Article

Illegitimate Tasks and Work–Family Conflict as Sequential Mediators in the Relationship between Work Intensification and Work Engagement

Cláudia Andrade [1,2,*] and **Paula C. Neves** [1]

1 Coimbra Education School, Polytechnic Institute of Coimbra, 3030-329 Coimbra, Portugal; pneves@esec.pt
2 Center of Psychology, University of Porto, 4099-564 Porto, Portugal
* Correspondence: mcandrade@esec.pt

Abstract: Organizational restructuring and technological developments have been associated with working for longer hours, assuming more responsibilities, and feeling more pressure to reach demanding work targets leading to work intensification. Guided by the framework of the JD Resources and stress-as-offense-to-self theory, the aim of the present study was to explore how work intensification decreases work engagement. We posit that illegitimate tasks and work–family conflict could play a mediator role between work intensification and work engagement. A total of 480 employees in Portugal completed an online survey. The results showed a negative correlation between work intensification, illegitimate tasks, and work–family conflict. Work identification can affect work engagement indirectly through two paths: the separate intermediary effect of illegitimate tasks or work–family conflict and the continuous mediating role of illegitimate tasks and work–family conflict. The results indicate that work intensification decreases work engagement through the role of illegitimate tasks and work–family conflict. This study contributes to the literature on the impacts of work intensification by considering the sequential mediating effect of illegitimate tasks and work–family conflict on work engagement. Although past research has claimed that work intensification negatively impacts work engagement, our results showed that illegitimate tasks and work–family conflict play a critical role in this process.

Keywords: illegitimate tasks; work–family conflict; work engagement; work intensification

1. Introduction

Organizational restructuring and technological developments have been associated with working for longer hours, assuming more responsibilities, and feeling more pressure to reach demanding work targets leading to work intensification. The COVID-19 pandemic brought several challenges to the workplace. Perhaps the most prominent is the speed at which digital transformation is happening. For instance, a general increase in the intensity of (technological) work may manifest itself as increased effort, time constraints, and the usage of ICT for work-related communication in daily tasks (Chesley 2014). These intensified (technological) work environments in turn affect employee behavior and wellbeing (Venz and Boettcher 2022; Wang et al. 2021).

Work intensification (WI) apart from time and work pressure, necessitates that workers incessantly exert more effort to execute more tasks in a lesser amount of time, which can have several negative effects such as the impairment of work engagement (Kubicek et al. 2015). Indicators of engagement at work can include a sense of purpose and fulfillment in the work performed and a sense of autonomy and control over the workplace, which are often at stake due to the increased pace, volume, and intensity of work tasks caused by work intensification (Kubicek et al. 2015). Additionally, the demands related to work intensification can be associated with the request to perform illegitimate tasks (IT), defined as tasks that employees think ought not to be performed by them and are beyond their

professional expectations (Semmer et al. 2010). These tasks could be unnecessary or unreasonable duties that are not required for the individual to perform their work properly, or they could be tasks that are not directly related to the organization's primary business. Since illegitimate tasks at work may be viewed by the worker as a waste of time and resources, illegitimate tasks can make workers feel undervalued and unappreciated and be a threat to self-esteem, and so elicit strain and can have negative impacts on work–family conflict and work engagement. Work–family conflict is the tension or conflict that develops when one's obligations and expectations from one's work conflict with one's capacity to meet one's family or personal obligations, or when those obligations and demands conflict with those of one's employer. Work–family conflict have been proved to have several negative effects on workers, including decreased levels of work engagement (Allen et al. 2000; Bakker et al. 2014). The current study supports the assertion that work intensification influences work engagement. However, the existing literature provides no clear evidence of studies that have examined the impact of illegitimate tasks and work–family conflict as potential sequential mediators in the relationship between work intensification and work engagement. This research is, therefore, the first to consider the potential effects of these variables in this relation. The scarcity of work on this topic in Portugal highlights the importance of work that can contribute to understanding the relationship between WI and WE in a sample of Portuguese workers. The results of the study can help companies to be aware of the possibility of work intensification and take action to lessen its detrimental effects on workers. This entails making sure that workers are not required to do tasks that they feel are not related to their job and responsibilities and promoting ways to support them in achieving work–family balance. These steps can help to mitigate the negative impact of work intensification on work engagement.

2. Theoretical Background

2.1. Work Intensification (WI)

Work intensification is the process of raising the pace and volume of work without expanding resources such as time, personnel, or equipment. It is frequently motivated by the desire to increase workplace productivity and efficiency (Kubicek et al. 2015). Work intensification can have negative consequences for employees, such as increased stress, burnout, and physical and mental health issues (Kubicek et al. 2021). It may also result in decreased job satisfaction and organizational dedication, as well as lower work quality and customer service (Kubicek et al. 2021). Work intensification is caused by several variables, including technology improvements, globalization, and an increase in demand for 24 h services (Kubicek and Korunka 2018). Changes in work structure, such as downsizing or restructuring, and the installation of new management techniques that prioritize efficiency and cost-cutting may also be issues (Kubicek and Korunka 2018).

2.2. Work Engagement

Work engagement (WE) is a positive emotional and cognitive state that a person has when they are completely immersed in and excited about their work (Bakker and Demerouti 2008; Schaufeli et al. 2006). Employees that are engaged are highly driven, committed to their work, and have a feeling of meaning and purpose in their employment (Bakker and Demerouti 2008; Schaufeli et al. 2006). Work engagement is linked to a variety of positive outcomes, including increased job satisfaction, improved job performance, and lower levels of absenteeism and turnover rates (Schaufeli et al. 2006). Employees that are engaged are more imaginative, proactive, and collaborative, which contributes to the organization's overall success (Bakker et al. 2014). A supportive work environment, chances for growth and development, meaningful and difficult work, and clear goals and expectations are all aspects that contribute to job engagement (Bakker et al. 2014; Demerouti et al. 2001). Job autonomy, social support, and recognition and rewards for high performance are all important factors (Bakker et al. 2014; Demerouti et al. 2001).

2.2.1. Work Intensification and Work Engagement

Work intensification and work engagement have a complex relationship that varies depending on context and individual characteristics. Work intensification can be detrimental to work engagement since it increases workload, creates time constraints, and reduces job autonomy, resulting in diminished motivation, commitment, and job satisfaction (Demerouti et al. 2001). Employees who are overworked and overwhelmed may experience burnout, emotional exhaustion, and decreased work engagement (Mäkikangas et al. 2010). A study by Demerouti et al. (2001) that considered work intensification as a type of job demand found that work intensification may lead to reduced work engagement when job control is low. Other studies also found similar results showing that work intensification is negatively related to work engagement (Mäkikangas et al. 2010). Research by van den Broeck, De Cuyper, De Witte, and Vansteenkiste (van den Broeck et al. 2010) that suggests a distinction between job hindrances (e.g., role conflict, work overload) and job challenges (e.g., workload, time pressure) within the framework of the Job Demands–Resources model found that while job challenges are positively related to work engagement, work intensification, which is conceptualized as a type of job challenge, may enhance work engagement when it is perceived as a challenge rather than a hindrance. In the current study, we assume that, in line with research by Demerouti et al. (2001) and Mäkikangas et al. (2010), work intensification is presented as a work demand; hence, we formulate the following hypothesis:

Hypothesis 1. *Work intensification is negatively related to work engagement.*

2.2.2. Mediating Role of Illegitimate Tasks and Work–Family Conflict

In organizational psychology, "illegitimate tasks" (IT) can be characterized as unnecessary or unreasonable. Unnecessary tasks are tasks perceived as meaningless or redundant that seem to exist only because the work is poorly planned or executed by peers, or because someone decided that the tasks reflect the preferences of superiors and not the concrete need of the work context (Jacobshagen 2006; Semmer et al. 2015). These tasks are often regarded as being outside the scope of an employee's job responsibilities or as unrelated to their role within the organization. Employees may experience greater stress and burnout, decreased job satisfaction, and lower levels of organizational commitment if they have to carry out tasks that they consider illegitimate (Semmer et al. 2015; Zong et al. 2022). Employees may be less motivated to engage in their work, which can have a detrimental impact on organizational performance and work engagement. Because the intensification of work can be achieved by carrying out more and different tasks (e.g., illegitimate tasks), and considering the nature of illegitimate tasks, we formulate the following hypothesis.

Hypothesis 2. *The relationship between work intensification and work engagement is mediated by illegitimate tasks.*

Work and family conflict (WFC), also known as work–family conflict, is the tension that occurs when the demands of work and family life collide, making it difficult for an individual to manage their work and family commitments (Greenhaus and Beutell 1985). This conflict can appear in a variety of ways, including feeling torn between work and family obligations, trying to manage time effectively, feeling guilty for ignoring family or work responsibilities, experiencing high levels of stress and burnout, and suffering tensions in personal relationships (Byron 2005; Frone et al. 1992). Work–family conflict and work engagement are two concepts that are linked yet opposed in organizational studies (Allen et al. 2000; Bakker et al. 2014). Work–family conflict arises when an individual's capacity to meet family responsibilities and commitments is hampered by job expectations and responsibilities, resulting in feelings of stress, guilt, and dissatisfaction. Work engagement, on the other hand, is a positive emotional and cognitive state in which employees are completely immersed and excited about their work, experiencing a sense of meaning

and purpose in their employment (Bakker et al. 2014). Work-to-family conflict has been demonstrated in studies to be negatively connected to work engagement, which means that when work-to-family conflict increases, work engagement reduces. A review of research by Allen, Herst, Bruck, and Sutton (Allen et al. 2000) on the consequences of work–family conflict, including its effects on work engagement, found that work–family conflict is negatively related to work engagement, and that the negative effects of work–family conflict on work engagement are stronger for employees who are highly committed to their work. This negative association is most often caused by work-to-family conflict, which can place additional demands on an individual's time and energy, lowering motivation, commitment, and engagement at work (Bakker et al. 2014). Based on these data, and because work intensification can be seen as a job demand (e.g., increased workload, time pressure), it can have a negative effect on work–family conflict, so we formulate the following hypothesis:

Hypothesis 3. *The relationship between work intensification and work engagement is mediated by work–family conflict.*

Additionally, work intensification can be caused by different variables (Kubicek and Korunka 2018), which may imply a requirement to carry out different tasks that may be considered illegitimate. Since illegitimate tasks are those that are outside a person's job description or beyond their degree of knowledge but are still assigned to them by their supervisor or colleagues (Semmer et al. 2015), these tasks can cause work–family conflict because they place additional demands on employees' time and energy, making it difficult to reconcile work and family obligations. A meta-analysis study by Michel, Kotrba, Mitchelson, Clark, and Baltes (Michel et al. 2011) that examined the antecedents of work–family conflict found that work demands, including illegitimate tasks, are positively related to work–family conflict. So, we formulate the following hypothesis:

Hypothesis 4. *Work intensification affects work engagement through a series of mediating effects of illegitimate tasks and work–family conflict.*

In summary, this research explores the direct negative influence of work intensification on workers' engagement and the indirect mechanisms underlying this influence, namely, the mediating role of illegitimate tasks and work–family conflict. The research model is in Figure 1.
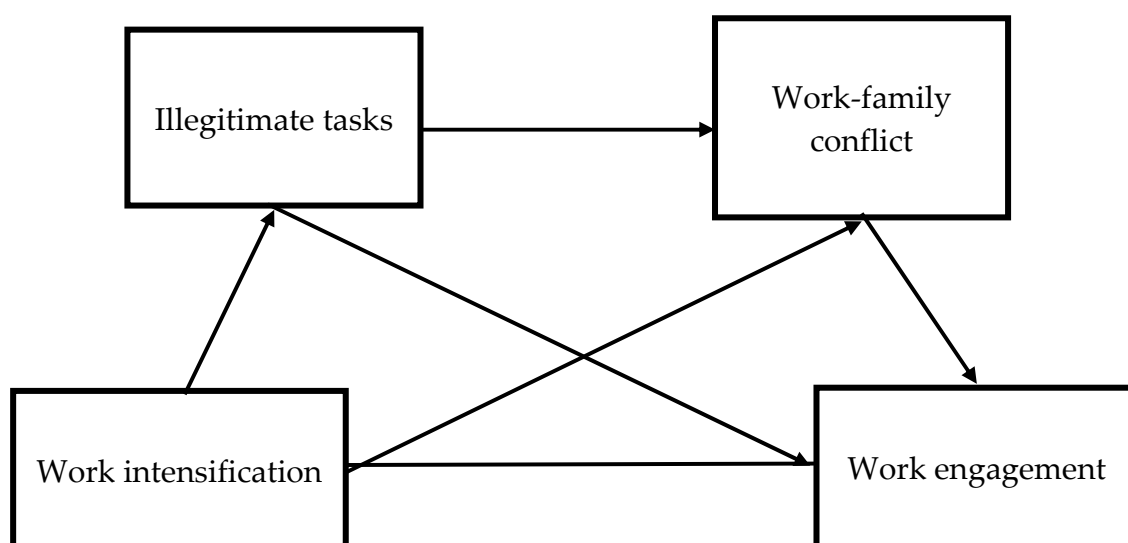

Figure 1. Conceptual model.

3. Materials and Methods

3.1. Participants and Procedure

A cross-sectional survey design was used to collect quantitative data from a sample of professionals from different sectors. Participants in the study had to work a minimum of 20 hours/week and could not be self-employed. The questionnaire started with an informed consent section. Anonymity and confidentiality were guaranteed. Instructions to fulfill the questionnaire were provided. The questionnaire was made available through social media platforms. This study is part of an ongoing research project approved by the Ethical Committee of Polytechnic of Coimbra (Reference: 25_CEIPC_2022).

The sample was composed of 473 participants who were professionals from various occupations, of whom 74.2% were female. Age ranged from 18 to 70, with a mean age of 43.69 (SD 11.40) years old. Of the total sample, 41.8% had children below 18 years old. Regarding education, 65.7% had a bachelor/university degree. Of the total sample, 18.2% reported having a leadership position, and 61% worked on a fixed schedule. Data collection followed a snowball methodology using social media. Demographic information was also collected and included age, gender, professional occupation, work schedule, and educational level.

3.2. Instruments

Work intensification was measured using a 17-item adapted version of the *Intensification of Job Demands Scale* (IDS) developed by Kubicek et al. (2015) that was translated and back-translated in Portuguese. Respondents were asked to agree or disagree with each item (1 = strongly disagree and 5 = strongly agree). The internal consistency for the total scale was $\alpha = 0.85$. Work engagement was measured by the *Utrecht Work Engagement Scale* (Schaufeli et al. 2006). The scale comprised 9 items, and respondents were asked to agree or disagree with each item (1 = strongly disagree and 5 = strongly agree). The internal consistency for the total scale was $\alpha = 0.91$. Illegitimate tasks were measured using the Portuguese version of the *Bern Illegitimate Task scale* by Neves et al. (2023). The scale comprised 8 items, and respondents were asked to agree or disagree with each item (1 = strongly disagree and 5 = strongly agree). The internal consistency for the total scale was $\alpha = 0.92$. Work–Family conflict was measured using 6 items capturing the time and strain experienced by study participants adapted from Matthews, Kath, and Barnes-Farrell (Matthews et al. 2010), which was translated and back-translated in Portuguese. Respondents were asked to agree or disagree with each item (1 = strongly disagree and 5 = strongly agree). The internal consistency for work–family conflict (time) was $\alpha = 0.95$ (three items), and for work–family conflict (strain) $\alpha = 0.92$ (three items).

3.3. Data Analyses

Common methodological bias was tested using SPSS 25.0 for Harman's one-way test. Additionally, SPSS 25.0 was used for multicollinearity tests and Pearson's correlations. The hypotheses were tested using the PROCESS macro in SPSS (modeling 6, 5000 bootstrap resamples) (Hayes 2012).

4. Results

4.1. Multicollinearity Test and Common Method Bias Test

Since the data for all the scales were collected from a single source, the study might contain potential common method variance. For the examination of common method variance, Harman's one-factor test was used. All variables were loaded into an exploratory factor analysis, and the number of factors extracted was restricted to one. The unrotated factor solution revealed that one factor solution accounted for only 31%, which indicates that common method variance is not a potential hazard for the present study (Podsakoff et al. 2003).

4.2. Correlations between Variables

The Pearson's correlation coefficients presented in Table 1 show significant positive correlations between work intensification, illegitimate tasks, and work–family conflict, and significant negative correlations between work intensification, illegitimate tasks, work and family conflict, and work engagement. The presented correlations allow us to fulfil the requirements for hypothesis testing. Reliability coefficients, means, and standard deviations for all the variables of the study are depicted in Table 1

Table 1. Means and standard deviations and intercorrelations.

Variables	*M*	*SD*	1	2	3
1. Work intensification	3.83	1.45	-		
2. Work engagement	3.40	1.11	−0.38 *	-	
3. Illegitimate tasks	3.83	1.25	0.45 **	−0.31 *	-
4. Work–family conflict	3.78	1.34	0.48 **	−0.39 *	0.46 **

* $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$.

4.3. Hypothesis Testing

The mediation analyses were performed using the PROCESS macro (Model 6) for SPSS (Hayes 2022). The effects were estimated with 5000 bias-corrected bootstrap samples. The PROCESS macro uses the bootstrapping method, which is a method of assessing direct and indirect effects of variables in a way that maximizes power and is robust against non-normality. The indirect effect represents the impact of the mediator variable(s) on the original relation (e.g., the relation of the independent variable to the outcome). A serial mediation model was constructed with work intensification as the independent variable, work engagement as the dependent variable, and illegitimate tasks and work–family conflict as mediating variable 1 and mediating variable 2, respectively.

In our study, we tested a theoretical model (see Figure 1) proposing that work intensification negatively affects work engagement (H1). Table 2 presents the results for Model 6 obtained through sequential mediation analysis. The direct effect (without the effect of mediators) was found to be significant ($\beta = -0.10$, t = -0.545, $p = 0.572$), which means H1 was confirmed. Furthermore, it was hypothesized (H2) that work intensification would be positively related to illegitimate tasks which in turn would be negatively related to work engagement. Our data confirm H2. Work intensification significantly and positively predict illegitimate tasks ($\beta = 82$, 95% $_{CI95\% \text{ confidence level}}$ [0.03, 0.18]) which in turn have a negative effect on work engagement ($\beta = -0.22$, 95% $_{CI95\% \text{ confidence level}}$ [0.05, 0.16]). This means that work intensification can negatively influence work engagement if illegitimate tasks are carried out. We further hypothesized (H3) that work–family conflict mediates the relationship between work intensification and work engagement, and our hypothesis was confirmed. Work intensification has a direct and positive effect on work–family conflict ($\beta = 0.59$, 95% $_{CI95\% \text{ confidence level}}$ [0.09, 0.26]), and work–family conflict also has a direct but negative effect on work engagement ($\beta = -0.26$, 95% $_{CI95\% \text{ confidence level}}$ [0.09, 0.31]). This means that work intensification can reduce work engagement by increasing work–family conflict. We also find that illegitimate tasks have an effect on work and family conflict ($\beta = 0.37$, 95% $_{CI95\% \text{ confidence level}}$ [0.04, 0.11]), and that both (illegitimate task and work–family conflict) mediate the relationship between work intensification and work engagement. Work–family conflict mediated the relationship between work intensification and work engagement, and work–family conflict mediated the relationship between illegitimate tasks and work engagement ($\beta = -0.26$, 95% $_{CI95\% \text{ confidence level}}$ [0.04, 0.19]). These results supported Hypothesizes 3 and 4 of the model. In sum, we confirmed that the relationship between work intensification and work engagement is sequentially mediated by illegitimate tasks and work–family conflict. The findings suggest that work intensification can have a negative impact on work engagement if employees perform illegitimate tasks, or experience a work–family conflict, or both in sequence. Our results highlight

the importance of both work–family conflict and illegitimate tasks as mediators in the relationship between work intensification and work engagement.

Table 2. Regression coefficients, standard errors, model summary information, and indirect effects for the serial mediator model.

	Illegitimate Tasks		Work–Family Conflict		Work Engagement	
Total Effects	**B**	**SE**	**B**	**SE**	**B**	**SE**
Constant					3.67 **	0.18
Gender *						
Work Intensification					−0.10 *	0.03
					$F_{(4,469)} = 9.21$; $p < 0.001$; $R^2 = 0.11$	
Constant	3.19 **	0.41	3.52 **	0.23	3.15 **	0.26
Work intensification	0.82 ***		−0.22 *		−0.02	
Illegitimate tasks			0.37 **		0.59	
Work–family conflict					−0.26	
Gender						
	$F_{(4,469)} = 13.21$; $p < 0.001$; $R^2 = 0.19$		$F_{(4,469)} = 15.36$; $p < 0.001$; $R^2 = 0.21$		$F_{(4,469)} = 23.67$; $p < 0.001$; $R^2 = 0.23$	
Indirect effects						
	Effect		Boot LLCI		Boot ULCI	
Total	0.16		0.09		0.17	
WI→IT→WFC	0.17		0.07		0.13	
WI→WFC→WE	0.12		0.03		0.09	
WI→IT→WFC→WE	0.11		0.02		0.07	

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; 1 gender: 1 = male, 2 = female; 2: WI = work intensification; IT = illegitimate tasks; WFC = work–family conflict; WE = work engagement.

5. Discussion

In this study, we consider, in line with Kubicek et al. (2015), that work intensification refers to a multi-faceted construction that is characterized by the need to work at increasing speed, or by performing different tasks simultaneously, or with reduced time (Kubicek et al. 2015). This study focused on the work intensification impact on workers engagement, considering the role of illegitimate tasks and work–family conflict. The present findings indicate a negative association between work intensification and workers' engagement, thereby supporting hypothesis H1. Our results are in line with previous studies that found a negative relationship between WI and WE (Chouhan 2023; Venz and Boettcher 2022; Wang et al. 2021), proving that work intensification can have a detrimental effect on work engagement. However, as we stated above, WI can decrease under the influence of other factors. Because we used a measure that assesses individual perception (worker perception), work intensification reflects the demands associated with the individual job, rather than the organizational factors in general. So, in our model, we consider that for the decreasing WE, it is also relevant to consider either the nature of the tasks or the intensity of the tension caused by them, highlighting the importance of illegitimate tasks and work–family conflict in the decline of WE. As expected, the relationship between work intensification and work engagement is mediated by illegitimate tasks, which confirms H2. According to the JD–Resources model (Bakker and Demerouti 2008), job resources and individual resources buffer the harmful impact of demands at the workplace. WI can clearly be assumed as a demand of the workplace, whose implications can be balanced by personal resources, and work as a motivational factor for work engagement. Moreover, if the demands are higher than resources, they can create resource depletion with negative impacts on work engagement. The findings regarding the influence of work intensification on work engagement are mediated by work–family conflict, as stated in H3. However,

our results seem to mean that it is not the increase in work itself, or the pressure of time influences on WE, but the nature of the tasks that are carried out. Thus, illegitimate tasks have been studied and understood in the context of the SOS theory that is based on a widely accepted assumption that maintaining a positive self-image is a basic need, and any threat to self-esteem elicits strain (Semmer et al. 2010). Thus, the performance of illegitimate tasks can trigger feelings of disrespect and offense to the professional identity and threaten self-esteem (Eatough et al. 2016). Being assigned illegitimate tasks may send self-threatening messages to employees that they are not being valued and respected (Kottwitz et al. 2019), and, at the same time, they may not be able to carry out the tasks within their professional scope and may not derive a sense of achievement or fulfilment. They would perceive illegitimate tasks as less meaningful because they are not part of their core tasks, and wasting time with these tasks may hamper the meaning of their work (Kilponen et al. 2021; Mäkikangas et al. 2010) and work engagement (Kilponen et al. 2021; Schmitt et al. 2015). Secondly, experiencing illegitimate tasks keeps employees constantly thinking about those tasks and causes negative experiences at home. Because the illegitimate tasks are performed in a WI context, employees may need to invest extra time in dealing with these tasks even after work hours. The extra time and effort involved may deplete personal resources. This, together with the assumption made by SOS theory (Semmer et al. 2019), leads us to postulate that the illegitimate task experiences can be interpreted as personal disrespect that can cause strain. Our results follow these assumptions, and H4 was confirmed. In fact, the consequences of this, as stated in the JD–R theory, include health problems such as anxiety, depression, irritability, emotional exhaustion, and burnout (Eatough et al. 2016; Fila and Eatough 2020; Meier and Semmer 2018; Munir et al. 2017; Semmer et al. 2015), with implications for the levels of work–family conflict, and a decrease in the engagement in work activities can be generated. While previous research has confirmed each mediating variable's role individually, the present study adds to the literature by revealing their combined and sequential mediation effects.

6. Conclusions

This study investigates the relationship between WI and WE, and the mediating effect of illegitimate tasks and work–family conflict on this relationship, in a sample of Portuguese workers. Our data show that work intensification has a negative indirect effect on work engagement through illegitimate tasks. Additionally, WI has a negative indirect effect on work engagement through work–family conflict. Finally, the relationship between WI and WE are serially mediated by illegitimate tasks and work–family conflict. Employees who experience work intensification are more likely to report that they are performing illegitimate tasks, which further increases their work–family conflict and, subsequently, decreases their work engagement. Overall, our study provides support for the importance of considering work intensification and their relations with illegitimate tasks and work–family conflict when employees' work engagement is addressed. These findings have implications for the development of interventions aimed to properly diagnose whether work intensification is creating the need to perform tasks that are considered as illegitimate by the employees. It is also important to consider, when analyzing workplace factors related to work–family conflict, the role of work intensification and illegitimate tasks in identifying resources that employees need to deal with work intensification and illegitimate tasks. To mitigate the negative effects of work intensification, illegitimate tasks, and work–family conflict, organizations can take several steps, including providing adequate training and resources, involving employees in decision-making processes, supporting employees' career development, providing opportunities for meaningful work, and recognizing the importance of a work–family balance and of creating a positive organizational culture that values employee participation.

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