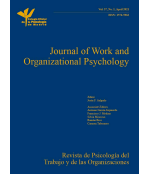




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Emotional Labor, Occupational Identity, and Work Engagement among Portuguese First Responders

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ABSTRACT

First responders, including police officers and firefighters, face emotionally intense, high-risk situations, necessitating effective emotional management to sustain work engagement and occupational identity. This study, grounded in emotional labor and social identity theories, analyzed data from 248 first responders to explore the impact of emotional labor on work engagement, with occupational identity as a mediator. Results showed that firefighters faced higher demands for positive emotion expression and reported greater occupational identity and work engagement than police officers. Positive emotion expression enhanced work engagement, while surface-acting and negative emotion suppression negatively affected both outcomes, particularly for police officers. Mediation analysis revealed occupational identity as a key mechanism linking emotional labor to work engagement. These findings highlight the stabilizing role of occupational identity in work engagement despite emotional labor demands. The study emphasizes the need for targeted and occupation-specific interventions among first responders to mitigate emotional exhaustion and sustain engagement.

Trabajo emocional, identidad ocupacional e implicación en el trabajo en equipos portugueses de intervención rápida

RESUMEN

Los equipos de intervención rápida, incluidos policías y bomberos, se enfrentan a situaciones emocionalmente intensas y de alto riesgo, lo que hace necesario un manejo emocional eficaz para mantener la implicación en el trabajo y la identidad ocupacional. Este estudio, basado en las teorías del trabajo emocional y la identidad social, analizó datos de 248 miembros de equipos de intervención rápida para explorar el impacto del trabajo emocional en la implicación en el trabajo, con la identidad ocupacional como mediadora. Los resultados indican que los bomberos se enfrentan a mayores exigencias para expresar emociones positivas y expresan mayor identidad ocupacional e implicación en el trabajo que los policías. La expresión de emociones positivas facilitó la implicación en el trabajo, mientras que la actuación superficial y la supresión de emociones negativas afectaron negativamente a ambos resultados, particularmente en los policías. El análisis de mediación pone de manifiesto que la identidad ocupacional es un mecanismo clave que conecta el trabajo emocional con la implicación en el trabajo. Estos hallazgos destacan el papel estabilizador de la identidad ocupacional en la implicación en el trabajo a pesar de las exigencias del trabajo emocional. El estudio subraya la necesidad de intervenciones específicas y adaptadas a cada ocupación en los miembros de equipos de intervención rápida para mitigar el agotamiento emocional y mantener la implicación en el trabajo.

First responders, including police officers, firefighters, and emergency and paramedic teams (Ryan et al. 2022; Substance Abuse and Mental Health Services Administration [SAMHSA, 2018]), work in some of the most demanding and stressful occupations (Bryant, 2022; Kern et al., 2021). Every day, they face emotionally challenging, unpredictable (Gryshchuk et al., 2022), and exhausting (SAMHSA, 2018) environments and situations that can take a toll on their mental and physical health (SAMHSA, 2018), including exposure to death, loss, injury, personal safety risks, and extended working hours that

disrupt sleep and family life (Marmar et al., 2006). Under Portuguese law (Decree-Law 243/2015; Decree-Law 247/2007), first responders are required to be permanently available, leading to frequent interruptions in their personal and family time whenever an incident occurs. In addition, many firefighters fulfill these duties on a voluntary basis, balancing them with other jobs, which may add to the strain on their mental health (SAMHSA, 2018). Despite these challenges, first responders often avoid seeking help, often due to male-dominated work environments where vulnerability is stigmatized (Jones et al.,

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2020). These conditions place first responders at heightened risk for mental health issues such as depression, anxiety, alcohol abuse, post-traumatic stress, burnout, and suicide ideation (Bryant, 2022; McDonald et al., 2021).

Given the intense emotional demands of their roles, first responders must effectively manage their emotions (SAMHSA, 2018) to maintain professionalism (Kern et al., 2021; Mastracci & Adams, 2020). They engage in emotional labor, which involves managing one's own feelings to project appropriate emotional responses when performing work-related tasks (Hochschild, 1983). This often requires suppressing negative emotions to avoid tensions and conflicts (Bakker & Heuven, 2006), and displaying positive emotions in public interactions regardless of internal emotional states. Emotional labor can take two main forms: deep-acting, where adjust their internal feelings to match expected emotions, and surface-acting, where only outward expressions (e.g., facial expression, gestures, tone of voice) are altered (Ashforth & Humphrey, 1993; Brotheridge & Grandey, 2002; Hochschild, 1983; Morris & Feldman, 1996). Although deep-acting may foster authenticity and strengthen connection with one's role, it can also lead to self-alienation (Diefendorff & Gosserand, 2003), through emotional and cognitive overload, indirectly affecting behavior change (Ashforth & Humphrey, 1993). Conversely, surface-acting often results in emotional dissonance – the stress caused by the difference between felt and unfeared emotions (Morris & Feldman, 1996) – which has been linked to negative outcomes such as anxiety, depression, and burnout (Bakker & Heuven, 2006; Doyle et al., 2021).

Occupational identity – the sense of belonging to a social group and the associated emotional value and meaning (Tajfel, 1974) – is another critical factor for first responders (Brotheridge & Lee, 2003; Mastracci & Adams, 2020), as it can protect against the adverse effects of emotional labor (Ashforth & Humphrey, 1993). A strong occupational identity involves a commitment to the profession and is shaped by social, personal, and contextual factors (Skorikov & Vondracek, 2011). This identification strengthens purpose and can motivate first responders to uphold professional standards, including emotional display rules essential for their roles. Additionally, those with a strong occupational identity are more likely to use deep-acting strategies (Brotheridge & Lee, 2003) and experience greater authenticity and satisfaction (Ashforth & Humphrey, 1993). As a personal resource, occupational identity can buffer against surface-acting, where a lack of support for authentic self-expression may increase detachment from others.

Finally, work engagement – a positive, fulfilling work-related state marked by vigor, dedication, and absorption (Schaufeli et al., 2002) – is essential for first responders' well-being. Occupational identity can promote work engagement by reinforcing the value and meaning of one's role (Britt, 2003). Similarly, the emotional labor strategy also affects engagement: deep-acting strategies tend to boost engagement, while surface-acting may have the opposite effect (Bhowmick & Mulla, 2016; Brotheridge & Lee, 2003). Therefore, both a strong occupational identity and the use of deep-acting strategies are crucial to sustaining first responders' engagement.

Despite the growing interest in first responders' mental health, research on their emotion regulation strategies remains limited, with most studies focusing primarily on post-traumatic stress (Bryant, 2022; Marmar et al., 2006; Oliveira et al., 2021; SAMHSA, 2018). This study explores differences in emotional labor demands and strategies between two key groups of first responders – police officers and firefighters – who encounter distinct emotional challenges due to the nature of their roles. Additionally, it examines the mediating role of occupational identity in the relationship between emotional labor (demands and strategies) and work engagement. Understanding the impact of occupational identity is particularly relevant, as emotions are often viewed as potential distractions for first responders in high-stakes situations (Kalkman, 2023). However, effective emotion regulation strategies can support their performance and resilience, offering long-term benefits (Doyle et al., 2021).

Occupational Differences in Emotional Labor, Occupational Identity, and Work Engagement among First Responders

First responders face distinct emotional demands that shape their emotion regulation strategies, occupational identity, and work engagement. While a consistent pattern of emotional behavior is expected in these occupations, the intensity and nature of emotional demands can vary between them (Levy-Gigi et al., 2016; Ryan et al., 2022). This study compares police officers and firefighters, exploring distinct emotional labor demands and strategies, occupational identity, and work engagement patterns. The study aims to provide insights into profession-specific strategies for enhancing resilience and emotion regulation by comparing these occupations.

Police officers routinely engage in complex, high-pressure situations involving crime prevention, which often exposes them to violent, destructive, and emotionally distressing events (Lan et al., 2020; Rodrigues, 2018). These situations can range from chaotic crime scenes to witnessing severe physical trauma and death. As a result, police officers must exhibit strong emotional control (Bakker & Heuven, 2006; Daus & Brown, 2012; van Gelderen et al., 2017), which can be especially challenging given the unpredictable and often volatile nature of their work (Oliveira et al., 2023). Their duties involve varied emotional interactions, from confrontations with offenders to providing support for victims (Black & Lumsden, 2021), requiring rapid shifts in emotional intensity (Martin, 1999). Over time, these demands can foster a sense of social detachment as a coping mechanism (Schaible, 2006).

To manage these emotional demands, police officers often adopt professional detachment, which helps them to remain composed and make rational decisions in distressing circumstances (Arjmand et al., 2024). However, prolonged suppression can lead to mental health issues like emotional fatigue (Bhowmick & Mulla, 2016; van Gelderen et al., 2017), burnout (Lennie et al., 2020; Mastracci & Adams, 2020), and compassion fatigue (Ondrejková & Halamová, 2022). Despite these challenges, objectivity and neutrality remain vital in police work (Bakker & Heuven, 2006; van Gelderen et al., 2011, 2017), serving as pillars of their occupational identity (Oliveira et al., 2023; Schaible, 2006). Additionally, the intense demands of their roles often lead to fluctuations in work engagement, which can either strengthen their sense of purpose or cause disengagement under chronic stress and emotional exhaustion (Lennie et al., 2020; Mastracci & Adams, 2020).

In contrast, firefighters face emotionally demanding responsibilities (Chen et al., 2023; Ryu et al., 2020), such as preventing and extinguishing fires, providing emergency medical services (Hyun et al., 2020; Shin et al., 2023), and performing rescues (Decree-Law 247/2007). These duties require physical skills and emotional resilience (Lim & Moon, 2024; Needham et al., 2023; Park et al., 2024). Firefighters' occupational identity often centers on altruism, teamwork, and providing life-saving services (e.g., Richardson & James, 2017). This identity fosters the expression of empathy and reassurance, aligning with their frequent interactions with victims during emergencies. However, the voluntary nature of some firefighting roles adds complexity, particularly for those balancing firefighting with other employment, which can exacerbate stress and mental health challenges (Dias et al., 2023; Haski-Leventhal & McLeigh, 2009; Sowa, 2024).

Moreover, firefighters need to remain constantly alert and responsive to emergencies (Morman et al., 2020; Needham et al., 2023) and can lead to chronic stress (e.g., Hyun et al., 2020), necessitating quick adaptation to changing circumstances (Michinov, 2022). They are frequently exposed to traumatic situations (Bryant, 2022), which require effective emotion regulation to ensure their performance and the safety and well-being of those they assist (Park et al., 2024; Ryu et al., 2020). Firefighters' work engagement is often closely tied to the meaningfulness of their tasks and their perceived

impact on others' well-being (Roşca et al., 2021). While this sense of purpose can buffer against stress, it may also heighten the risk of burnout when challenges become overwhelming (Dias et al., 2023).

Suppressing negative emotions is crucial for firefighters to maintain calm during emergencies, reassure victims, and provide necessary support (Lim & Moon, 2024). However, these emotional demands can contribute to mental health conditions such as post-traumatic stress disorder (Shin et al., 2023), anxiety, depression, and burnout (Castellano et al., 2019; Dias et al., 2023).

Building on existing literature, this study seeks to explore key differences in emotional labor, occupational identity, and work engagement between police officers and firefighters. Emotional labor, encompassing both the demands faced and the strategies employed, is expected to differ due to the distinct emotional contexts and requirements of these occupations. Similarly, occupational identity, shaped by the unique values and roles of each occupation, is anticipated to vary between police officers and firefighters. Finally, since work engagement is closely tied to the nature of tasks and their meaningfulness, differences are also likely to emerge. Based on these considerations, we propose the following hypotheses:

H1a: There are differences in emotional labor (demands and strategies) between police officers and firefighters.

H1b: There are differences in occupational identity between police officers and firefighters.

H1c: There are differences in work engagement between police officers and firefighters.

The Interplay between Emotional Labor and Occupational Identity in First Responders

Occupational identity plays a key role in buffering the adverse effects of emotional labor. Research suggests that a strong occupational identity can mitigate the emotional toll often associated with high-stress professions like those of first responders (Ashforth & Humphrey, 1993). Since emotional control is central to the identity of first responders (Brotheridge & Lee, 2003; Mastracci & Adams, 2020), a well-developed occupational identity can enhance their ability to manage the emotional demands of their roles.

Research indicates that individuals with strong occupational identities are more inclined toward deep-acting rather than surface-acting strategies (Brotheridge & Lee, 2003), aligning their emotional expressions with role expectations (Ashforth & Humphrey, 1993) and reducing emotional strain. Conversely, surface-acting, which involves faking or suppressing genuine feelings, can lead to emotional exhaustion (Bhowmick & Mulla, 2016) and detachment (Lennie et al., 2020; Mastracci & Adams, 2020). Therefore, occupational identity acts as a valuable personal resource (Sluss & Ashforth, 2008) that supports resilience and authenticity (Ashforth & Humphrey, 1993), and reduces the risk of emotional exhaustion (van Gelderen et al., 2011). Moreover, a strong occupational identity is positively linked to emotional health, life satisfaction (Skorikov & Vondracek, 2011), and self-esteem (Machado, 2003), underscoring its role in promoting overall well-being. Based on these insights, we formulated the following hypotheses:

H2a: Demands to express positive emotions are positively associated with occupational identity among first responders.

H2b: Demands to suppress negative emotions are negatively associated with occupational identity among first responders.

H2c: Demands for emotional variety and intensity are negatively associated with occupational identity among first responders.

H2d: The use of deep-acting strategies is positively associated with occupational identity among first responders.

H2e: The use of surface-acting strategies is negatively associated with occupational identity among first responders.

The Interplay between Occupational Identity and Work Engagement in First Responders

Building on previous research, we examined the relationship between occupational identity (Britt, 2003; Zhang et al., 2018) and work engagement as key components of individual and workplace well-being (Schaufeli et al., 2002). Work engagement – a positive fulfilling, and meaningful work-related state of mind – is characterized by three main dimensions: vigor, reflecting energy, mental resilience, and motivation to invest effort in work; dedication, where individuals feel their work is significant, thrilling, and inspiring, and they take pride in it; and absorption, where individuals become deeply engrossed, often losing track of time due to intense focus.

Research highlights that both personal and work resources – such as occupational identity (Ashforth & Humphrey, 1993; Guedes et al., 2020) and support mechanisms (van Gelderen & Bik, 2016; Wolter et al., 2019) – are instrumental in fostering work engagement by helping individuals manage work-related demands effectively (Bakker, 2009). Engaged workers generally exhibit high identification with their work, energy (Schaufeli et al., 2002), self-efficacy, and job satisfaction (Zhang et al., 2018). They also seek feedback and support, cultivate social connections, and develop resources that enhance their work experience (Bakker, 2009).

High levels of organizational identification – where an individual's self-concept aligns closely with their organization's values – promote personal achievement and boost work engagement (Bhowmick & Mulla, 2016). When an individual's identity aligns with work values and goals, it strengthens work engagement, even in challenging situations (Britt, 2003). Studies demonstrate that individuals with a strong occupational identity tend to be more engaged at work (e.g., Hirschi, 2012; Theoharakis et al., 2024). Zhang et al. (2018) confirmed that occupational identity directly and positively influences work engagement.

Based on this evidence, we formulated the following hypothesis:

H3: Occupational identity is positively associated with work engagement among first responders.

The Interplay between Emotional Labor and Work Engagement in First Responders

Expressing positive emotions in the workplace has been shown to enhance various aspects of employee performance (Fredrickson, 2001), including job performance, self-efficacy (Bakker & Oerlemans, 2019), and work engagement (Gabriel et al., 2011). Ashforth and Humphrey (1993) argue that encouraging employees to express positive emotions boosts self-efficacy – the belief in one's ability to succeed in specific tasks (Bandura, 1977). This self-efficacy increase, in turn, fosters greater work engagement, where employees feel more connected to their tasks and motivated to excel in their roles (Brotheridge & Lee, 2003).

In contrast, negative emotions – such as anger and sadness – do not significantly predict work engagement. Castellano et al. (2019) found that although negative emotions are natural in the workplace, their impact on employee engagement is limited. Moreover, suppressing these negative emotions can lead to daily exhaustion and emotional fatigue (van Gelderen, 2011, 2017). Brotheridge and Grandey (2002) note that when employees suppress genuine feelings they may experience a disconnect between their true emotions and their outward expressions, leading to increased emotional labor and fatigue over time.

The choice of emotion regulation strategies also plays a key role in work engagement (van Gelderen et al., 2014). Deep-acting strategies, which involve aligning internal feelings with required emotional display (e.g., Morris & Feldman, 1996), are positively associated with greater work engagement (Basinska & Dăderman, 2019). Employees

who engage in deep-acting experience a sense of authenticity and satisfaction (Ashforth & Humphrey, 1993), enhancing their commitment and involvement in work (Bhowmick & Mulla, 2016). In contrast, surface-acting strategies – faking or suppressing emotions to meet workplace expectations (e.g., Brotheridge & Grandey, 2002) – are generally linked to lower engagement. Surface-acting often leads to emotional dissonance (van Gelderen et al., 2017), contributing to disengagement and workplace dissatisfaction (Hochschild, 1983).

In summary, fostering an environment that encourages positive emotional expression can improve professional performance (Humphrey et al., 2015) and increase work engagement (Oliveira et al., 2023). Conversely, suppressing negative emotions and relying on surface-acting strategies may detract from engagement and lead to emotional exhaustion (Schaible, 2006). Understanding these dynamics is essential for organizations seeking to enhance employee well-being and performance. Based on these insights, we propose the following hypotheses:

H4a: Demands to express emotions are positively associated with work engagement among first responders.

H4b: Demands to suppress negative emotions are negatively associated with work engagement among first responders.

H4c: Demands for emotional variety and intensity are negatively associated with work engagement among first responders.

H4d: The use of deep-acting strategies is positively associated with work engagement among first responders.

H4e: The use of surface-acting strategies is negatively associated with work engagement among first responders.

How Occupational Identity Mediates the Relationship between Emotional Labor and Work Engagement

The role of occupational identity as a mediator between emotional labor and work engagement among first responders remains underexplored, particularly in high-stress environments such as those experienced by first responders. Several studies have examined the interplay between these constructs in related contexts (Carvalho et al., 2024; Guedes et al., 2020; Oliveira et al., 2023). These studies build on Hochschild's (1983) seminal theory of emotional labor, which proposed that employees in service roles engage in emotional labor by regulating their emotions to align with organization expectations. This foundational framework has been extended by Brotheridge and Lee (2003), who explored how different emotional labor strategies – such as surface-acting and deep-acting – affect work outcomes like job satisfaction and work engagement. Although Hochschild's (1983) work initially focused on service professions, its applicability to first responders is increasingly recognized (e.g., Lennie et al., 2020; Park et al., 2024; van Gelderen et al., 2017). Accordingly, understanding how emotional labor intersects with occupational identity in this context is essential for improving both the resilience and engagement of first responders.

In a key study, Guedes et al. (2020) examined the role of occupational identity as a mediator between emotional labor – specifically positive emotional expression and deep-acting and surface-acting strategies – and work engagement. Conducted with 302 military police officers in Bahia, Brazil, their study found that a strong occupational identity was positively associated with job satisfaction and reduced stress and burnout. This underscores the critical role that occupational identity plays in fostering resilience and well-being, particularly in police settings. Moreover, their results revealed that occupational identity significantly mediated the relationship between emotional labor and work engagement, suggesting that a well-developed occupational identity may buffer the negative effects of emotional labor on work engagement and promote greater resilience. More recently, Carvalho et al. (2024) found that occupational identity can act as a protective factor, mitigating the adverse effects of emotional labor on work

engagement among police officers. They suggest that first responders with a well-integrated occupational identity may experience greater emotional resilience and sustained work engagement, despite the emotional challenges of their roles.

Building on these findings, Oliveira et al. (2023) extended the research to a larger sample of 924 police officers, demonstrating significant correlations between emotional labor, occupational identity, and work engagement. Their analysis explained 13.6% and 17.2% of the variance in occupational identity and work engagement, respectively, underscoring the interconnectedness of these constructs. These results suggest that emotional labor practices – both expressive and suppressive – are closely tied to officers' occupational identity and overall work engagement.

Adding to this, Ashforth and Humphrey (1993) highlighted the critical role of occupational identity in shaping emotional labor experiences. They argued that the alignment of emotional expressions with occupational roles significantly influences both emotional labor and work engagement. Their model suggests that individuals who perceive their emotional expressions as aligned with their occupational identity experience less strain and greater engagement. This perspective complements the findings of Hochschild (1983) and Brotheridge and Lee (2003), suggesting that a well-integrated occupational identity not only buffers the negative impact of emotional labor but also enhances an individual's ability to engage meaningfully with their work, highlighting the role of emotion regulation in the workplace.

Building on these insights, we propose the following hypotheses to explore the mediating role of occupational identity in the relationships between emotional labor (demands and strategies) and work engagement in first responders:

H5a: Occupational identity mediates the relationship between demands to express positive emotions and work engagement among first responders.

H5b: Occupational identity mediates the relationship between demands to suppress negative emotions and work engagement among first responders.

H5c: Occupational identity mediates the relationship between demands for emotional variety and intensity and work engagement among first responders.

H5d: Occupational identity mediates the relationship between the use of deep-acting strategies and work engagement among first responders.

H5e: Occupational identity mediates the relationship between the use of surface-acting strategies and work engagement among first responders.

Figure 1 illustrates the hypothesized relationships between the key variables under study.

Method

As part of a larger project examining the emotion regulation of first responders, this study examines the interplay between emotional labor, occupational identity, and work engagement among first responders, focusing specifically on police officers and firefighters. By analyzing occupational differences in emotional labor and exploring how occupational identity mediates the relationship between emotional labor and work engagement, this study aims to provide valuable insights into these high-demanding occupations. Understanding these dynamics can inform strategies for improving mental health, enhancing support systems, and optimizing work engagement in first responder roles, ultimately contributing to better well-being and performance in these critical occupations.

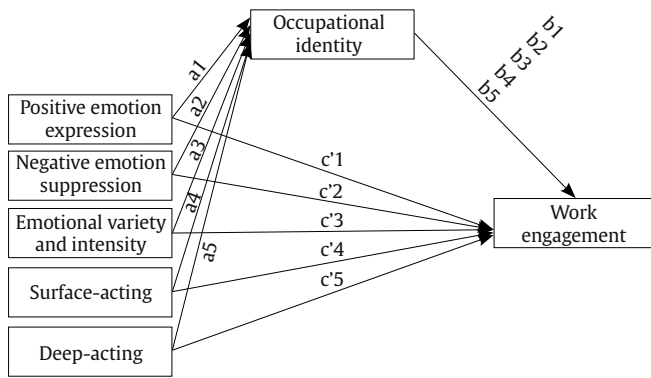


Figure 1. Hypothesized Mediation Model: Pathways from Emotional Labor (Demands and Strategies) to Work Engagement, Mediated by Occupational Identity.

Sample and Procedures

Two hundred and forty-eight individuals participated voluntarily in our study ($n_{\text{firefighters}} = 100, 40.3\%$; $n_{\text{police officers}} = 148, 59.7\%$), with an average age of 42.45 years ($SD = 9.756$). The sample was predominantly male ($n = 207, 83.5\%$), including 134 police officers (90.5% of police officers) and 73 firefighters (73% of firefighters), alongside female participants ($n = 41, 16.5\%$), comprising 14 female police officers (9.5% of police officers) and 27 firefighters (27% of firefighters). Regarding hierarchical categories, 29 are officials (11.7%), 32 chiefs (12.9%), and 187 operational officers (75.4%). These professionals have an average service seniority of 19.27 years ($SD = 10.017$). The majority completed high school ($N = 158, 63.7\%$), while 47 attended elementary school (18.9%) and 43 graduated in higher education (17.3%).

We used simple random sampling to constitute our sample (Hill & Hill, 2016). The inclusion criteria were being over 18 years old and an active firefighter or police officer. The exclusion criteria were failing to meet one of the inclusion criteria.

To translate and adapt the scales used, we followed Hill and Hill's (2016) recommendations: a) translating the scales into Portuguese, b) back-translating the items by a native expert in the original language, and c) comparing the two versions and discussing any discrepancies found. An expert committee comprising five professionals, including two psychologists and a police commander (a minimum experience in research of five years), completed the latter part using the think-aloud protocol (Jääskeläinen, 2010).

To ensure scale equivalency, we administered the pre-final version of the scales to a small sample of police officers and firefighters (about seven). We then conducted qualitative analyses to detect potential biases in the content of the items, drawing on Item Response Theory (Hambleton & Swaminathan, 1985). Specifically, we employed expert review involving a police commander and firefighter experts to verify the items' cultural, contextual, or linguistic equivalence (Hill & Hill, 2016). Additionally, we conducted interviews with the participants in two separate groups – one consisting of police officers and the other of firefighters. This allowed us to explore how the items and answers were understood and to identify any differences in the meanings attached to the items by members of these distinct occupational groups (Gondim, 2002). It is worth noting that these participants were not involved in the remaining study.

We converted the scales into a link on the LimeSurvey platform. Consequently, we contacted the participants online via the Portuguese Public Security Police's intranet and the fire department officials' email addresses, asking them to share the link internally. We performed statistical analysis for this phase, which we will describe below.

For this study, we followed the highest ethical standards for research involving human beings according to the Helsinki

Declaration. Following the local legislation and institutional requirements, the study protocol received approval from the Portuguese Public Security Police (Polícia de Segurança Pública) and Portuguese Fire Departments that agreed to participate in the study. Participants were fully informed about the study's objectives and procedures, and their consent was obtained before participation.

Instruments

We conducted a cross-sectional study, analyzing the various hypotheses we had formulated previously. For this purpose, we used a set of four self-response scales, such as the Emotional Labour Scale (ELS) (Brotheridge & Lee, 2003; adapted by Alves et al., 2017), the Emotion Work Requirements Scale (EWRS) (Best et al., 1997; adapted by Alves et al., 2017), the Utrecht Work Engagement Scale (UWES) (Schaufeli & Bakker, 2004; adapted by Sinval et al., 2018), and the Social Identity Scale (SIS) (Cameron, 2004; adapted by Nascimento & Souza, 2017) translated and adapted to the Portuguese context. Additionally, we used a sociodemographic questionnaire (e.g., gender, age, occupation) to characterize the sample.

The ELS (Brotheridge & Lee, 2003; adapted by Alves et al., 2017) measures both emotional labor strategies and emotion-related occupational demands, such as emotional diversity and intensity. This concise seven-item begins with the question, "In my work as a police officer/firefighter, how often...", followed by items addressing surface-acting (two items; e.g., "I hide my true feelings about a situation") and deep-acting strategies (two items; e.g., "I make an effort to feel the emotions that I need to display to others"), as well as emotional diversity and intensity demands (three items; e.g., "I express many different emotions"). Similarly, the EWRS (Best et al., 1997; adapted by Alves et al., 2017) measures how often employees are compelled to mask their emotions at work, i.e., the demands to express positive emotions and suppress negative emotions within their professional roles. This scale is also brief, with six items, and starts with the question "In my day-to-day work as a police officer/firefighter, how often I am asked or required...", followed by items measuring the demands to express positive emotions (three items; e.g., "to express sympathy") and suppress negative emotions (three items; e.g., "to hide my anger or disappointment"). Responses are specified based on the context: a) colleagues, b) superiors, and c) victims (Guedes et al., 2020). Both scales are closed-ended 5-point Likert scale ranging from 1 (*never*) to 5 (*always*). The ELS scale demonstrates acceptable internal consistency ($\alpha = .79$), while the EWRS presents excellent internal consistency ($\alpha = .92$) (Cronbach, 1951).

The UWES (Schaufeli & Bakker, 2004; adapted by Sinval et al., 2018) measures the three dimensions of work engagement: vigor (five items; e.g., "At my work, I feel bursting with energy"), dedication (five items; e.g., "I am enthusiastic about my job"), and absorption (six items; e.g., "Time flies when I am working"). We used the full 17-item version of the scale. This close-ended scale uses a 7-point Likert-type format, ranging from 0 (*never*) to 6 (*always [every day]*). The scale demonstrates excellent internal consistency, with a Cronbach's alpha of .95 (Cronbach, 1951).

The SIS (Cameron, 2004; adapted by Nascimento & Souza, 2017) measures the three dimensions of social identity: centrality (three items; e.g., "In general, being a police officer/firefighter is an important part of my self-image"), ingroup affect (three items; e.g., "I often regret that I am a police officer/firefighter"), and ingroup ties (three items; e.g., "I really 'fit in' with other police officers/firefighters"). This nine-item scale uses a close-ended 5-point Likert scale, ranging from 1 (*totally disagree*) to 5 (*totally agree*), with the items in the ingroup affect dimension reverse-scored. The scale presents good internal consistency, with a Cronbach's alpha of .84 (Cronbach, 1951).

Table 1. Differences in Emotional Labor (demands and strategies), Occupational Identity, and Work Engagement between Firefighters and Police Officers (*t*-test)

a) Emotional Labor																
	N	Positive Emotion Expression Demands					Negative Emotion Suppression Demands					Emotional Variety and Intensity Demands				
		M	SD	t	df	p	M	SD	t	df	p	M	SD	t	df	p
Occupation				3.291	199.341	.001			0.792	211.147	.429			1.374	246	.171
Firefighters	100	3.98	.740				3.30	0.956				2.87	.965			
Police Officers	148	3.69	.676				3.20	0.946				2.71	.802			
b) Occupational Identity and Work Engagement																
	N	Occupational Identity					Work Engagement									
		M	SD	t	df	p	M	SD	t	df	p					
Occupation				3.795	246	<.001			6.724	345.244	<.001					
Firefighters	100	4.15	.634				4.72	0.751								
Police Officers	148	3.83	.688				3.89	1.179								

Data Analyses

We conducted all statistical analyses using IBM SPSS Statistics, version 29.0 (IBM Corp, 2022). To test hypothesis H1, we employed the independent samples *t*-test. The assumptions of normality and homogeneity of variances were assessed and confirmed through the Shapiro-Wilk test ($p > .05$) and Levene’s test ($p > .05$) (Howell, 2002). Additionally, we conducted reliability analyses for each scale used and performed descriptive analyses to characterize the sample.

For the mediation analyses, we employed the Process macro for this IBM SPSS Statistics (Hayes, 2017), verifying all assumptions for multiple linear regression before conducting the analyses. We performed Pearson’s correlations and multiple linear regression to explore the relationships between the variables under study (hypotheses H2a, H2b, H2c, H2d, H2e, H3, H4a, H4b, H4c, H4d, and H4e). The correlation results were analyzed following Cohen’s (1992) guidelines for interpreting effect sizes. Simple mediation with multiple independent variables was applied to test hypotheses H5a, H5b, H5c, H5d, and H5e, with mediation effects assessed via the significance of the indirect effect ($a \times b$) using bootstrapping, as recommended by Hayes (2017), which does

not require the individual paths significance (a or b). To prevent competition among independent variables in explaining variance in the moderator and dependent variables, we employed model 4 with bootstrapping at 95% confidence intervals for the indirect effect. Finally, we conducted multiple linear regression analyses to examine the direct effects of emotional labor (demands and strategies) on work engagement, independent of occupational identity.

Results

Comparative Analyses

Table 1 shows the results of independent sample *t*-tests comparing police officers and firefighters. Significant differences were observed for positive emotion expression demands, where firefighters reported higher levels ($M = 3.98, SD = .740$) compared to police officers, $M = 3.69, SD = .676, t_{(199,341)} = 3.291, p = .001$. Firefighters also exhibited significantly higher occupational identity ($M = 4.15, SD = .634$) and work engagement ($M = 4.72, SD =$

Table 2. Mean, Standard Deviation, and Correlations between Emotional Labor Dimensions, Occupational Identity, and Work Engagement

Variables	First Responders																		
	M	SD	1	2	3	4	5	6	7										
1. Work engagement	4.226	1.103	-																
2. Occupational identity	3.958	0.685	.710**	-															
3. Positive emotion expression	2.774	0.873	.153*	.121	-														
4. Negative emotion suppression	3.802	0.717	-.101	-.172**	.460**	-													
5. Emotional variety and intensity	3.243	0.950	.079	.052	.247**	.146*	-												
6. Deep-acting	3.294	0.941	.070	.096	.331**	.189**	.432**	-											
7. Surface-acting	3.210	0.968	-.152*	-.137*	.195**	.455**	.379**	.350**	-										
Variables	Police Officers					Firefighters													
	M	SD	1	2	3	4	5	6	7	M	SD	1	2	3	4	5	6	7	
1. Work engagement	3.894	1.179	-							4.718	0.751	-							
2. Occupational identity	3.826	0.688	.748**	-						4.153	0.634	.576**	-						
3. Positive emotion expression	3.679	0.676	-.018	-.011	-					3.983	0.740	.310**	.204*	-					
4. Negative emotion suppression	3.203	0.946	-.197*	-.253**	.512**	-				3.301	0.956	.019	-.088	.393**	-				
5. Emotional variety and intensity	2.712	0.802	.047	.069	.150	.088	-			2.867	0.965	.062	-.016	.331**	.210*	-			
6. Deep-acting	3.213	0.917	-.003	.013	.226**	.187*	.357**	-		3.415	0.967	.116	.167	.435**	.183	.511**	-		
7. Surface-acting	3.240	0.943	-.189*	-.228**	.236**	.485**	.197*	.352**	-	3.165	1.008	-.072	.011	.171	.421**	.601**	.362**	-	

Note. N = 248 first responders (n = 100 for firefighters and n = 148 for police officers). * $p < .05$, ** $p < .01$ (2-tailed).

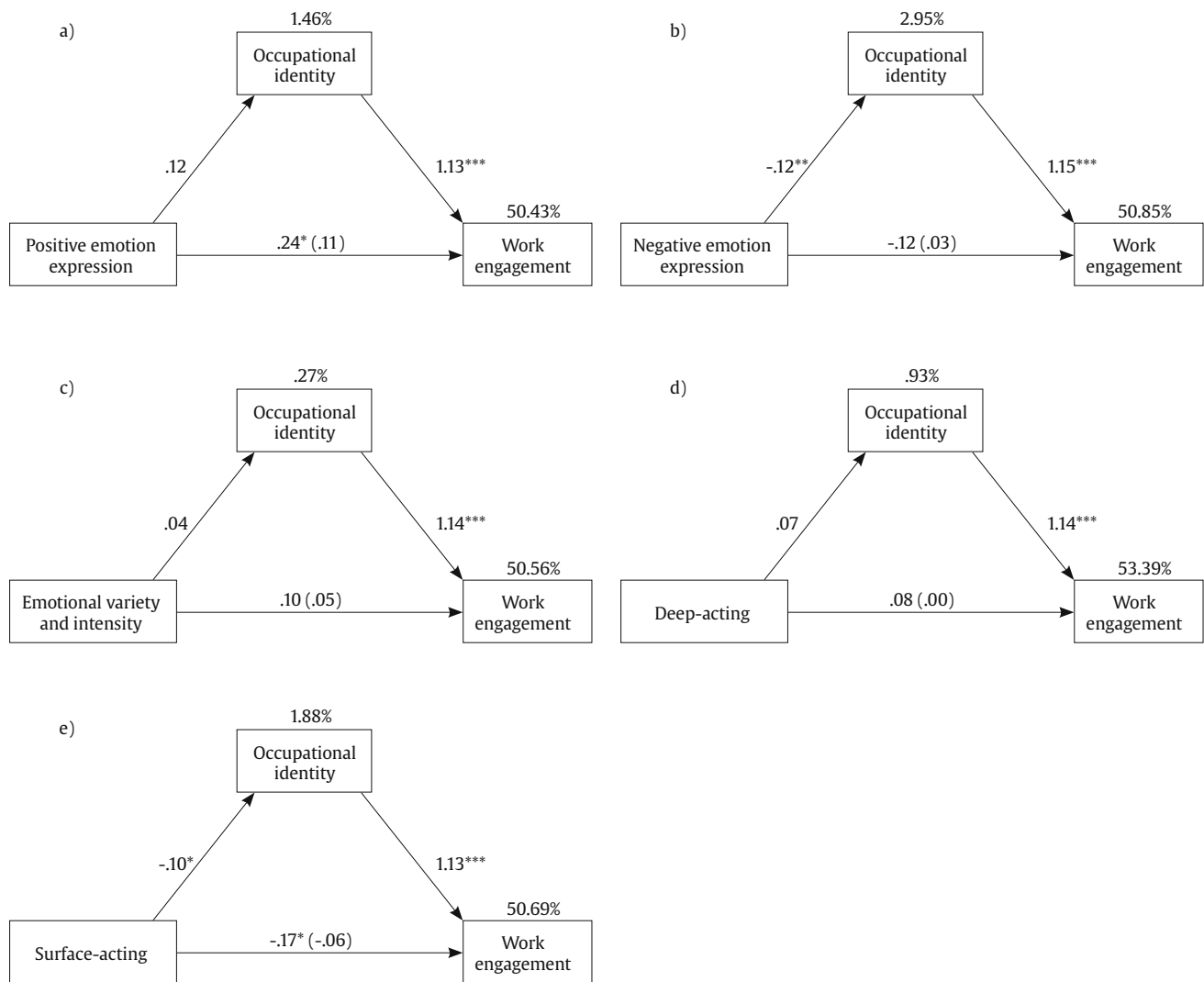


Figure 2. Simple Mediation Models of Occupational Identity on the Relationship Between Emotional Labor Dimensions and Work Engagement in First Responders: a) Positive Emotion Expression; b) Negative Emotion Suppression; c) Emotional Variety and Intensity; d) Deep-acting; e) Surface-acting. $N = 248$ first responders ($n = 100$ for firefighters and $n = 148$ for police officers). * $p < .05$, ** $p < .01$, *** $p < .001$.

.751) than police officers ($M = 3.83$, $SD = .688$; $M = 3.89$, $SD = 1.179$, respectively), with $t_{(246)} = 3.3795$, $p < .001$ for occupational identity and $t_{(345,244)} = 6.724$, $p < .001$ for work engagement. No significant differences were found for other emotional labor demands and strategies. These results partially support hypothesis $H1a$, and fully support hypotheses $H1b$ and $H1c$.

Correlational Analysis

As shown in Table 2, work engagement exhibited a strong positive correlation with occupational identity across the sample ($r = .710$, $p < .01$). Positive emotion expression demands were positively correlated with work engagement ($r = .153$, $p < .05$). Surface-acting strategies were negatively correlated with both work engagement ($r = -.152$, $p < .05$) and occupational identity ($r = -.137$, $p < .05$).

Police officers followed similar patterns, with strong correlations between work engagement and occupational identity ($r = .748$, $p < .01$), negative correlations between negative emotion suppression

demands and both work engagement ($r = -.197$, $p < .05$) and occupational identity ($r = -.253$, $p < .01$), and negative correlations between surface-acting strategies and both work engagement ($r = -.189$, $p < .05$) and occupational identity ($r = -.228$, $p < .01$). Firefighters also demonstrated a strong and positive correlation between occupational identity ($r = .204$, $p < .05$) and work engagement ($r = .576$, $p < .01$), and positive correlations between positive emotion expression demands and both work engagement ($r = .310$, $p < .01$) and occupational identity ($r = .204$, $p < .05$). Non-significant correlations were observed for the other variables.

These findings support hypotheses $H2a$, $H2e$, $H3$, $H4b$, and $H4e$, but not $H2b$, $H2c$, $H2d$, $H4a$, $H4c$, or $H4d$.

Regression and Mediation Analyses

We present multiple linear regression results and simple mediation analyses for each emotional labor dimension, revealing distinct patterns across first responders and within subgroups of police officers and firefighters (Figures 2-4; Tables 3-4).

Table 3. Multiple Regression Coefficients for the Effect of Emotional Labor (demands and strategies) on a) Occupational Identity; b) Work Engagement

a) Occupational Identity	First Responders					Police Officers					Firefighters				
	B	SE	β	t	p	B	SE	β	t	p	B	SE	β	t	p
Positive Emotion Expression	.204	.070	.213	2.925	.004	.137	.095	.134	1.431	.155	.241	.102	.281	2.361	.020
Negative Emotion Suppression	-.173	.055	-.240	-3.134	.002	-.187	.075	-.257	-2.497	.014	-.159	.078	-.240	-2.043	.044
Emotional Intensity and Variety	.029	.056	.037	0.520	.603	.072	.073	.084	0.981	.328	-.146	.089	-.222	-1.633	.106
Deep-acting	.070	.052	.096	1.339	.182	.046	.067	.062	0.686	.494	.098	.079	.150	1.243	.217
Surface-acting	-.083	.053	-.177	-1.550	.122	-.126	.070	-.173	-1.808	.073	.090	.085	.142	1.055	.294
b) Work Engagement	First Responders					Police Officers					Firefighters				
	B	SE	β	t	p	B	SE	β	t	p	B	SE	β	t	p
Positive Emotion Expression	.329	.113	.214	2.921	.004	.164	.167	.094	0.980	.329	.351	.120	.346	2.921	.004
Negative Emotion Suppression	-.162	.090	-.140	-1.812	.071	-.233	.131	-.187	-1.774	.078	-.058	.092	-.074	-0.631	.529
Emotional Intensity and Variety	.119	.090	.094	1.319	.188	.095	.128	.065	0.740	.461	.027	.105	.034	0.255	.799
Deep-acting	.057	.085	.048	0.670	.504	.051	.118	.040	0.435	.665	.004	.093	.005	0.043	.966
Surface-acting	-.208	.086	-.182	-2.405	.017	-.185	.122	-.148	-1.510	.133	-.092	.100	-.123	-0.915	.362

Note. N = 248 first responders (n = 100 for firefighters and n = 148 for police officers).

Table 4. Summary of the Simple Mediation Model for Each Emotional Labor Demand (positive emotion expression, negative emotion suppression, and emotional intensity and variety) and Strategy (surface- and deep-acting)

a) Positive Emotion Expression	First Responders						Police Officers						Firefighters						
	B	SE	t	p	LLCI	ULCI	B	SE	t	p	LLCI	ULCI	B	SE	t	p	LLCI	ULCI	
Direct and total effects																			
Effect X-M (a): Positive emotion expression on Occupational identity	0.115	.060	1.908	.058	-.004	.234	-0.012	.084	-0.137	.891	-.178	.155	.174	.085	2.060	.042	.006	.342	
Effect M-Y controlling for X (b): Occupational identity on Work engagement	1.131	.073	15.549	<.001	.987	1.274	1.282	.094	13.573	<.001	1.095	1.468	.633	.098	6.496	<.001	.440	.827	
Direct Effect c' X-Y considering Occupational identity	0.106	.069	1.524	.129	-.031	.243	-0.016	.096	-0.165	.869	-.206	.174	.204	.084	2.444	.016	.038	.370	
Total effect c X-Y: Positive emotion expression on Work engagement	0.236	.097	2.436	.016	.045	.427	-0.031	.144	-0.212	.832	-.316	.255	.314	.097	3.228	.002	.121	.508	
Bootstrap for indirect effect: Occupational identity	0.130	.080			-.019	.293	-0.015	.136			-.274	.263	.110	.059			.020	.251	
b) Negative Emotion Suppression	First Responders						Police Officers						Firefighters						
	B	SE	t	p	LLCI	ULCI	B	SE	t	p	LLCI	ULCI	B	SE	t	p	LLCI	ULCI	
Direct and Total Effects																			
Effect X-M (a): Negative emotion suppression on Occupational identity	-0.124	.045	-2.736	.007	-.213	-.035	-0.184	.058	-3.159	.002	-.299	-.069	-.058	.678	-0.876	.383	-.191	.074	
Effect M-Y controlling for X (b): Occupational identity on Work engagement	1.150	.074	15.627	<.001	1.005	1.295	1.278	.098	13.097	<.001	1.085	1.471	.689	.098	7.006	<.001	.494	.885	
Direct Effect c' X-Y considering Occupational identity	0.025	.053	0.468	.640	-.080	.129	-0.011	.071	-0.149	.882	-.151	.130	.055	.065	0.843	.401	-.074	.185	
Total effect c X-Y: Negative emotion suppression on Work engagement	-0.118	.074	-1.596	.112	-.263	.028	-0.246	.101	-2.429	.016	-.445	-.046	.015	.079	0.186	.853	-.143	.172	
Bootstrap for indirect effect: Occupational identity	-0.142	.061			-.268	-.029	-0.235	.091			-.428	-.062	-.040	.044			-.127	.052	
c) Emotional Intensity and Variety	First Responders						Police Officers						Firefighters						
	B	SE	t	p	LLCI	ULCI	B	SE	t	p	LLCI	ULCI	B	SE	t	p	LLCI	ULCI	
Direct and total effects																			
Effect X-M (a): Emotional intensity an variety on Occupational identity	0.041	.050	0.813	.417	-.058	.139	0.059	.071	0.837	.404		-.081	.199	-.011	.066	-0.162	.871	-.142	.121
Effect M-Y controlling for X (b): Occupational identity on Work engagement	1.140	.073	15.733	<.001	.998	1.283	1.282	.095	13.548	<.001	1.095	1.469	.683	.098	6.973	<.001	.489	.878	
Direct Effect c' X-Y considering Occupational identity	0.053	.057	0.932	.352	-.059	.165	-0.006	.081	-0.078	.938	-.167	.154	.056	.064	0.868	.388	-.072	.184	
Total effect c X-Y: Emotional intensity and variety on Work engagement	0.099	.080	1.236	.218	-.059	.258	0.070	.122	0.574	.567	-.170	.310	.049	.078	0.618	.538	-.108	.204	
Bootstrap for indirect effect: Occupational identity	0.046	.063			-.075	.174	0.076	.105			-.127	.282	-.007	.045			-.098	.081	

Table 4. Summary of the Simple Mediation Model for Each Emotional Labor Demand (positive emotion expression, negative emotion suppression, and emotional intensity and variety) and Strategy (surface- and deep-acting) (continued)

d) Deep-acting	First Responders						Police Officers						Firefighters					
	B	SE	t	p	LLCI	ULCI	B	SE	t	p	LLCI	ULCI	B	SE	t	p	LLCI	ULCI
Direct and Total Effects																		
Effect X-M (a): Deep-acting on Occupational identity	0.070	.046	1.516	.131	-.021	.161	0.010	.062	0.158	.875	-.113	.133	.110	.065	1.678	.097	-.020	.239
Effect M-Y controlling for X (b): Occupational identity on Work engagement	1.144	.073	15.699	<.001	1.000	1.287	1.282	.094	13.579	<.001	1.095	1.469	.678	.100	6.798	<.001	.480	.876
Direct Effect c' X-Y considering Occupational identity	0.002	.053	0.030	.976	-.106	.106	-0.016	.071	-0.224	.823	-.156	.124	.016	.065	0.237	.813	-.114	.145
Total effect c X-Y: Deep-acting on Work engagement	0.082	.075	1.094	.275	-.065	.229	-0.003	.106	-0.031	.975	-.214	.207	.090	.078	1.152	.252	-.065	.244
Bootstrap for indirect effect: Occupational identity	0.080	.056			-.031	.161	0.013	.087			-.162	.176	.074	.050			-.010	.186
e) Surface-acting	First Responders						Police Officers						Firefighters					
Direct and Total Effects	B	SE	t	p	LLCI	ULCI	B	SE	t	p	LLCI	ULCI	B	SE	t	p	LLCI	ULCI
Effect X-M (a): Surface-acting on Occupational identity	-0.097	.045	-2.174	.031	-.185	-.009	-0.166	.059	-2.824	.005	-.282	-.050	.007	.064	0.108	.914	-.119	.133
Effect M-Y controlling for X (b): Occupational identity on Work engagement	1.132	.073	15.505	<.001	.988	1.275	1.274	.097	13.143	<.001	1.082	1.465	.683	.098	6.975	<.001	.489	.877
Direct Effect c' X-Y considering Occupational identity	-0.063	.052	-1.222	.223	-.165	.039	-0.025	.071	-0.358	.721	-.165	.115	-.058	.062	-0.949	.345	-.181	.064
Total effect c X-Y: Surface-acting on Work engagement	-0.173	.072	-2.408	.017	-.314	-.032	-0.237	.102	-2.331	.021	-.438	-.036	-.054	.075	-0.716	.476	-.203	.095
Bootstrap for indirect effect: Occupational identity	-0.110	.061			-.238	.006	-0.212	.089			-.392	-.037	.005	.043			-.080	.087

Note. N = 248 first responders (n = 100 for firefighters and n = 148 for police officers). The data are reported in non-standardized B coefficients based on a 5,000 bootstraps sample size. SE = standard error; LLCI = lower limit confidence interval; ULCI = upper limit confidence interval (bias-corrected bootstrap confidence interval 95%). p < .01.

All Participants

Across all participants (Figure 2a; Tables 3-4), positive emotion expression demands and occupational identity together explained 50.85% of the variance in work engagement: $F_{(2, 245)} = 126.76, p < .001$. When controlling for positive emotion expression demands, occupational identity significantly predicted work engagement ($b = 1.13, p < .001$). Similarly, positive emotion expression demands significantly predicted work engagement when controlling for occupational identity ($\beta = .33, p < .05; c = .24, p < .05$). No partial or full mediation effect of occupational identity was observed in the relationship between positive emotion expression demands and work engagement (direct effect: $c' = .11, p > .05$; indirect effect = .13, CI 95% [-.019, .293]), respectively, not supporting hypothesis H5a.

Negative emotion suppression demands (Figure 2b; Tables 3-4) accounted for 2.95% of the variance in occupational identity, $F_{(1, 246)} = 7.48, p < .05$, and together with occupational identity explained 50.43% of the variance in work engagement, $F_{(2, 245)} = 124.64, p < .001$. Regression analyses indicated that negative emotion suppression demands significantly predicted occupational identity ($\beta = -.17, p < .05; a = -.12, p < .05$), indicating a negative relationship; occupational identity significantly predicted work engagement when controlling for negative emotion suppression demands ($b = 1.15, p < .001$). A full mediation effect of occupational identity was observed in the relationship between negative emotion suppression demands and work engagement (indirect effect = -.14, CI 95% [-.268, -.029]), supporting hypothesis H5b.

Emotional variety and intensity demands (Figure 2c; Tables 3-4) and occupational identity explained 50.56% of the variance in work engagement, $F_{(2, 245)} = 125.29, p < .001$. Regression analyses indicated that only occupational identity significantly predicted work engagement when controlling for these demands ($b = 1.14, p$

< .001). No partial or full mediation effect of occupational identity was observed in the relationship between emotional variety and intensity demands and work engagement (direct effect: $c' = .05, p > .05$; indirect effect = .05, CI 95% [-.075, .174]), respectively, not supporting hypothesis H5c.

Deep-acting strategies (Figure 2d; Tables 3-4), along with occupational identity, explained 50.39% of the variance in work engagement, $F_{(2, 245)} = 124.41, p < .001$. Regression analyses indicated that only occupational identity significantly predicted work engagement when controlling for deep-acting strategies ($b = 1.14, p < .001$). No partial or full mediation effect of occupational identity was found in the relationship between deep-acting strategies and work engagement (direct effect: $c' = .00, p > .05$; indirect effect = .08, CI 95% [-.031, .161]), respectively, not supporting hypothesis H5d.

Surface-acting demands (Figure 2e; Tables 3-4) explained 1.88% of the variance in occupational identity, $F_{(1, 246)} = 4.73, p < .05$, and together with occupational identity, explained 50.69% of the variance in work engagement, $F_{(2, 245)} = 125.92, p < .001$. Regression analyses showed that surface-acting strategies significantly predicted occupational identity ($\beta = -.21, p < .05; a = -.10, p < .05$); occupational identity significantly predicted work engagement when controlling for surface-acting strategies ($b = 1.13, p < .001$); and surface-acting strategies did not directly predict work engagement ($c' = -.06, p > .05$), although a significant total effect was observed ($c = -.17, p < .04$), indicating a partial mediation effect, partially supporting hypothesis H5e.

Police Officers

Positive emotion expression demands (Figure 3a; Tables 3-4) and occupational identity explained 55.97% of the variance in

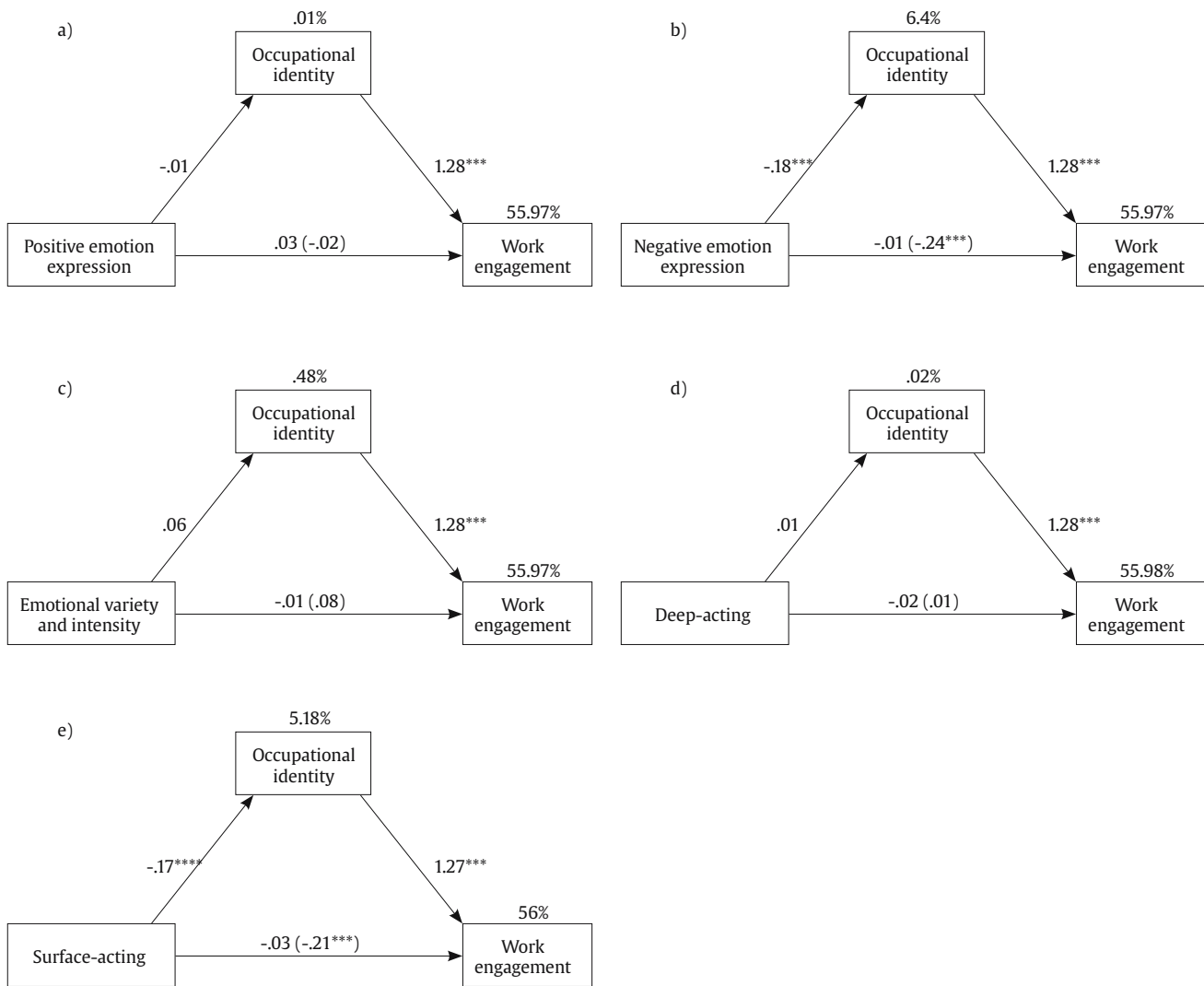


Figure 3. Simple Mediation Models of Occupational Identity on the Relationship Between Emotional Labor Dimensions and Work Engagement in Police Officers: a) Positive Emotion Expression; b) Negative Emotion Suppression; c) Emotional Variety and Intensity; d) Deep-acting; e) Surface-acting. $n = 148$ police officers
* $p < .05$, ** $p < .01$, *** $p < .001$.

work engagement, $F_{(2, 145)} = 92.17$, $p < .001$. Regression analyses showed that only occupational identity significantly predicted work engagement ($b = 1.28$, $p < .001$), when controlling for positive emotion expression demands. No partial or full mediation effect of occupational identity was found in the relationship between positive emotion expression demands and work engagement (direct effect: $c' = -.02$, $p > .05$; indirect effect = $-.02$, CI 95% [-.278, .258], respectively), not supporting hypothesis H5a.

Negative emotion suppression demands (Figure 3b; Tables 3-4) explained 2.95% of the variance in occupational identity, $F_{(1, 146)} = 9.98$, $p < .05$, and together with occupational identity, explained 55.97% of the variance in work engagement, $F_{(2, 145)} = 92.16$, $p < .001$. Regression analyses showed that negative emotion suppression demands significantly predicted occupational identity ($\beta = -.19$, $p < .05$; $a = -.18$, $p < .05$); occupational identity significantly predicted work engagement when controlling for negative emotion suppression demands ($b = 1.28$, $p < .001$); and the total effect of negative emotion suppression on work engagement was significant ($c = -.25$, $p < .05$), with a full mediation effect of occupational identity on this relationship (indirect effect = $-.24$, CI 95% [-.428, -.062]), supporting hypothesis H5b.

Emotional variety and intensity demands (Figure 3c; Tables 3-4), along with occupational identity, explained 55.97% of the variance in work engagement, $F_{(2, 145)} = 92.15$, $p < .001$. Regression analyses indicated that only occupational identity significantly predicted work engagement when controlling for these demands ($b = 1.28$, $p < .001$). No partial or full mediation effect of occupational identity was observed in the relationship between emotional variety and intensity demands and work engagement (direct effect: $c' = -.01$, $p > .05$; indirect effect = $.08$, CI 95% [-.127, .282], respectively), not supporting hypothesis H5c.

Deep-acting strategies (Figure 3d; Tables 3-4), along with occupational identity, explained 55.98% of the variance in work engagement, $F_{(2, 145)} = 92.20$, $p < .001$. Regression analyses indicated that only occupational identity significantly predicted work engagement when controlling for deep-acting strategies ($b = 1.28$, $p < .001$). No partial or full mediation effect of occupational identity was found in the relationship between deep-acting strategies and work engagement (direct effect: $c' = -.02$, $p > .05$; indirect effect = $.01$, CI 95% [-.162, .176], respectively), not supporting hypothesis H5d.

For police officers, surface-acting strategies (Figure 3e; Tables 3-4) explained 5.18% of the variance in occupational identity, $F_{(1, 146)}$

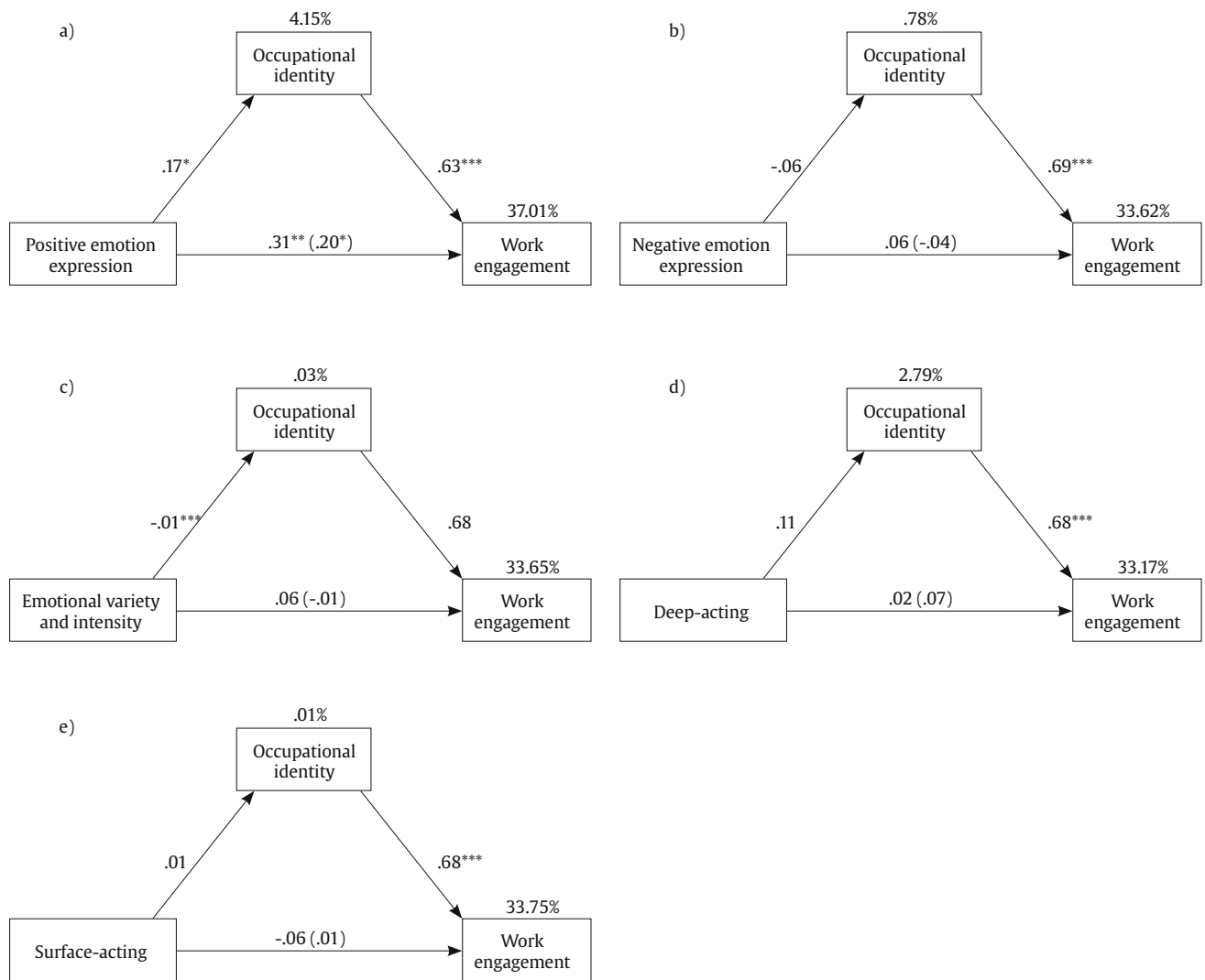


Figure 4. Simple Mediation Models of Occupational Identity on the Relationship Between Emotional Labor Dimensions and Work Engagement in Firefighters: a) Positive Emotion Expression; b) Negative Emotion Suppression; c) Emotional Variety and Intensity; d) Deep-acting; e) Surface-acting. $n = 100$ firefighters. * $p < .05$, ** $p < .01$, *** $p < .001$.

= 7.95, $p < .05$, and together with occupational identity, explained 56% of the variance in work engagement, $F_{(2, 145)} = 92.28$, $p < .001$. Regression analyses revealed that surface-acting strategies significantly predicted occupational identity ($a = -.17$, $p < .05$); occupational identity significantly predicted work engagement when controlling for surface-acting strategies ($b = 1.27$, $p < .001$); and surface-acting strategies did not directly predict work engagement ($c' = -.03$, $p > .05$), although a significant total effect was observed ($c = -.24$, $p < .05$). A full mediation effect of occupational identity was found in the relationship between surface-acting strategies and work engagement (indirect effect = $-.21$, CI 95% [$-.392$, $-.037$]), supporting hypothesis H5e.

Firefighters

Positive emotion expression demands (Figure 4a; Tables 3-4) explained 4.15% of the variance in occupational identity, $F_{(1, 98)} = 4.24$, $p < .05$, and together with occupational identity, explained 37.01% of the variance in work engagement, $F_{(2, 97)} = 28.50$, $p < .001$. Regression analyses indicated that positive emotion expression demands significantly predicted occupational identity ($\beta = .28$, $p <$

$.05$; $a = .17$, $p < .05$); and occupational identity significantly predicted work engagement ($b = .63$, $p < .001$). A partial and full mediation of occupational identity was observed in the relationship between positive emotion expression demands and work engagement (direct effect: $c' = .21$, $p < .05$; indirect effect = $.11$, CI 95% [$.018$, $.248$]), respectively), supporting H5a.

Negative emotion suppression demands (Figure 4b; Tables 3-4), together with occupational identity, explained 33.62% of the variance in work engagement, $F_{(2, 97)} = 24.56$, $p < .001$. Regression analyses showed that only occupational identity significantly predicted work engagement when controlling for negative emotion suppression demands ($b = 0.69$, $p < .001$). No partial or full mediation effect of occupational identity was found in the relationship between negative emotion suppression demands and work engagement (direct effect: $c' = .05$, $p > .05$; indirect effect = $-.04$, CI 95% [$-.127$, $.052$]), respectively), not supporting hypothesis H5b.

Emotional variety and intensity demands (Figure 4c; Tables 3-4), together with occupational identity, explained 33.65% of the variance in work engagement: $F_{(2, 97)} = 24.60$, $p < .001$. Regression analyses indicated that only occupational identity significantly

predicted work engagement when controlling for emotional variety and intensity demands ($b = 0.68, p < .001$). No partial or full mediation effect of occupational identity was found in the relationship between emotional variety and intensity demands and work engagement (direct effect: $c' = .06, p > .05$; indirect effect = $-.01, CI\ 95\% [-.098, .081]$, respectively), not supporting hypothesis *H5c*.

Deep-acting strategies (Figure 4d; Tables 3-4), together with occupational identity, explained 33.17% of the variance in work engagement, $F_{(2, 97)} = 24.07, p < .001$. Regression analyses showed that only occupational identity significantly predicted work engagement when controlling for deep-acting strategies ($b = 0.68, p < .001$). No partial or full mediation effect of occupational identity was found in the relationship between deep-acting strategies and work engagement (direct effect: $c' = .02, p > .05$; indirect effect = $.07, CI\ 95\% [-.010, .186]$, respectively), not supporting hypothesis *H5d*.

Surface-acting strategies (Figure 4e; Tables 3-4), together with occupational identity, explained 33.75% of the variance in work engagement, $F_{(2, 97)} = 24.71, p < .001$. Regression analyses revealed that only occupational identity significantly predicted work engagement when controlling for surface-acting strategies ($b = 0.68, p < .001$). No partial or full mediation effect of occupational identity was observed in the relationship between surface-acting strategies and work engagement (direct effect: $c' = -.06, p > .05$; indirect effect = $.01, CI\ 95\% [-.080, .087]$), not supporting hypothesis *H5e*.

The results indicate the following outcomes for the hypothesized mediation effects of occupational identity. Hypothesis *H5a* was partially supported, with evidence of mediation observed exclusively among firefighters. Hypothesis *H5b* was supported for the overall sample and police officers, but not supported for firefighters. Hypotheses *H5c* and *H5d* were not supported across all groups. Hypothesis *H5e* was partially supported for the overall sample, fully supported for police officers, and not supported for firefighters. In summary, the mediation role of occupational identity varied by both emotional labor demands and the participant group, highlighting significant group-specific dynamics in the relationship between emotional labor and work engagement.

Discussion

The findings of this study provide valuable insights into the interplay between emotional labor, occupational identity, and work engagement among first responders, focusing on differences between police officers and firefighters.

Consistent with prior literature, firefighters reported significantly higher demands for positive emotional expression than police officers. This supports previous research highlighting the emotional challenges faced by firefighters, where emotional labor is often more visible and intense due to the high-stress and public-facing nature of their work (Grandey, 2003; SAMHSA, 2018). Firefighters are often expected to display positive emotions when assisting or rescuing individuals (Al-Shaqsi, 2010; Meneghini et al., 2024), while police officers are more likely to regulate emotions to maintain authority in tense scenarios (Bakker & Heuven, 2006).

Firefighters also exhibited higher levels of occupational identity and work engagement, reflecting the strong connection between these constructs (Bakker et al., 2008). This highlights the importance of understanding how profession-specific demands shape emotional experiences and employee engagement and of tailoring occupation-specific interventions of each occupation (Au et al., 2019; Miller-Fox, 2018). Interestingly, no significant differences emerged for other emotional labor demands or strategies, suggesting that while positive emotional expression

varies, other facets of emotional labor, such as deep-acting or emotional intensity, may be similarly experienced across these roles. This contrasts with earlier findings that emotional labor strategies differ by occupation (Hochschild, 1983).

Correlational Analyses

Across the sample, work engagement positively correlated with occupational identity, consistent with research showing a strong occupational identity fosters energy (Chang et al., 2022) and commitment to job duties (Zhang et al., 2018). Team belongingness also enhanced engagement, reinforcing how identification with one's role and team can buffer the challenges of high-stress environments (Bernabé et al., 2016), even under unfavorable conditions (Britt, 2003). Emotional labor demands, specifically positive emotion expression demands, were linked to increased work engagement, suggesting that such demands, despite their challenges, provide first responders with resources to manage stress and maintain engagement (e.g., Gross, 1998; Sloan, 2014).

In the firefighters' group, positive emotion expression demands correlated with both occupational identity and work engagement. This aligns with studies indicating that emotional expression can foster social cohesion and personal fulfillment (Park et al., 2024), particularly in team-oriented environments like firefighting occupations (Llorens et al., 2022; Richardson & James, 2017), reinforcing firefighters' identity (Humphrey et al., 2015).

For police officers, negative emotion suppression demands and surface-acting strategies correlated negatively with both work engagement and occupational identity. These results are consistent with Oliveira et al.'s (2023) findings. Suppressing or faking emotions requires considerable energy (Brotheridge & Grandey, 2002; Morris & Feldman, 1996), depleting individual cognitive resources (Cheung & Tang, 2010; Schaufeli et al., 2002). As a result, psychological stress can arise (Gross & Levenson, 1997), such as emotional exhaustion and reduced occupational identity (Brotheridge & Lee, 2003). Despite individuals' negative emotions being less displayed, they can keep experiencing them and sometimes have more difficulty in suppressing their inner feelings (Gross, 1998; Levy-Gigi et al., 2016). Surface-acting can intensify emotional dissonance and detachment from one's authentic self (e.g., Arjmand et al., 2024), hindering response predictability and engagement (Mastracci & Adams, 2020).

Regression and Mediation Analyses

The regression and mediation analyses provided further evidence of the distinct roles emotional labor plays in shaping work engagement through occupational identity. Specifically, *H5a* (occupational identity mediates the relationship between demands to express positive emotions and work engagement among first responders) was partially supported only among firefighters. This suggests that, for firefighters, the demands to express positive emotions might be internalized through occupational identity, influencing their work engagement. This finding aligns with previous work showing that emotional labor in service-oriented professions can enhance occupational identity and commitment, ultimately fostering work engagement (Cropanzano et al., 2003). It is worth noting that volunteer status emerged as a significant factor for firefighters, suggesting that those in volunteer roles may experience different emotional labor dynamics compared to their paid counterparts (Haski-Leventhal & McLeigh, 2009; Sowa, 2024). Further research is needed to explore how these roles interact with emotional labor and engagement.

H5b, which posited that occupational identity would mediate the relationship between negative emotion suppression demands and work engagement, was supported for the overall sample and police officers' group. This is consistent with studies indicating that

emotional suppression is detrimental to emotional well-being and work engagement, with occupational identity serving as a mediating mechanism (Carvalho et al., 2024). However, the lack of support for this mediation among firefighters may point to profession-specific emotion regulation mechanisms, where firefighters might not experience the same negative effects of emotional suppression due to different work demands or social structures (e.g., team-oriented environments that mitigate the impact of emotional suppression) (Llorens et al., 2022; Park et al., 2024).

On the other hand, *H5c* and *H5d*, related to emotional variety and intensity demands and deep-acting strategies, were not supported across all groups, indicating that these emotional labor dimensions may not significantly influence work engagement through occupational identity. These findings are consistent with those observed by Carvalho et al. (2024) with a sample of police officers. It is possible that, for both police officers and firefighters, deep-acting strategies and emotional variety and intensity demands may not be as prevalent or impactful as other forms of emotional labor, such as surface-acting or emotional expression (Grandey et al., 2005).

Finally, *H5e* (occupational identity mediates the relationship between the use of surface-acting strategies and work engagement among first responders) was partially supported for the overall sample, fully supported for police officers, and not supported for firefighters. This result suggests that for police officers, surface-acting strategies negatively impact work engagement through occupational identity, as they are more likely to fake emotions in response to job demands (Carvalho et al., 2024). This is consistent with research indicating that surface-acting can lead to emotional exhaustion and disengagement (Kammeyer-Mueller et al., 2016). The lack of support for firefighters may indicate that their work environment allows for more authentic expression, reducing the need for surface-acting strategies (Hyun et al., 2020; Park et al., 2024; Richardson & James, 2017).

Implications

Our study provides an important contribution to the literature by examining how occupational identity mediates the relationship between emotional labor and work engagement specifically within the context of first responders. This is the first study, to our knowledge, to explore this dynamic within this high-stress, emotionally demanding group, offering a novel theoretical perspective on the interplay between emotional labor and occupational identity. Additionally, we found that, despite first responders forming a largely homogeneous group, the emotional demands they face, and their occupational identity and work engagement are not uniform between firefighters and police officers. These factors can vary significantly depending on specific occupational factors, including the nature of their relationship to their work (whether voluntary or paid) and the type of response they are engaged in (e.g., emergency rescue purposes, offense prevention, or violence containment). These occupation-specific nuances underscore the necessity of tailoring interventions regarding effective emotion regulation strategies to manage the distinct emotional challenges they face.

In terms of practical interventions, several strategies can enhance emotional resilience and work engagement among first responders, helping to mitigate the adverse effects of emotional labor. For instance, mindfulness-based interventions (McDonald et al., 2021) can be particularly effective for managing stress and emotional demands, especially when tailored to the specific contexts of first responder work. Mindfulness, which involves cultivating awareness of the present moment in a non-judgmental way (Kabat-Zin, 2022), allows first responders to better manage their emotional reactions to stressful situations. Research has demonstrated that mindfulness practices can reduce anxiety, enhance emotion regulation, and improve work engagement (Eberth & Sedlmeier, 2012; Hülshager et al., 2013), all

of which are crucial for mitigating the negative impacts of emotional labor.

Physical exercise is another critical intervention with broad benefits for first responders. Regular physical activity not only improves overall physical health but also enhances emotional resilience by reducing stress hormones (e.g., cortisol) and boosting mood-enhancing endorphins (Childs & de Wit, 2014). For first responders, physical fitness provides an effective outlet for stress and increases endurance in high-pressure taxing situations, thereby promoting better emotion regulation and improving job performance in emotionally charged environments.

Emotional resilience training, specifically tailored for the demands of first responders, can further equip individuals to manage the unique emotional challenges they encounter. Such training focuses on strategies for adapting to stress, trauma, and setbacks, enhancing the capacity to process emotions and recover from traumatic events (Au et al., 2019). For police officers and firefighters, such training is critical to preventing burnout and improving overall job performance (Kaplan et al., 2017). Tailoring emotional resilience training to the specific emotional demands of each profession ensures its relevance and effectiveness (Tims et al., 2013).

In addition, emotional intelligence training can enhance first responders' ability to recognize, understand, and manage emotions, both in themselves and others (Salovey & Mayer, 1990). This skill is particularly important for managing the interpersonal aspects of emotional labor, such as maintaining effective communication and decision-making under stress (Caruso & Salovey, 2004). Emotional intelligence is also associated with better team dynamics and leadership, both of which are vital for first responders working in high-stress environments (Jacobs & Keegan, 2022).

Moreover, understanding the occupation-specific emotional demands of police officers and firefighters can refine selection processes, ensuring that individuals better suited to the emotional challenges of these roles are recruited. By integrating emotional labor assessments into the selection criteria, organizations can identify candidates who are more likely to thrive in emotionally demanding environments (Tims et al., 2013), thereby improving job satisfaction and reducing turnover (Grandey, 2003). A well-matched workforce can mitigate the adverse effects of emotional labor and improve long-term outcomes such as retention and performance (Kaplan et al., 2017).

Finally, organizations must create supportive environments reinforcing emotional resilience (Oliveira et al., 2021), with leadership prioritizing effective emotion regulation strategies (Lim & Moon, 2024; Park et al., 2024; Theoharakis et al., 2024). This support helps alleviate the emotional burden experienced by first responders, enhancing their ability to engage in their work meaningfully while reducing the risk of burnout and disengagement. By cultivating a supportive organizational climate, first responders are better equipped to manage the emotional demands of their roles, ultimately leading to improved performance, greater job satisfaction (Schaufeli et al., 2002), and enhanced long-term mental health.

Together, these interventions can significantly improve emotional resilience, allowing first responders to manage the emotional challenges inherent in their roles better. By enhancing emotion regulation and well-being, these strategies can prevent or mitigate the negative effects of emotional labor, such as burnout and fatigue (Gross & Levenson, 1997; Hochschild, 1983), and foster a more engaged and resilient workforce (Schaufeli et al., 2002).

Limitations and Future Research

This study has some potential limitations. Firstly, we conducted a cross-sectional study, not covering the dynamic process that emotional labor can be. Secondly, given the headcount of Portuguese first responders, our sample is limited. Our sample did not include

paramedics or emergency medical technicians. Although firefighters have similar duties to emergency medical services (e.g., pre-hospital care and patient transport), these occupations can have different inputs in terms of emotional demands and strategies used. For the reasons presented, the generalization of our results should not be done immediately, and have some caution. Thirdly, we were unable to analyze the influence of demographic and job-related variables (e.g., age, gender, seniority, career) on emotional labor demands, work engagement, and occupational identity due to limitations in our sample, such as a lack of diversity in certain demographics or insufficient sample size for reliable subgroup comparisons.

Further research should focus on emotional labor across the several first responders, to obtain more solid conclusions (Kern et al., 2021). Those occupations are especially vulnerable to emotionally demanding situations, and misinterpreting cues can be highly dangerous to them and the community they serve (SAMHSA, 2018). Secondly, future research could analyze the emotional demands of each interaction group (e.g., victims, the general population, sick people, criminals, colleagues, and superiors). By recognizing the potential emotional demands of a specific interaction group, first responders will have an accurate emotional perception and awareness, improving their ability to use adequate strategies to handle a situation. As a result, their emotional performance would be improved.

Finally, future research could focus on the sociodemographic and professional characteristics of Portuguese first responders to get a better understanding of the phenomena of emotional labor, work engagement, and occupational identity. On the one hand, possible variations in gender, age, seniority, geographical location, leadership function, and the work predominantly performed (i.e., administrative or operational duties) could be revealed. On the other hand, it would be enabled to classify the emotional labor of each of the first responders' occupations. Knowing which occupations and careers are associated with the most intense emotional labor demands could help to draw preventive strategies adapted to the challenges of each occupation, preserving first responders' well-being.

Conclusions

This study offers valuable insights into the dynamics of emotional labor among Portuguese first responders, highlighting the complex role of occupational identity in mediating the relationship between emotional labor and work engagement. The results indicate significant differences between police officers and firefighters in terms of emotional labor demands (specifically positive emotion expression demands), occupational identity, and work engagement. Our findings underscore the complex interplay between these elements and profession-specific factors, which should be considered when developing tailored interventions to manage emotional labor effectively. Based on our results, we can better understand how emotional labor demands impact the mental health of these essential professionals. By advancing our understanding of these dynamics, we can better support first responders in managing their emotional labor, thereby fostering a healthier, more resilient workforce.

Conflict of Interest

The authors of this article declare no conflict of interest.

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