclined to construe stressors as challenges worthy of investment of energy, approaching them with an enhanced reservoir of resilience (May et al., 2004). However, when workers remain bereft of a perception of job significance, they find themselves precariously poised on the precipice of burnout, a vulnerability that intensifies when, despite their efforts, they fail to overcome occupational hurdles. Drawing upon previous evidence and reflections, the first hypothesis is formulated as follows:

H1: The grater the positive meaning of work (PM), the lesser the emotional exhaustion (EE).

Relationship and technocomplexity and work-family conflict as mediators. Nonetheless, the relationship between positive

meaning and emotional exhaustion appears to be susceptible to modulation by the personal resources harboured by an individual, potentially serving as mediators in this relationship. One of these resources is technocomplexity (TC), which refers to the feeling of incompetence due to a lack of technological skills, caused by the constant updates in both software and hardware associated with its use (Wang and Li, 2019).

However, technology, despite its undeniable capacity to simplify and enhance processes, does not invariably translate to positive outcomes. Paradoxically, it can intensify the workload (Wood et al., 2019; Butler and Stoyanova, 2018) on the one hand, and diminish the intrinsic value of work on the other. The holistic model by Lips-Wiersma and Morris (2009) elucidates a scenario where professionals, immersed in a highly technological work environment, might find themselves overwhelmed by the multiplicity of tasks and the constant changes, thereby inducing a perception that their labour constitutes a series of actions disconnected from the essence of the profession. This technology-dominated environment and its attendant complexity can foster a more negative appraisal of professional roles, undermining the significant perception of vocational fulfilment (Rothausen and Henderson, 2019). Given this theoretical foundation, the following hypothesis is proposed:

H2: The positive meaning of work (PM) negatively influences technocomplexity (TC).

As technology has been progressively integrated into the education sector, educators less familiar with technological tools and systems find themselves in a vulnerable position, experiencing higher levels of stress and feeling overwhelmed by technological challenges (Tarafdar et al., 2010). According to some authors (Pflügner et al., 2021) this constant evolution and the demand for technological adaptations demand continuous learning, leaving them physically and psychologically exhausted. In this context, research such as that carried out by De Oliveira et al. (2023) shows that technology induces in workers the perception of insufficient skills to perform their tasks due to the mismatch between knowledge in information systems and work demands, a situation that, sustained over time, leads to a state of exhaustion. Thus, when teachers are confronted with technocomplexity, high levels of stress emerge, characterised by burnout resulting from an imbalance in their ability to perform certain tasks (Alvarado et al., 2020; Califf and Brooks, 2020). Drawing on the numerous studies that have identified this mismatch between individual skills and technological demands as a source of emotional exhaustion (Berg-Beckhoff et al., 2017; Kaltenegger et al., 2023), the following hypothesis is formulated:

H3: An increase in technocomplexity (TC) correlates positively with heightened emotional exhaustion (EE).

However, the relationship between work and the onset of emotional exhaustion is also mediated by other demands in the worker's personal environment. In this case, the work-family conflict (WFC) would be one of them. According to authors such as Bernuzzi et al. (2022) or Bozoğlu and Armutlulu (2020), WFC manifests that when the boundaries between the work and personal realms become permeable, hindering the enjoyable performance of both. The escalation of remote work has further blurred the lines between these domains (Tsang et al., 2023). As highlighted by Shaukat et al. (2022), the dissolution of physical barriers between work and home has engendered additional risks for teachers, since, in most cases, work activities have spilled over into the family environment. This lack of physical and temporal separation between work and family roles can lead to an incensement in responsibilities and blurring of boundaries between work hours and rest periods (Žiedelis et al., 2022). In this context, technocomplexity (TC) emerges as a critical variable that could influence WFC. Gemmano et al. (2023) suggest that

greater technological complexity generates cognitive overload and associated stress that can have a negative impact on managing the work-family balance. This is because TC may necessitate a reorganisation of family and work routines, which, in turn, could exacerbate the conflict between these two spheres. Therefore, based on the reviewed literature, the following hypothesis is proposed:

H4: Technocomplexity (TC) has a significant influence on work-family conflict (WFC).

Regardless, the WFC will be influenced by the resources, especially the personal ones that the worker possesses, so that they can act as a buffer against its negative impacts (Bakker et al., 2011). In this vein, PM surfaces as a notably pertinent occupational resource. As posited by Bragger et al. (2021), when employees discern that their labour activities hold significance, this sentiment of relevance can permeate into other facets of their life, thereby alleviating the WFC both on a behavioural and emotional stress plane. Consequently, when employees encounter meaningful work, this psychological welfare can transition into the family realm via the articulation of positive emotions, facilitating a reduction in the potentiality of conflict between the two roles (Tummers and Bronkhorst, 2014; Voydanoff, 2004). Grounded on these empirical and theoretical discoveries, the ensuing hypothesis is formulated:

H5: The heightened perception of positive meaning (PM) corresponds with a reduced prevalence of work-family conflict (WFC).

Furthermore, it has been verified that even though an employee may not exhibit immediate signs of fatigue due to the conflict between their work and family roles, they are likely to experience them subsequently (Jensen, 2016). This arises because the utilisation of personal resources to cope with the conflicting demands from both spheres gradually escalates, which, in the long term, engenders emotional exhaustion (Ford et al., 2007; Van Daalen et al., 2009). Along this line of argument, the literature contends that when job demands are excessive, workers are less inclined to engage in family activities upon returning home, adding an additional layer of stress and long-term emotional exhaustion (Hall et al., 2010). Previous studies (Karatepe and Kilic, 2015; Rubio et al., 2015) also corroborate this relationship between work-family conflict and emotional exhaustion. Based on these premises, the following hypothesis is posited:

H6: Greater work-family conflict (WFC) leads to higher emotional exhaustion (EE).

Lastly, numerous studies have linked the significant work variable with personal type variables, such as experience (Anthun and Innstrand, 2016 & Weeks and Scheffert, 2019). This phenomenon can be attributed to the fact that the process of attributing significance is highly contextual and social, suggesting that the interpretations of senior workers might significantly differ from those of their younger co-workers (Allan et al., 2019 Wrzesniewski et al., 2003). Consequently, workers with more experience might intend to seek jobs they regard as highly meaningful to preserve their organisational identity and prevent role loss (Wang et al., 2008). In this way, a greater worker experience increases their meaning of work, which in turn allows them to develop their potential at work (De Boeck et al., 2019) and thus decreases the stress they experience when using technology.

In this context, Hoole and Bonnema (2015) conducted a study that revealed generational differences in the perception of work significance. The Baby Boomers (people born between 1946 and 1964) displayed a higher level or significance, followed by Generation X workers (people born between 1964 and 1981), while Generation Y members (people born between 1981 and
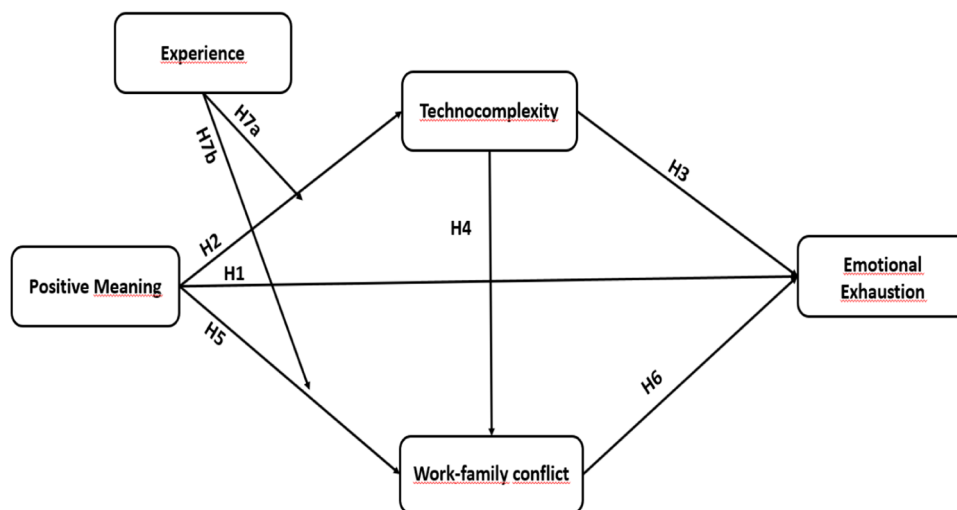
Fig. 1 Research model. The indirect effect of positive meaning on emotional exhaustion through technostress and work-family conflict, moderated by experience.

1999) exhibited the lowest levels. In turn, some authors (Chen et al., 2017) have shown that with a higher perception of meaningful work, work demands are less likely to spill over into the home domain, as positive work acts as a buffer resource, increasing energy and positive mood outside of work, allowing employees to ameliorate their personal problems (Johnson and Jiang, 2017).Therefore, we propose the following hypotheses:

H7a: The relationship between PM (Positive Meaning) ant TC (Technocomplexity) is stronger among employees with more experience.

H7b: The relationship between PM (Positive Meaning) and WFC (Work-Family Conflict is stronger among employees with more experience.

Referencing the relationship between the variables, we propose the following model as shown in Fig. 1.

Methodology
Research design. To verify the posed hypotheses, we conducted a cross-sectional quantitative study, deploying various questionnaires. The target population for this study were secondary education teachers from public educational institutions in Spain.

Study sample. The study was executed with a sample of secondary education teachers.

Because of the inability to ascertain the total number of the target population, we calculated the minimum sample size utilising the formula proposed by Tabachnick and Fidell (1996): $n = 50 + 8*m$ (where "m" represent the number of independent variables implicated in the study). To assemble the sample, questionnaires were dispatched to the entire faculty of eight middle education institutes in the southern region of Spain. The criteria established for inclusion in the study were being an incumbent secondary education teacher and having a minimum of 1 year of seniority at the time they responded to the survey. In total, 600 questionnaires were dispatched, from which we received 213 valid responses (35.5%). Hence, this study accumulated a sample size larger than the minimum suggested. The questionnaire was distributed between September 2022 and May 2023. Concerning the sample distribution, there is a predominance of the female gender (63.6%). The age of the participants ranged between 23 and 61 years, with an average age ($\bar{x}$) of 38.69 and standard deviation (SD) of 10.606. Regarding the seniority of the participating teachers in the study, it ranged

between 1 and 39 years, with an average work experience ($\bar{x}$) of 14.64 years and a standard deviation (SD) of 10.76.

Instruments. The structured questionnaire used in this study was meticulously designed to incorporate straightforward and impartial formulations, thus ensuring an uncomplicated comprehension for the respondents.

To measure the Positive Meaning (PM), we used its corresponding dimension of the questionnaire titled "The Work As Meaning Inventory" (WAMI) as postulated by Steger et al. (2012). This dimension is comprised of 4 items, an exemplar of which is "I know that my work makes a positive difference in the world".

Pertaining to Emotional Exhaustion (EE), this variable was quantified through the aforementioned dimension of the Maslach Burnout Inventory- General Survey (Maslach et al., 1996). This segment contains 5 questions, with one being "I feel emotionally drained in my job".

In the endeavour to gauge the Technocomplexity (TC) variable, we adopted the Technocomplexity dimension from the Technostress Creators Scale (TCS), conceptualised by Ragu-Nathan et al. (2008). This dimension is structured with 4 items, a sample item being "I find it exceedingly complex to understand and utilise new technologies".

To measure the Work-family Conflict (WFC) variable, we employed the aforementioned dimension of the Work-family scale developed by Netemeyer et al. (1996). This scale comprises 5 questions, an example of which is, "My current job influences my family plans/commitments".

All questions were measured using a 5-point Likert scale, where 1 represented "Never" and 5 denoted "Always".

Furthermore, we gathered sociodemographic data such as seniority, age and gender.

Data analysis method. In relation to data analysis, we used the SPSS© v.25 software for computing descriptive statistics, encompassing measures of central tendency, dispersion, and skewness. Regarding the modelling analyses, we adopted the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach through the Smart PLS 4 software as a method for analysing the interrelations amongst variables. This method is distinguished by its adaptability to data allocation and its ability to estimate complex multivariate models, which makes it more

suitable for sampling smaller sizes than the covariance-based version of the SEM.

Following the preliminary analysis, we detected the existence of Common Method Bias (CMB), a phenomenon frequently observed in research employing the PLS-SEM method stemming from the measurement procedure, given that both dependent and independent variables are ascertained via the same response mechanism, such as a Likert-type questionnaire (Kock et al., 2021). The CMB serves as a potential threat since its variance can influence the interrelationship between constructs, thereby skewing empirical outcomes and jeopardising the validity of the study's findings (Jakobsen and Jensen, 2015; Schwarz et al., 2017). According to the statistical approach delineated by Kock (2015), if the Variance Inflation Factors (VIF) exceeds the value of 3.3, it signifies collinearity and thus, a potential CMB contamination in the proposed model. However, as illustrated in Table 1, the VIF coefficients for the variables remain below this threshold, substantiating that the proposed model does not exhibit a collinearity issue.

The interconnections between the indicators and their corresponding constructs in the gathered data were evaluated, ensuring both their reliability–through Cronbach's Alpha coefficients and rho A– and composite reliability (CR) as well as convergent validity, the latter assessed through factorial loads and the average variance extracted (AVE). Moreover, the robustness of the measure in terms of discriminant validity was verified, employing the criterion set by Fornell and Larcker (1981), as well as the heterotrait-monotrait (HTMT) relation.

Results

In the initial stage, we conducted a factorial load analysis of all the variables under the study. All the items surpassed the benchmark points recommended by Risher and Hair (2017), which is 0.7.

The descriptive analysis (mean scores and standard deviation), as well as the reliability and composite reliability of the used instruments, can be perceived in Table 2. Concerning the AVE of all constructs, it surpasses the suggested threshold of 0.5 (Fornell and Larcker, 1981).

Discriminant validity was also verified to ascertain if each construct is distinctly different from the others, following the criteria set by Fornell and Larcker (1981), and the Heterotrait-Monotrait Ratio (HTMT) as defined by Henseler et al. (2016). Regarding the first criterion, the most widely accepted pre-sumption is that the square root of the AVE should exceed the correlation between the constructs (refer to Table 3). Similarly, discriminant validity was affirmed based on the second criterion, as all HTMT values remain below the 0.9 threshold (Gold et al., 2001).

After verifying the reliability and validity of the instruments, we decided to analyse our study hypotheses.

As can be observed in Table 4, all the proposed hypotheses were confirmed.

From the study results, we observed that PM ($\beta = -0.282$, $t = 4.499$), TE ($\beta = 0.217$, $t = 5.043$), WFC ($\beta = 0.526$, $t = 10.832$), significantly influence EE. Likewise, TE ($\beta = 0.435$, $t = 8.255$), and PM ($\beta = -0.132$, $t = 2.370$) are positively and negatively associated with WFC respectively. Lastly, the negative and significant relationship of PM with TE ($\beta = -0.289$, $t = 2.498$) has also been confirmed.

We also assessed the effect size of the variables in relation to the hypotheses (f^2), referring to the threshold proposed by Cohen (2013), where values of 0.02, 0.12 and 0.35 indicates a small, medium and large effect size, respectively (Table 4).

Table 4 illustrates that both PM and EE exert a small effect on TE, whereas TE manifest a medium effect on WFC, contrasting with the small effect emanated from EE and PM. Lastly PM, TE and WFC wield medium, low and high effects, respectively, on emotional exhaustion.

For the evaluation of the suitability of the proposed model in our study, we calculated the SRMR indicator, a measure of the overall fit of the model particularly suited for PLS. In the analysis, we used a bootstrapping method with 10.000 samples. In our case, its value escalated to 0.078, which assures the model's adjustment, as it remains below the generally accepted limit of 0.08 (Henseler et al., 2015).

According to the impact of the proposed mediating variables in the model, the indirect effect of PM on emotional exhaustion through both TE ($\beta = -0.036$, $t = 2.105$) and WFC ($\beta = -0.125$, $t = 2.365$) is statistically significant within a 95% confidence interval (see Table 5 and Fig. 2).

Finally, we also set out to analyse the moderating mediation of the experience effect (EX) on the relationship between PM and TE. Although the data retrieved were not significant ($\beta = 0.059$, $t = 0.805$), consequently, all hypotheses have been confirmed except for H7a, in which there is a moderating mediation between PM and WFC ($\beta = 0.248$, $t = 4.112$, $p = 0.000$), thus sub-stantiating H7b.

Lastly, as recommended in social science research (Hair et al., 2021), the predictive power was assessed using PLS Predict with ten folds and one repetition, following the guidelines outlined by Shmueli et al. (2019). This process is advisable since R^2 solely evaluates the explanatory power of a model, but not its predictive capacity on data distinct from the selected sample (Cepeda et al., 2017). Thus, reference was made to the Q^2 values, the Root Mean Square Error and the Mean Absolute Error. In our case, all values were greater than 0, which shows the predictive validity of the proposed model for values of new cases (Woodside, 2013) (Table 6).

A summary of the results obtained from the proposed model can be observed in Fig. 2.

Table 1 Inner VIF for the predictors.

	PM	TE	WFC	EE
PM		1.053	1.081	1.072
TE			1.102	1.206
WFC				1.238
EE				
SE		1.013	1.078	

EE Emotional Exhaustion, EX Experience, PM Positive Meaning, TE Technocomplexity, WFC Work-family Conflict.

Table 2 Measurement model result.

Constructs	Mean	Standard deviation	Cronbach's a	Rho_A	Composite reliability	Average variance extracted (AVE)
Emotional exhaustion	2.937	0.862	0.917	0,920	0.937	0.750
Positive Meaning of work	3.283	0.588	0.912	0.978	0.936	0.786
Technocomplexity	2.704	0.8831	0.881	0.898	0.917	0.734
Work-family conflict	2.943	0.937	0.935	0.945	0.951	0.794

Table 3 Discriminant validity of the instruments.

	Fornell Lacker					HTMT			
	EE	SE	PM	TE	WFC	EE	SE	PM	TE
EE	**0.866**					0.118			
SE	−0.075	**1.000**				0.466	0.049		
PM	−0.454	−0.047	**0.887**			0.515	0.268	0.199	
TE	0.481	0.246	−0.184	**0.857**		0.727	0.196	0.234	0.419
WFC	0.682	−0.188	−0.242	0.404	**0.891**				

Square root of AVE is in bold; *EE* Emotional Exhaustion, *EX* Experience, *PM* Positive Meaning, *TE* Technocomplexity, *WFC* Work-family Conflict.

Table 4 Hypothesis testing.

Hypothesis	Beta	Confidence Intervals	*T* value	*P* value	F2	Decision
Factores que afectan al desarrollo de agotamiento emocional						
H1: PM->EE	−0.282	(−0.387, −0.188)	4499	0.000	0.188	Accepted
H2: PM->TE	−0.289	(−0.238, −0.039)	2498	0.013	0.027	Accepted
H3: TE->EE	0.217	(0.133, 0.300)	5043	0.000	0.094	Accepted
H4: TE->WFC	0.435	(0.329, 0537)	8255	0.000	0.256	Accepted
H5: PM->WFC	−0.132	(−0.238, 0026)	2370	0.018	0.022	Accepted
H6: WFC->EE	0.526	(0.427, 0.615)	10832	0.000	0.546	Accepted

EE Emotional Exhaustion, *EX* Experience, *PM* Positive Meaning, *TE* Technocomplexity, *WFC* Work-family Conflict.

Table 5 Analysis of mediation with Tecnostress and Work-family conflict as mediators.

Hypothesis	Beta	Confidence Intervals	*T* value	*P* value	Decision
H4: PM->TE->EE	−0.036	(−0.71, −0.008)	2.105	0.035	Accepted
H8: PM->WFC->EE	−0.069	(−0.125, −0.014)	2.365	0.018	Accepted

EE Emotional Exhaustion, *EX* Experience, *PM* Positive Meaning, *TE* Technocomplexity, *WFC* Work-family Conflict.
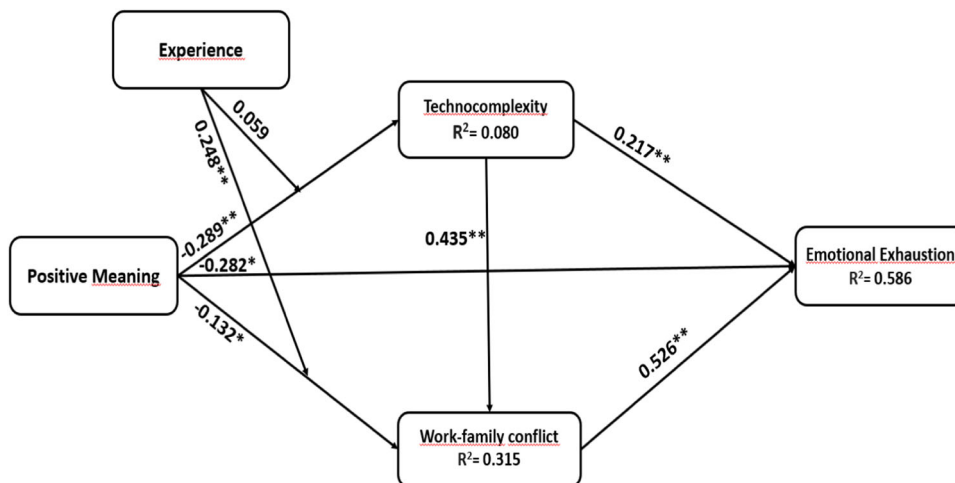

Fig. 2 Results of the proposed model. Note: *p<0.05; **p<0.01.

Discussion and conclusion

In this study, we proposed a model to investigate the association between Positive Meaning (PM) and Emotional Exhaustion (EE) among educators, assessing the role of several mediating and moderating variables in this context.

Similar to other research (Manuti et al., 2022) that has studied the effect of work resources, such as leadership support or parity leadership style, we found that positive meaning has an inhibitory effect on Emotional Exhaustion. The attributed significance functions as a labour resource that can alleviate the negative repercussions of high demands, fostering increased resilience against work-related pressures and thus diminishing the likelihood of adverse outcomes. However, this effect is conditioned by various mediating and moderating variables that influence it.

In further analyses, we observed that the pervasive labour demands associated with technology usage could potentially deplete employees' psychological resources, leading to negative outcomes such as Technocomplexity, Work-family conflict and

Table 6 Moderating Effect.

Hypothesis	Beta	Confidence Intervals	T value	P value	Decision
H7a: EX x PM ->TE	0.059	(−0.077, 0.203)	0.805	0.421	Rejected
H7b: EX x PM ->WFC	0.248	(0.131, 0.368)	4.112	0.000	Accepted

EX Experience, *PM* Positive Meaning, *TE* Technocomplexity, *WFC* Work-family Conflict.

Emotional Exhaustion. Consequently, the inherent meaning found in work emerges as a potent psychological resource, counteracting the labour demands and explicating its negative association with occupational burnout variables.

Primary data and empirical findings illustrate that the perception of meaningfulness in work beneficially influences the apprehension of other outcomes. These findings have been partially delineated in previous studies involving diverse professions such as hotel employees (Rabiul et al., 2023); physician workers (Mostafa, 2022) or occupational therapists (Scanlan et al., 2019). The results gleaned from our study accentuate the resilient role that the meaningfulness of work plays within pedagogical practice. Although it is feasible to go around considering work as a 'mission', the prominence of meaningful labour as a supportive mechanism to overcome daily hurdles should be emphasised and regarded as a valuable internal resource (Pace et al., 2022; Rosso et al., 2010). Furthermore, our research discerned that Technocomplexity serves as a precursor to Emotional Exhaustion, exerting a significant influence on it, which aligns with preceding research (Ayyagari et al., 2011; Harris et al., 2022). This can be attributed to the fact that the overutilization of technology within the workplace may deprive the familial sphere of energy, attention and time, engendering challenges in meeting both work-related and familial demands, a scenario that becomes more pronounced in dual-income households (Gemmano et al., 2023).

In alignment with the extant literature (Ma et al., 2021; Kotera et al., 2021), our study elucidates the influence of Work-Family Conflict on Emotional Exhaustion, which manifests in circumstances where the educator, by allocating a greater amount of time to work responsibilities over familial duties and experiencing a conflict therein, undergoes a diminution in their ability to recuperate from the fatigue associated with both domains. This, over time, diminishes their mental resources, culminating in a state of Emotional Exhaustion (Ferguson et al., 2016).

Our findings have also corroborated the mediating role of the variables Technocomplexity and Work-Family Conflict. While it is known from previous studies of the influence of variables such as psychological capital or work engagement on the relationship between positive meaning of work on emotional exhaustion (Tan et al., 2019; Tan and Yeap, 2021), our results are especially significant given the scarce existing literature on the mediating role of technocomplexity and Work-Family Conflict.

Finally, in line with to authors such a Karatas and Özdemir (2022) and López and Ramos (2017), we have examined the role of tenure in the position as a precursor to Positive Meaning. Although it was verified that this variable modulates the relationship between Positive Meaning and Work-Family Conflict, a significant moderating effect between Positive Meaning and Technocomplexity was not found. This might be attributable to the tendency of more experienced employees to develop more effective coping strategies to balance work and family demands, which is mitigated by Positive Meaningful work. However, experience might not moderate the relationship between Positive Meaning and Technocomplexity, as the latter is more susceptible to technological factors and constant changes in the work environment, which can affect employees irrespective of their level of experience.

Implications of the study

The findings of this study bear manifold implications that enrich the understanding of the psycho-emotional well-being of educators. Firstly, the study extends the applicability of the job demands-resources model by incorporating the variables under study into a unified framework, thereby suggesting the potential to update existing theoretical models to reflect the complexities of the contemporary work environment. Moreover, the identification of Technocomplexity and Work-family Conflict as mediating variables in the relationship between Positive Meaning and Emotional Exhaustion confers a more comprehensive understanding of their interplay, implying that future studies might focus on uncovering additional strategies and mediating factors. Additionally, the lack of a significant effect of experience on the relationship between Positive Meaning and Technocomplexity raises questions regarding how varying levels of job experience might influence the susceptibility to technostress, representing an area of interest for future investigations. Lastly, as the study focuses on educators, the findings might bear specific implications for understanding how the investigated variables interact within this cultural and demographic context. This could potentially lead to additional research comparing these results with teachers in other countries or cultural settings.

Furthermore, concerning managerial implications, the results could be greatly beneficial for stakeholders involved in decision-making within the educational sector. Given that the study demonstrates that Positive Meaning functions as a psychological resource capable of mitigating Emotional Exhaustion, managers could devise well-being programs that foster a sense of purpose and meaning in the workplace. In addition, due to the fact that Technocomplexity has been proven to be a precursor to Emotional Exhaustion, institutions could benefit from implementing training programs that instruct educators on how to proficiently manage Technocomplexity, perhaps through skill development and stress management techniques. The study also underscores the role of Work-Family Conflict in Emotional Exhaustion; thus, managers might implement more flexible Work-Family reconciliation policies, such as adjustable working hours or the option of telecommuting. Consequently, given that the study identifies several variables affecting the well-being of educators, it would be prudent for educational institutions to put into place evaluation and monitoring systems that measure these factors on a regular basis.

Limitations. While this study makes theoretical and practical contributions, like other studies, it has some limitations that shows the needing of further research. Firstly, the representativeness of the sample and its subsequent generalisability. The analysis was based on data collected from 213 secondary school teachers located in southern Spain. This geographical delimitation might limit the extrapolation of our results to other geographical areas. Therefore, it is recommended that this research be replicated in a diversity of geographical and cultural settings to gain a better understanding of these dynamics and to validate the transferability of the results.

Secondly, it is important to point out the cross-sectional nature of the study as a limitation. Although this methodological

approach is efficient for identifying some relationships between observed variables, it does not allow us to establish in a clear and conclusive way the cause-effect relationship between significant work factors and emotional exhaustion in teachers, so it would be advisable to carry out other complementary studies. In addition, the use of surveys as a data collection tool entails potential response biases that may influence the interpretation of the results. These biases can arise from a variety of sources including, but not limited to, participants' predisposition to respond in a socially desirable way or to interpret questions subjectively. To overcome these limitations and to deepen the understanding of the dynamics between meaningful work and emotional exhaustion in educational settings, it is recommended that complementary methodological approaches be adopted in future research. Thus, the adoption of a longitudinal design would allow us to examine how these relationships develop and fluctuate over time, providing a richer and more nuanced view of causal relationships. Furthermore, the implementation of a mixed methods design could enhance a more holistic and contextualised interpretation of the phenomena studied.

Lastly, this research did not use all the subdimension of technostress; therefore, it is strongly recommended that future studies incorporate additional subdimensions, to achieve more precise results.

Data availability

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

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Acknowledgements

Competing interests
The authors declare no competing interests.

Ethical approval
This study was conducted in accordance with the guidelines of the Declaration of Helsinki. The methodology of this study was approved by the Ethics Committee of the Department of Education, Psychology and Communication of the University of Bari Aldo Moro, with the ethical code of reference ET-23-29.

Informed consent
The first page of the questionnaire included information on the consent procedure as well as the objectives of the study and guaranteed the confidentiality and anonymity of all responses. We then asked for their voluntary participation in the survey, so that participants responded to the survey measures voluntarily and without any obligation.

Additional information
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