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Exploring interpersonal conflicts within the JD-R model: aggregation and validation in the context of elementary school employees in Croatia

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ABSTRACT

This study aims to enhance the Job Demand-Resources (JD-R) model by incorporating the aggregation approach and addressing the research gap concerning interpersonal conflicts within this framework. Building on the theoretical background and placing interpersonal conflicts in the JD-R framework, we adopted a quantitative research design, utilizing a structured probabilistic sample of 343 elementary school employees in Croatia who responded to the COPSOQ III questionnaire distributed online. Furthermore, validating the COPSOQ III questionnaire in Croatian ensures the relevance and applicability of the findings in this cultural context. We employed Partial Least Squares Structural Equation Modeling (PLS-SEM) to test the proposed model and establish a second-level higher-order model, assessing and analyzing the relationships within the JD-R model. The results indicate that conflicts and quarrels, as proxies for interpersonal conflicts, thrive when perceived job resources are high, and job demands are low, leading to improved health outcomes. These findings suggest that interpersonal conflicts may serve as a mechanism for mobilizing resources to cope with job demands, emphasizing the importance of effectively managing conflicts for healthier and more productive work relationships and environment.

PUBLIC INTEREST STATEMENT

Dive into the intriguing world of Croatian elementary schools, where our study reveals a surprising twist: conflicts among elementary school employees aren't always a sign of trouble. In fact, they can be a secret weapon for stress relief and better health. We've uncovered that not all conflicts are harmful; some can act as cathartic events, helping to resolve tensions and improve well-being, transforming the school environment for the better. Interpersonal conflicts may serve as a mechanism for mobilizing resources to cope with job demands, emphasizing the importance of effectively managing conflicts for healthier and more productive work relationships and environment. Our research sheds new light on the delicate balance of job demands and resources in education, offering a fresh perspective on how to foster a more harmonious and productive workplace. It's not just about reducing conflicts but understanding their hidden potential.

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1. Introduction

In the evolving landscape of human resources management, the Job Demands-Resources (JD-R) model stands as a cornerstone framework, delineating the dualistic nature of work environment factors. Initially conceptualized by Demerouti et al. (2001), the JD-R model bifurcates workplace elements into job demands, encompassing physical, social, or organizational facets necessitating sustained effort and linked to physiological and psychological strains and job resources, which are instrumental in fostering motivation, goal achievement, and personal development. The dynamic interplay between these elements

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critically shapes employee outcomes, with job demands often exacerbating strain and resources promoting positive effects.

Building upon this foundation, subsequent studies have deepened our understanding of the JD-R model. Meijman et al. (1998) articulated how job demands could transmute into stressors without adequate recovery, which further leads to exhaustion or disengagement, a narrative further expanded by Hobfoll (2001), Hakanen et al. (2006), and Simbula et al. (2011). Collie et al. (2019) highlighted the optimal combination of low job demands and high resources in achieving job satisfaction and commitment. These insights allow us to explore the nuances of job demands and resources within specific sectors, such as education.

The implications of job demands and resources are profound in educational settings, particularly among elementary school staff. As identified by Dicke et al. (2015, 2017) and Tsouloupas et al. (2010), teacher strain and attrition underscore the urgency of examining these dynamics. The impact of these elements on educators' well-being and student outcomes has been extensively documented (Bakker et al., 2007; Bermejo-Toro et al., 2016; Collie et al., 2015; Darmody & Smyth, 2016; Dicke et al., 2018; Evers et al., 2016; Ilies et al., 2015; Klusmann et al., 2016; Phillips et al., 2011; Skaalvik & Skaalvik, 2018; Tonder & Fourie, 2015).

The JD-R model's relevance extends beyond the traditional boundaries to encompass organizational interpersonal dynamics. Through its iterations and expansions (Bakker & Demerouti, 2017; Schaufeli, 2017; Xanthopoulou et al., 2007), the model now addresses the role of personal resources and the impact of job demands and resources on various outputs, including additional and parsed factors, as well as mediating and moderating roles of different factors in the model, allowing further examination of the elements of organizational dynamics and relationships. This is particularly significant in educational contexts, where the quality of relationships affects staff well-being and student experiences (Alfirević et al., 2016; Bilić, 2016, 2021; Gopinath, 2011; Smyth et al., 2007).

The Job Demands-Resources (JD-R) model acknowledges that job demands can lead to various forms of strain, including interpersonal conflicts within organizations. This strain often manifests as tensions and stress among teams, with factors like high workload demands and conflicting goals contributing to strained relationships and reduced well-being. Prior research highlighted the role conflict and work-life conflict as significant strain factors (Baeriswyl et al., 2016; Jensen, 2014; Lu & Guo, 2019; Obrenovic et al., 2020; Tement & Korunka, 2015; Tremblay & Messervey, 2011; Vignoli et al., 2016; Wu & Zheng, 2019; Xu, 2019).

However, in educational settings, particularly in elementary schools, conflicts may take a different form and span various levels, involving students, teachers, and parents (Gopinath, 2011). Studies conducted in Croatia reveal that a significant proportion of teachers and school principals experience interpersonal conflict, often manifesting as verbal violence, which impacts the organizational culture and potentially leads to attrition (Bilić, 2016, 2021). Interpersonal conflicts within teams have been linked to work engagement and performance (Costa et al., 2015; Yuan et al., 2019).

Nevertheless, while substantial, the current body of research often overlooks the complete spectrum of the JD-R model, particularly in two cases: aggregate effects and the role of interpersonal conflicts. Moreover, in the context of elementary school environments, interpersonal conflicts can significantly affect organizational culture and impact stakeholders at multiple levels. Furthermore, the dichotomy of conflicts as either functional or dysfunctional (Halperin & Tagar, 2017; Hussein & Al-Mamary, 2019; Kreitner & Kinicki, 1992; Levi, 2001) and their linkage to work engagement and performance (Costa et al., 2015; Vaux & Kirk, 2018; Yuan et al., 2019) suggests a need for a more nuanced understanding.

Although conflicts are typically viewed negatively, they can also foster problem-solving, creativity, and development (Halperin & Tagar, 2017; Hussein & Al-Mamary, 2019; Kreitner & Kinicki, 1992; Levi, 2001). Conversely, they are assumed to lead to reduced productivity, strained relationships, and other negative consequences (Bar-Tal et al., 2007; Hussein & Al-Mamary, 2019; Janssen & Giebels, 2013; Lakiša et al., 2021; Levi, 2001).

The JD-R model allows interpersonal conflicts to result from job demands, acting as a 'strain' (Schaufeliet al., 2014; Bakker & Costa, 2014). Nevertheless, empirical research on the mediating role of interpersonal conflict within the JD-R framework is limited, indicating a research gap (Granziera et al., 2021). That research gap creates a motivation to include interpersonal conflicts, such as conflicts and

quarrels, in the current research. It requires fully integrating interpersonal conflicts within the JD-R model, particularly in exploring their role as a consequence of job demands and as a strain factor, a gap noted by Cronin and Bezrukova (2019), Esbati and Korunka (2021), and Granziera et al. (2021). This gap necessitates an expanded investigation into the nature of interpersonal conflicts within the JD-R framework, emphasizing their potential positive and negative outcomes on employee health, well-being, and motivation.

In addition, while the theoretical JD-R model proposes higher-level construals, previous research primarily focuses on the relationships between the construals' building blocks, failing to provide ample empirical evidence for the comprehensive model. The lack of such an approach reveals an additional research gap and motivates the pursuit of an aggregative approach in this research.

The rest of the paper is structured as follows. The literature review is organized into subchapters that provide theoretical background about interpersonal conflicts' inclusion in the JD-R, the assumptions of the aggregate model, and the conceptualization of a model that will be further empirically tested. The methodology is explained in the Materials and Methods section, with a detailed explanation of the questionnaire, measures, data collection, and analysis techniques. The Results section provides a detailed sample description and examination of the validity and reliability of the questionnaire in the Croatian language, followed by building structural equation models at two levels of aggregation and their thorough examination and validation. The remainder of the Results section examines mediation and moderation effects. The article proceeds to the Discussion chapter, followed by the Conclusions and Final remarks summarizing findings, their theoretical and practical implementation, limitations, and suggestions for future research.

2. Literature review

2.1. The role of the conflicts in the JD-R

The JD-R model bridges occupational health and human resource management, addressing health impairment and motivation to enhance employee well-being and work outcomes (Balducci et al., 2011). It provides a conceptual framework applicable to various work environments to identify harmful and protective factors and promote employee well-being (Demerouti et al., 2001).

While the model was initially developed to explain the relationship between job characteristics and employee well-being, it can also be applied to the relationships' dynamics and outcomes within an organization. Resources such as social support and opportunities for collaboration can enhance cooperation, trust, and mutual understanding among colleagues. These resources contribute to a positive work climate, which in turn promotes healthier and more productive relationships within the organization. Studies have shown that job-related resources, including personal resources, are associated with positive work outcomes, while job demands are linked to poor well-being and motivation to leave the profession (Hakanen et al., 2006; Howard, 2000; Skaalvik & Skaalvik, 2018).

Interpersonal conflicts, such as conflicts within teams (team relationships conflict), have been linked to work engagement and performance (Costa et al., 2015; Yuan et al., 2019). Vaux and Kirk (2018) use a qualitative approach to examining interpersonal conflict on performance and productivity. However, these researches use only some elements and do not encompass the complete JD-R model. Therefore, some relationships regarding interpersonal conflicts have been established. However, they do not paint a comprehensive picture of interpersonal conflict in a work environment as intended by a holistic approach of JD-R.

While often observed as a priori negative occurrence, conflicts can be categorized as functional or dysfunctional based on their outcomes, specifically whether they contribute to desired outcomes or disrupt harmony (Kreitner & Kinicki, 1992). Functional conflicts are believed to yield positive outcomes for the organization and individuals involved. These positive outcomes can include fostering creativity, enhancing productivity, inspiring problem-solving, promoting development, facilitating change, improving interpersonal understanding, enhancing decision-making, increasing curiosity, and promoting appreciation among colleagues (Halperin & Tagar, 2017; Hussein & Al-Mamary, 2019; Levi, 2001). On the other hand, negative consequences of conflicts may encompass reduced productivity, dissatisfaction, strained

interpersonal relationships, diminished work quality, loss of trust among colleagues, poor communication, knowledge hiding, decreased focus, absenteeism, or employee turnover (Ahmad, 2022; Bar-Tal et al., 2007; Hussein & Al-Mamary, 2019; Irshad et al., 2023; Janssen & Giebels, 2013; Lakiša et al., 2021; Levi, 2001; Zhang et al., 2021). Furthermore, maintaining an optimal level of conflict, particularly when it stems from functional conflicts, is advantageous for organizational health and performance, as it fosters progress and growth. This perspective is supported by various studies (Kreitner & Kinicki, 1992; Memili et al., 2015; Mullins, 1999; Triguero-Sánchez et al., 2018).

While Cronin and Bezrukova (2019) proposal exceeds the JD-R framework, it addresses the importance of interpersonal conflicts. Esbati and Korunka (2021) noticed the research gap and contributed by linking interpersonal resources to emotional exhaustion and work engagement. Only the latter research examines the negative relationship between interpersonal conflicts and outcomes (e.g. emotional exhaustion). Moreover, several recent articles highlight the relevance of the interpersonal conflicts in work environment, although not related to JD-R framework (Ahmad, 2022; Akhlaghimofrad & Farmanesh, 2021; Bruce at el., 2022; De Clercq & Belausteguigoitia, 2021; Irshad et al., 2023; Jung et al., 2023; Saridi et al., 2021; Umigiarni et al., 2021; Venz & Nesher Shoshan, 2022; Wang et al., 2019; Zhang et al., 2021). These researches highlight the need for further exploration of interpersonal conflicts in work settings, which extends the importance of our research goal of examining the role of interpersonal conflicts within the comprehensive JD-R framework.

While interpersonal conflicts may have either positive or negative outcomes, the JD-R framework suggests their negative effects (Balducci et al., 2011). Therefore, interpersonal conflicts occur as a job demand (Schaufeli et al., 2014) or result from high job demands and negative outcomes (Bakker & Costa, 2014). However, interpersonal conflicts may have both negative and positive consequences, so they might not necessarily act as a job demand.

Bruce et al. (2022) also show that interpersonal conflicts can result from personality clashes, petty arguments, or professional jealousy, i.e. perceived resource differences. In addition, the review of Umigiarni et al. (2021) reveals that conflicts within an organization can arise from the varying characteristics, backgrounds, levels of work intensity, interests, and objectives of each organizational member (Beenen et al., 2018), as well as workload, and misunderstanding of person's and their colleagues' roles (Mustomi et al., 2018). Role clarity is considered a resource in the JD-R framework, and De Clercq and Belausteguigoitia (2021) show its moderating effect on interpersonal conflict and creative behavior. Umigiarni et al. (2021) also refer to Muslim's (2020) classification of the causes of the conflicts, divided into groups of 'personality, knowledge, communication, human relations, discipline, effectiveness of learning, welfare, and availability of facilities and infrastructure' – elements which encompass both job demands and job resources.

Therefore, we argue it is more appropriate to observe interpersonal conflicts as a consequence of job demands and prompted personal resources. That places conflict as a 'strain' in the JD-R framework. This proposal is viable because the JD-R entails a heuristic approach that considers how job and personal characteristics can impact employee health, well-being, and motivation. This allows for the possibility of adaptation and testing shared assumptions even when different studies utilize non-overlapping concepts (Schaufeli et al., 2014).

The other part of the research goal includes creating the aggregated JD-R model. In this case, we rely on Berthelsen et al. (2018), who used partial aggregation and furthered their approach to examine a complete theoretical JD-R model empirically. However, such an approach also requires exploring further theoretical background for each relationship proposed by the model.

2.2. The model assumptions

The Job Demands-Resources (JD-R) model by Demerouti et al. (2001) delineates job demands as factors requiring sustained effort, leading to physiological and psychological strains. Meijman et al. (1998) explain that job demands can become stress factors when they require significant effort without adequate recovery. The JD-R model recognizes that job demands can lead to strain and negative outcomes. In an intra-organizational context, this can manifest as conflicts, tensions, and stress among colleagues or different teams. For example, high workload demands or conflicting goals can contribute to strained

relationships and decreased well-being. This framework implies that job demands directly correlate with strain, leading to:

Hypothesis 1: Job demands are positively related to strain (Conflicts and Quarrels).

On the other hand, job resources contribute to motivation and development, ultimately yielding positive effects (Demerouti et al., 2001). The JD-R model emphasizes that job resources can enhance employee engagement and motivation, leading to positive work outcomes. Motivation is usually measured indirectly through positive work attitudes, such as job satisfaction, work engagement, flourishing, or commitment to work (Berthelsen et al., 2018; Bakker & Demerouti, 2017). In the context of intra-organizational relationships, high levels of engagement and motivation can facilitate effective teamwork, knowledge sharing, and innovation. The model highlights how job resources boost engagement and motivation, enhancing intra-organizational relationships and outcomes (Xanthopoulou et al., 2007). Inherent quality motivation present with resources encourages employees to increase their efforts and abilities with work tasks, which leads to an elevated level of intrinsic motivation and positive work attitudes. This supports:

Hypothesis 2: The availability of job resources is positively associated with motivation (positive work attitudes).

For elementary school employees, interpersonal conflicts can emerge at various levels within educational settings, involving students, teachers, principals, parents, and the community (Gopinath, 2011). These conflicts can potentially impact schools' organizational culture and social environment, which are crucial in shaping students' experiences and should reflect values such as trust, democracy, and authenticity (Alfirević et al., 2016). The relevance of this issue is underscored by research conducted in Croatia. One study (Bilić, 2016) found that 74% of teachers considered for the research experienced various forms of violent behavior, primarily verbal violence and raised voices, from their students, parents, or colleagues. Another recent study (Bilić, 2021) revealed that 84% of school principals in Croatia also face inappropriate, uncivilized, or violent behavior from colleagues, superiors, parents, and students.

Teacher strain and attrition have been identified as significant issues (Dicke et al., 2015; 2017; Tsouloupas et al., 2010). Work-related stress and mental health problems are prevalent in the education sector, making it essential to identify predictors of occupational health issues among educators (Phillips et al., 2011). The relationship between the strain and outcome is extracted as follows:

Hypothesis 3: Strain (Conflicts and Quarrels) is negatively related to outcome (health).

The revised JD-R model by Bakker and Demerouti (2017) suggests a direct link between motivation and outcomes, specifically job performance. While there is extensive literature on the relationship between job resources and motivation, between job resources and health outcomes, and between motivation and other outcomes, finding studies that directly link motivation to health outcomes in the context of the JD-R framework is more challenging, so a deduction is in order. In the context of intra-organizational relationships, high levels of engagement and motivation can facilitate effective teamwork, knowledge sharing, and innovation. When individuals feel supported and valued within their work relationships, they are more likely to invest effort and contribute positively to the organization. The inherent quality motivation of resources encourages employees to increase their efforts and abilities at work tasks, which leads to an elevated level of intrinsic motivation, increasing the level of work engagement. Positive work outcomes, including high-performance levels, have been found to be mediated by work engagement, which is influenced by job resources (Demerouti et al., 2010). Motivating factors such as job satisfaction and commitment also significantly enhance work engagement (Berthelsen et al., 2018; Döbler et al., 2022). Job resources that enhance motivation benefit employees' psychological state and behavior, positively impacting employee well-being. We assume these findings may extend to all outcomes, in this case, health. This leads to:

Hypothesis 4: Motivation (positive work attitudes) is positively related to outcome (health).

Job resources may directly relate to strains, particularly in the case of interpersonal conflicts, as previously discussed in relation to the review by Umigiarni et al. (2021). Research indicates that enhanced

job resources can alleviate the negative impact of high job demands, leading to improved work engagement and reduced interpersonal conflicts (Bakker et al., 2007; Demerouti et al., 2010; Umigiarni et al., 2021). The Revised JD-R model, as proposed by Bakker and Demerouti (2017), introduces a direct path from resources to strain, leading to:

Hypothesis 5: Job resources are negatively related to strain (Conflicts and Quarrels).

A contrasting dynamic characterizes the relationship between job demands and motivating factors. Job demands, which include physical, social, or organizational aspects of work requiring sustained effort, are typically associated with physiological and psychological strains and can lead to stress factors when the effort required exceeds the capacity for recovery (Meijman et al., 1998). High job demands are linked to outcomes like exhaustion and disengagement, which means they negatively affect motivating factors. However, low job demands can reduce the physiological and psychological strain on employees (Collie et al., 2019), as they are less likely to experience the stress and exhaustion associated with high job demands. With lower demands, employees may find more energy and time to engage with job resources, leading to increased job satisfaction, higher work engagement, commitment, and improved overall well-being. That implies:

Hypothesis 6: Job demands are negatively related to motivation (positive work attitudes).

In the JD-R model (Demerouti et al., 2001), the direct interrelationship between job demands and resources is typically inversely proportional or negatively correlated. This means that, generally, as job demands increase, the availability or effectiveness of job resources decreases, and vice versa. The negative interrelationship suggests that employees might find it more challenging to access or leverage resources effectively in situations with high job demands, thereby amplifying the stress and strain associated with their job demands. Conversely, in environments where job demands are lower or adequately managed, the available resources can be more effectively utilized, leading to better work outcomes and employee well-being. That relationship may seem problematic because its logic requires a backward relationship between strains and outcomes, and the latest revision of the model removes the interaction between demands and resources (Bakker & Demerouti, 2017). Taris and Schaufeli (2015) argue that the main effects of demands and resources on burnout are considerably stronger than those for interactions between demands and resources because interactions are especially likely to occur when the type of demands, resources, and outcomes refer to qualitatively similar concepts. However, the initial model contained that relationship (Demerouti et al., 2001), and we chose to check that relationship as well:

Hypothesis 7: Job demands and job resources are negatively interrelated.

The model also suggests strains harm motivation and job performance (Bakker & Demerouti, 2017). Strains and motivating factors are closely interrelated. Strains, often resulting from high job demands (Demerouti et al., 2001; Melamed et al., 2006; Schaufeli et al., 2014; Schaufeli & Bakker, 2004), can demotivate employees, reducing their job satisfaction, engagement, and performance. Conversely, motivating factors derived from job resources positively influence outcomes by promoting employee engagement, satisfaction, and well-being (Collie et al., 2019; Hakanen et al., 2006; Hobfoll, 2001; Simbula et al., 2011), and in such an interpretation, this relationship between the strains and motivation mimics the relationship between job demands and resources. Motivation or motivating factors, often related to aspects of job satisfaction, personal achievement, recognition, and the intrinsic value of the work itself, can contribute to an individual's overall positive experience at work. For example, employees who find their work meaningful and feel recognized for their efforts will likely experience lower levels of job-related stress (e.g. Luthans, 2002). Therefore:

Hypothesis 8: Strain (Conflicts and Quarrels) and motivation (positive work attitudes) are interrelated.

Previous research has focused on the occupational well-being of teachers and school employees, highlighting the impact of resources and demands on teachers' well-being and student outcomes (Bakker et al., 2007; Collie et al., 2015; Darmody & Smyth, 2016; Ilies et al., 2015; Klusmann et al., 2016). Significant research in several countries has revealed that resources and demands affect teachers' work-related

well-being (Bermejo-Toro et al., 2016; Dicke et al., 2018; Evers et al., 2016; Skaalvik & Skaalvik, 2018; Tonder & Fourie, 2015). Research has shown that job demands are associated with poor well-being, unsuccessful adaptation, and higher motivation to quit the profession (Hakanen et al., 2006; Howard, 2000; Lee, 2019; Leung & Lee, 2006; Skaalvik & Skaalvik, 2018).

The relationship between strains and negative outcomes, particularly poor health, is emphasized in the JD-R model proposed by Schaufeli and Bakker (2004). Several studies support this association, linking high job demands and low job resources to physical and psychological health issues such as depression, cardiovascular disease, and psychosomatic complaints (Melamed et al., 2006; Schaufeli et al., 2014). Research involving teachers, as highlighted by Howard (2000), Hakanen et al. (2006), Lee (2019), and Skaalvik and Skaalvik (2018), indicates that high job demands in the educational sector are associated with poor well-being, unsuccessful adaptation, and increased motivation to quit the profession, which also allows:

Hypothesis 9: Job demands have a negative effect on the outcome (health).

On the other hand, higher levels of job-related resources, including personal resources, tend to lead to positive work outcomes (Hakanen et al., 2006; Hobfoll, 2001; Simbula et al., 2011). Motivating factors such as job satisfaction and commitment arise from job resources and significantly enhance work engagement (Berthelsen et al., 2018; Döbler et al., 2022). Strong intra-organizational relationships as a resource can significantly impact overall organizational performance and productivity. Effective collaboration, cooperation, and communication fostered by positive relationships can lead to improved coordination, problem-solving, and innovation. Organizations can create a conducive environment for high performance and productivity by recognizing and cultivating resources that enhance relationship quality. The model's broader applicability to organizational dynamics (Balducci et al., 2011; Hakanen et al., 2006; Howard, 2000; Skaalvik & Skaalvik, 2018; Smyth et al., 2007) reinforces:

Hypothesis 10: Job resources have a positive effect on the outcome (health).

Taris and Schaufeli (2015) argue that the impact of demands and resources on burnout surpasses their interaction. The JD-R model acknowledges that job demands can lead to intra-organizational strain (Alfirević et al., 2016; Baeriswyl et al., 2016; Bilić, 2016, 2021; Gopinath, 2011; Jensen, 2014; Lu & Guo, 2019; Obrenovic et al., 2020; Tement & Korunka, 2015; Tremblay & Messervey, 2011; Vignoli et al., 2016; Wu & Zheng, 2019; Xu, 2019). Interpersonal conflicts, such as conflicts within teams (team relationships conflict), have been linked to work engagement, performance, and productivity (Costa et al., 2015; Vaux & Kirk, 2018; Yuan et al., 2019).

However, Howard (2000) showed that if employees have a heavy workload but do not have access to or cannot mobilize resources, then their successful adaptation is threatened. In such a setting, an interpersonal conflict may be required to mobilize the resources or even to develop quality relationships, divide the resources, and get the job done (Kreitner & Kinicki, 1992; Memili et al., 2015; Mullins, 1999; Triguero-Sánchez et al., 2018). The JD-R model, as discussed by Schaufeli et al. (2014) and Bakker and Costa (2014), posits that high job demands can lead to interpersonal conflicts, influencing various outcomes. This mediation implies that the effects of job demands on outcomes are at least partly channeled through the strain caused by interpersonal conflicts, substantiating:

Hypothesis 11: Strain (Conflicts and Quarrels) mediates the relationship between job demands and outcomes.

Positive work outcomes, including high-performance levels, have been found to be mediated by work engagement (as a proxy for motivation), which is influenced by job resources (Demerouti et al., 2010). The inherent motivation that resources present encourages employees to increase their efforts and abilities with work. Schaufeli and Bakker (2004) highlight the connection between high job demands, low resources, and negative health outcomes, with positive work attitudes mediating these effects (Melamed et al., 2006; Schaufeli et al., 2014; Demerouti et al., 2010), which suggests the following:

Hypothesis 12: Motivation (positive work attitudes) mediates the relationship between job demands and outcomes.

According to the JD-R model, as proposed by Demerouti et al. (2001) and expanded by Bakker and Demerouti (2017), the presence of job resources can lead to positive work attitudes. However, this relationship is mediated by job demands. If job demands are a mediator, they should explain how job resources affect positive work attitudes. The presence of job resources might lead to specific levels of job demands, which in turn affect work attitudes. Here, job demands are a crucial link in the chain of effect from job resources to work attitudes. High job demands can potentially diminish job resources' positive effects on work attitudes. This relationship examines whether excessive demands can affect employees' attitudes toward their work even with ample resources, affecting motivation, engagement, and overall job satisfaction. That supports:

Hypothesis 13: Job demands mediate the relationship between job resources and motivation (positive work attitudes).

The JD-R model (Bakker & Demerouti, 2017; Demerouti et al., 2001; Schaufeli & Bakker, 2004) suggests that adequate job resources can buffer the negative impact of high job demands, thereby reducing strain and interpersonal conflicts. This mediation implies that the presence of resources like social support or personal growth opportunities can alleviate the strain caused by demanding job conditions, potentially leading to fewer interpersonal conflicts. When there are ample job resources to balance high job demands, it can lead to enhanced motivation and greater work engagement (Moloney et al., 2018). Positive school climate, social support, and supervisor appreciation were strongly related to high levels of engagement in the presence of high job demands. Appreciation of the leader and their support can also help the worker cope with the job's demands, facilitate employee performance, and protect against the negative impact on health (Väänänen et al., 2003). Additionally, Bakker et al. (2007) research among Finnish teachers supports the idea that job resources can mitigate the negative effects of high job demands. This could be extrapolated to suggest that these resources might mediate the relationship between job demands and strain, including interpersonal conflicts, concisely as:

Hypothesis 14: Job resources mediate the relationship between job demands and strain (Conflicts and Quarrels).

A similar relationship has been previously introduced in Hypothesis 13, where a mediating effect was proposed. However, if job demands act as a moderator, their presence or level changes the strength or direction of the relationship between job resources and positive work attitudes. For example, the positive impact of job resources on work attitudes might be stronger when job demands are low and weaker. In this case, job demands do not link the cause and effect (as in mediation), but they influence the intensity of the relationship.

Hypothesis 15: Job demands moderate the relationship between job resources and positive work attitudes.

Research among Finnish teachers supports the role of job resources in mitigating the negative effects of high job demands on engagement (Bakker et al., 2007), as proposed in Hypothesis 14. However, this hypothesis allows us to examine a different, moderating effect of such a relationship:

Hypothesis 16: Job resources moderate the relationship between job demands and strain (Conflicts and Quarrels).

2.3. The model

Empirical research on the mediating role of interpersonal conflict within the JD-R framework is limited, indicating a research gap (Granziera et al., 2021). The revealed research gap motivates the current research to include interpersonal conflicts, such as conflicts and quarrels.

While the theoretical JD-R model proposes higher-level construals, previous research primarily focuses on the relationships between the construals' building blocks, failing to provide ample empirical evidence for the comprehensive model. The lack of such an approach reveals an additional research gap and motivates the pursuit of an aggregative approach in this research.

To address these gaps, a theoretical model based on the JD-R framework and previous research (Bakker et al., 2007; Bakker & Demerouti, 2017; Berthelsen et al., 2018; Taris & Schaufeli, 2015) is

proposed. To enhance the clarity and focus of our theoretical model based on the JD-R framework, we opted not to include job crafting and self-undermining, which are present in Bakker and Demerouti (2017) latest model. Our approach concentrates on well-established relationships within the JD-R model, supported by previous empirical research. This decision ensures a more straightforward comparison and analysis, particularly as we integrate the new construct of interpersonal conflicts. By doing so, our model maintains its relevance and robustness while allowing for the exploration of these interpersonal dynamics within the established JD-R framework.

Our research, anchored in this model, seeks to validate its applicability using the COPSOQ III questionnaire (2021; Burr et al., 2019), with a focus on discerning the effects of job-related variables, particularly interpersonal conflicts, on employee outcomes. Starting from the JD-R model and relationships defined in previous subchapters, along with the identified research gap, we propose a theoretical model depicted in Figure 1. A series of hypotheses stem from the proposed model:

3. Materials and Methods

The methodology of the research on Croatian elementary school employees using the JD-R model incorporates several key elements. The research approach is primarily quantitative, characterized by the use of structured questionnaires to collect empirical data. This approach is suitable for testing specific hypotheses and examining the relationships between various constructs.

The COPSOQ III questionnaire, selected for its comprehensive assessment of workplace psychosocial factors, is complemented by the Work Ability Score and UWES CRO – 2014 to satisfy the study's scope and validate related constructs. The COPSOQ III questionnaire is generic in nature, making it applicable across various professional contexts, including education, and its theory-based design ensures relevance to the JD-R model. It covers a wide range of psychosocial factors in the workplace, essential for understanding the Job Demands-Resources (JD-R) dynamics in an educational setting. As a well-established instrument, it allows for both questionnaire and nomological model validation, which is essential for reliable research outcomes. Also, it is the latest variation of the COPSOQ; it incorporates contemporary workplace issues and improvements over previous versions, making it a current and relevant tool for research.

Structured probabilistic sampling based on the employee lists from school websites ensures a representative sample, considering regional and school size variations. This helps generalize the findings more accurately across the educational sector. Data collection timing aligns with the school year's end to capture peak stress levels. This timing is crucial for capturing the true extent of job demands and their impact on teachers, providing more insightful and relevant data for the study.

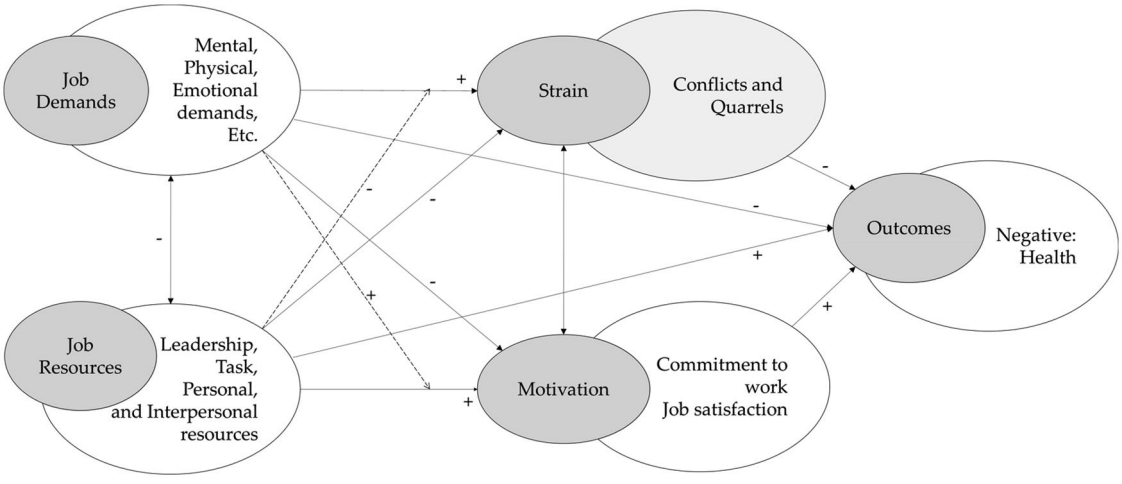

Figure 1. Theoretically proposed model.
Note: dashed line denotes moderating effect.

The research employs Partial Least Squares Structural Equation Modeling (PLS-SEM), appropriate for complex relationship analysis, supported by a thorough validation process including equivalence reliability, internal consistency, and convergent and discriminant validity assessments, providing a robust framework for exploring the JD-R model. PLS-SEM effectively handles complex models, which is essential for the JD-R framework, which involves multiple higher-order and second-level higher-order constructs. In addition, it is suited for studies where reflective measurement models are used, as is the case in this research. However, most of all, PLS-SEM is beneficial for theory building, which aligns with the study's objectives to examine the JD-R model, including interpersonal conflicts, and explore its applicability in the context of elementary school employees.

The methodology section of the research paper employs a structured and comprehensive approach to allow further replication and validation of the study. The next sub-chapters explain the questionnaire in detail, followed by the measurement, data collection, and analysis.

3.1. The questionnaire

While various instruments may be used for JD-R examination, COPSOQ questionnaires (Berthelsen et al., 2018), which cover a variety of psycho-social factors in the workplace, have become more frequently used in recent years. The COPSOQ III questionnaire is available in more than 25 languages, allowing for the comparison between countries (Berthelsen et al., 2018). The COPSOQ questionnaire's development began in 2007; the newest variation is the COPSOQ III, a generic and theory-based instrument designed for both professional and research purposes. The questionnaire underwent validation with 23,361 employees across Canada, Spain, France, Germany, Sweden, and Turkey during 2016–2017 (Burr et al., 2019), with additional validation studies in various countries (COPSOQ network, 2020) and numerous published peer-reviewed articles (COPSOQ network, 2022). Burr et al. (2019) state that COPSOQ III provides reliable and specific assessments of various psychosocial aspects of contemporary work life in diverse international contexts. Such a combination allows both questionnaire and nomological model validation.

The COPSOQ III (2021; Burr et al., 2019) questionnaire has not been previously used to validate the Job Demand – Resources model, as it has been done with the COPSOQ II questionnaire (Berthelsen et al., 2018). Furthermore, the COPSOQ-II is considered a beneficial tool for investigating psychosocial factors for school principals (Dicke et al., 2018). The COPSOQ III questionnaire has three versions: core, middle, and long. This research has considered all core questions, including questions related to Horizontal Trust, Variation of Work, Commitment to Work, Work engagement, Conflicts and Quarrels, and Self-Efficacy. To enable the comparison, the questions' codes are the same as the ones in COPSOQ III (2021).

In addition to COPSOQ III, the Work Ability Score (WAS), the first item in the Work Ability Index (Ilmarinen, 2006) and UWES CRO – 2014 (Agušaj, 2016; Schaufeli et al., 2006), was measured to enable equivalence reliability to appropriate items. The WAS measures self-assessed work ability as a single item. According to El Fassi et al. (2013), that item can be used instead of other multi-item measures.

The UWES CRO refers to 17 questions that comprise work engagement. This questionnaire has been previously translated into Croatian and validated, while COPSOQ III and WAS have not been previously translated into Croatian. Therefore, a double translation by two independent English proofreaders has been done. The complete questionnaire is available in Supplementary File 1, Table S1.

3.2. Measures

When choosing the relationships, we heavily rely on Berthelsen et al. (2018) systematization and model and the available items in COPSOQ III (aiming to use the core version primarily). Job demands are measured by Quantitative demands, Work Pace, Emotional Demands, Role conflicts, and Work-life conflicts. Leadership resources are measured by Organizational justice, Recognition, Social support from supervisors, Predictability, Quality of leadership, and Vertical trust. Task resources are reflected by Role clarity, Variation of work, Possibilities for development, Influence at work, and Work engagement. Interpersonal resources are measured by Social support from colleagues, a Sense of community at work, and Horizontal trust. Personal resources are measured only by Self-efficacy. Positive work attitudes are a substitute for Motivation in the theoretical model, which is reflected by Job Satisfaction, Commitment to work, and

Meaning of work. General health is a proxy for work ability, measured with a single item. Conflicts and Quarrels item is a proxy for the interpersonal conflicts at work.

The questionnaire enables examination of the constructs, where the variables are measured with a single item or multiple items/questions. Most questions involve Likert–type scales, and COPSOQ III guidelines define the responses' coding. For example, possible responses of Always, Often, Sometimes, Seldom, Never/hardly ever are coded 100, 75, 50, 25, and 0, respectively.

The WAS is measured on a scale from 0 to 10. The questionnaire is measured on a Likert scale, with possible responses of Never, Seldom, Sometimes, Often, and Always coded as 1, 2, 3, 4, and 5, respectively.

3.3. Data collection

Another motivation for choosing elementary school employees is that they are government employees and are listed on schools' websites. This enables the identification of the population, selection of probabilistic samples, and contact of them without breaching GDPR.

It might seem that all elementary school teachers encounter a similar work environment. However, the work environment can depend on the size of the school and the region, representing easily observable sources of heterogeneity. Therefore, the collected data contains a structured probabilistic sample of elementary school teachers.

First, the official list of 922 elementary schools was obtained from the Croatian Ministry of Science and Education website. Following the list, 881 schools' websites collected employee details (for 41 schools, the employee data was unavailable), resulting in 15856 identified employees. Based on the retrieved data, schools are systematized by size and region (Supplementary file: Table S2).

Following the structure presented in Table S2, the probabilistic sample of 4921 employees was selected for participation in the research. An e-mail was sent to all selected employees in the second week of June 2022 with the invitation to participate in the survey. The follow-up reminders were sent twice more until the end of the month. Therefore, this is a cross-sectional data collection. This timing was strategically chosen based on findings by Prieto et al. (2008), which indicate elevated exhaustion levels among teachers towards the school year's end. Although selecting this period introduces a common method bias—potentially conflating time-specific stress with general work-related psychosocial factors—it enables an in-depth examination of variable relationships during a critical, high-stress period for educators. The selection aims to capture the acute impacts of end-of-year demands on teacher well-being, acknowledging that while common method bias may influence the results, the insights garnered may shed light on significant stress and exhaustion patterns among teaching professionals.

3.4. Analyses

The analyses aim to validate the Croatian version of the questionnaire and examine the applicability of the Job Demand – Resources theory with interpersonal conflict as a mediator to the employees' health. As a part of the validation process, equivalence reliability will be examined by the appropriate items' correlation to the items used in the WAS and UWES questionnaires. The rest of the validation process will be conducted through model examinations.

The theoretical model (Figure 1) proposes multiple relationships between higher-order constructs. So, a higher-order model is required to achieve the necessary aggregation to examine the hypothesized relationships. COPSOQ III questionnaire items are used to create the Job Demands-Resource model, reflecting lower-order latent variables.

For example, JU1 and JU4 are the two items that reflect Organizational Justice. Lower-order constructs include organizational Justice, Recognition, Social Support from Supervisors, Predictability, Quality of Leadership, and Vertical Trust. In the next step, these constructs are used to create a higher-order construct, Leadership Resources. In the final model, Leadership Resources, Interpersonal Resources, Task Resources, and Personal Resources together create Job Resources (Figure 2).

Partial least squares structural equation modeling is appropriate for modeling such complex relationships (Hair et al., 2019). The analysis will be conducted using SMART-PLS, 4.0.8.2 version (Ringle et al., 2022). The previous research suggests that in creating lower-order and higher-order components, a

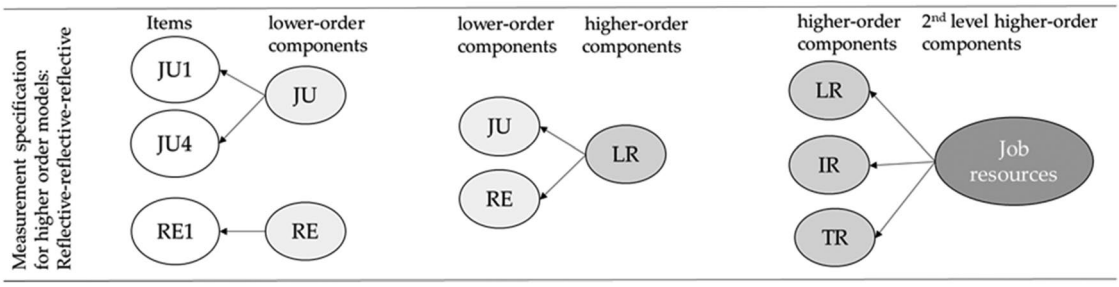

Figure 2. Measurement specification for higher order components.
Note: A sample of model variables is used to demonstrate the measurement specification.

reflective measurement model should be used (Berthelsen et al., 2018; Lattrich & Büttgen, 2020). Given that the same modeling choice coincides within different research, it can be understood as a standard approach for creating the 2nd level higher-order components in the Job Demands-Resources model. Therefore, we adopt the reflective-reflective-reflective model measurement. The complete model development using the stated approach is presented in Figure S1 (Supplementary file).

The reflective models must be examined for their internal consistency, convergent validity, and discriminant validity (Sarstedt et al., 2019; Wetzels et al., 2009). Convergent validity, collinearity, significance and relevance of path coefficients, and explanatory and predictive power must be examined for higher-order reflective models (Sarstedt et al., 2019).

Indicator loadings will be compared to a 0.7 threshold to assess the indicators' reliability. However, the indicators with loadings between 0.6 and 0.7 will be deleted only if their removal contributes to higher internal consistency reliability or convergent validity. The items retained for further analysis will be reported. Internal consistency will be assessed using Cronbach Alpha, internal consistency reliability, and composite reliability, using the typical threshold of 0.7. The convergent validity will be examined using the average variance extracted and a value of 0.5 as a minimally acceptable commonality of a construct (Hair et al., 2021). Discriminant validity will be assessed with the help of the heterotrait-monotrait ratio (HTMT) of correlations (Henseler et al., 2015), with a conservative boundary of 0.85 as a cut-off value.

Structural models will be assessed by checking for collinearity issues (VIF antecedents), and the relationships will be examined for their significance. Only statistically significant relationships will be retained and reported. In the case of a possible two-way relationship, both will be reviewed, and a higher coefficient (or a coefficient with a smaller p-value) will be reported. When more non-significant relationships occur, the removal sequence can change the significance and path coefficients; the models will be examined with and without each non-significant relationship. A variation with better quality and information criteria will be reported. The determination coefficient will reveal the explanatory power. The predictive power will be assessed using k-fold cross-validation and comparing the PLS-SEM model's root mean square error (RMSE) to the corresponding naïve linear regression model's RMSEs (Hair et al., 2021). In addition, predictive relevance (Q^2) values higher than zero will be provided as an additional argument for the predictive relevance.

4. Results

4.1. Sample description

The sample comprises 87.76% women and 12.24% men, loosely corresponding to the shares of each sex in the school employee population. The mean age is 45.42 years (SD = 9.43), with the youngest respondent at 25 and the oldest at 65. About 19% of the respondents work in small schools, 49% in medium-sized schools, and 32% in large schools. 92.1% of the respondents have a tenure contract, while the remaining 7.9% have a fixed-term contract.

The number of pupils in the classroom determines part of the working conditions for teachers. 17.8% of the respondents teach in classrooms with less than 15 pupils, 35% have 16 to 20 pupils, 30.3% have 21 to 25 pupils, and 2% work in classrooms with 26 to 30 pupils.

30.6% of respondents work as teachers in 1–4 grades, 53.1% work as subject teachers in 5–8 grades, 12.2% work as pedagogy/psychology/defectology experts, 0.3% work as administrative staff, 1.7% work as technical staff and 2% work as school principals. Most respondents (82.5%) have a graduate level of education, 12.8% have an undergraduate level, 3.5% have a postgraduate or doctoral degree, and 1.2% have elementary education.

The response rate was 6.9%, which is lower than expected. This is partly explained by the survey period, as the end of classes is usually followed by an extensive administrative workload. In addition, teachers do not need to use official e-mail addresses. If the response rate is low, the questionnaire guidelines (2021) warn about a possible lack of worker engagement in the evaluation process (especially when conducted by an HR within the company), which is a limitation of this research. However, the 343 responses that were collected allow for further analysis (Supplementary file: Table S3, Table S4).

4.2. Items comparison to UWES and WAS items

For equivalence reliability, it is common to apply two or more instruments that measure the same phenomenon or parts of the same phenomenon (Schuman & Presser, 1996). Such an approach helps researchers confirm that the items that should correlate actually do, and those that should not correlate do not.

Work engagement measured with the UWES questionnaire should have a low to moderate relationship to positive elements in the COPSOQIII (such as Job Satisfaction, Organizational Justice, or Commitment to work) and an inverse low to moderate correlation to negative elements in the COPSOQ III (such as Role conflict, Work-life conflict, or Job insecurity). However, at least a moderate correlation to COPSOQ III Work engagement items is expected.

The correlation analysis is conducted using the Spearman correlation coefficient, which reveals that the relationships mostly appear as expected. The calculated correlation coefficients between Work engagement (COPSOQ III) show statistically significant correlations to UWES items, except the 16th item in the UWES questionnaire. The highest calculated correlation coefficient is 0.668, between WE1 and the first item in the UWES questionnaire. Table S5 (Supplementary file) presents the estimated coefficients.

Work ability cannot be understood in the same way as general health. One's health can be impaired long before it notably affects work ability, especially for chronic diseases, such as cardiovascular diseases (Feißel et al., 2018). Instead, health is an antecedent of work ability. Feißel et al. (2018) also note the relationship between age and a person's health. The statistically significant correlation coefficients between age and general health (-0.259) and work ability (-0.137) confirm such an approach. Therefore, a statistically significant correlation between general health and work ability should exist, but its coefficient could be lower if the examined population is younger. The correlation coefficient between general health and work ability is 0.221 and statistically significant, indicating a weak correlation where higher general health leads to higher work ability.

4.3. Measurement models and latent variables

The modeling procedure explained in the Analyses section requires three separate assessments of the measurement model for the 2nd level higher-order model based on the repeated indicators approach and one formative model approach. That means the assessment procedure for the low-order and higher-order constructs is the same, as the constructs are created using reflective relationships with the indicators.

The parameters for the primary measurement model of low-order constructs are presented in Table S6 (Supplementary file). All retained indicators have loading higher than 0.7, ensuring indicator reliability. However, items ED3, QL4, PR1, PD2, JI3, and TM1 from the core version and items TE1, TE2, VA2, CW2, WE3, and SE2 from the long version of the COPSOQ III were removed due to lower loadings. In addition, item WF3 was removed due to a higher VIF value (over 3), which indicates possible collinearity issues. The low-order constructs have Cronbach's alpha, rho_a, and rho_c values above 0.7, confirming internal consistency. AVE values surpass a 0.5 threshold (Supplementary file: Table S6), confirming convergent

validity. HTMT values (Supplementary file: Table S7) do not point out any problems with discriminant validity (all values are lower than 0.85). The latent variables, or the low-order constructs, were derived and saved for the next-level model.

The higher-order measurement model has some indicators with loadings lower than 0.7, with the lowest being 0.631. However, removing those items led to lower internal consistency, so they were retained for further analysis. All Cronbach's alpha, rho_a, and rho_c values are above 0.7, and AVE values exceed a 0.5 threshold, thereby indicating internal consistency and convergent validity (Supplementary file: Table S8). HTMT values (Supplementary file: Table S9) allow the conclusion about discriminant validity. The procedure with the latent variables is repeated, and the 2nd level higher-order model is created.

The measurement model is evaluated similarly for the 2nd level higher-order model based on the reflective latent variable. Self-efficacy has a lower loading but was not removed due to content validity. Given the results in Tables S10 and S11 (Supplementary file), it can be concluded that the model satisfies internal consistency, convergent validity, and discriminant validity criteria.

4.4. Higher-order structural models

The higher-order model reveals no collinearity issues (Supplementary file: Table S12). There are several statistically significant relationships (Supplementary file: Table S13). The relationships indicate that Job Demands have a negative effect on Conflicts, Positive Work Attitudes, and Health, and some variables related to Resources have a positive effect on Conflicts, Positive Work Attitudes, and Health. Positive Work attitudes are the best-explained variable, with the highest determination coefficient ($R^2 = 0.574$), and health has the lowest d $R^2 = 0.164$). The Q^2-values indicate predictive relevance for each construct (Supplementary file: Table S14). Comparing PLS-SEM and LM RMSE values reveals that the model has high predictive power, with 10 out of 16 constructs having lower PLS-SEM RMSE values. Among those 10 variables are also variables of interest in this study: Conflicts and Health.

The discarded model in this iteration (2nd level) included a relationship between Job Resources and Health, leading to a lower and not significant coefficient between Positive Work Attitudes and Health and a higher p-value for the relationship between Conflicts and Quarrels and Health. Comparing the theoretical framework and information criteria led to the choice of the reported model.

The 2nd level higher-order model has no collinearity issues (Supplementary file: Table S15). In addition, statistically significant relationships enable the examination of relationships hypothesized by a theoretical model (Figure 3, Supplementary file: Table S16). The model has high predictive power (Supplementary file: Table S17). All Q^2-values indicate predictive relevance, and three out of four constructs have lower PLS-SEM RMSEs than LM RMSEs.

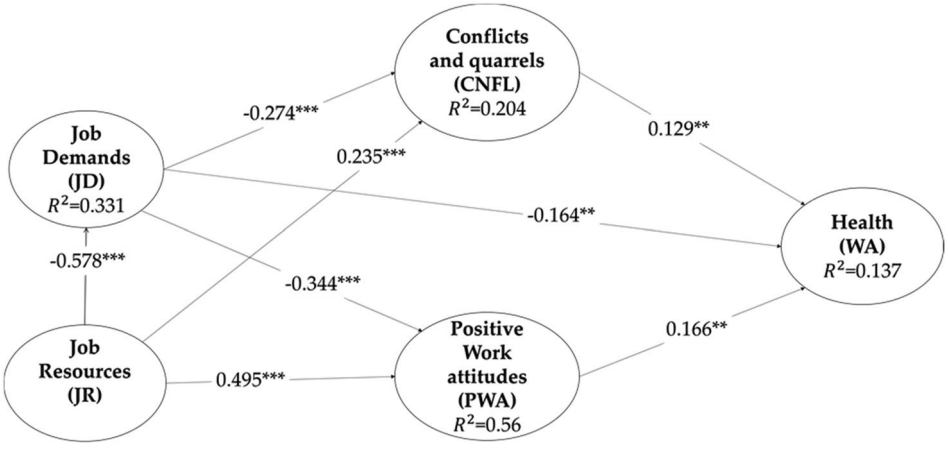

Figure 3. The 2nd level higher-order model.

4.5. Mediation analysis

Positive Work Attitudes and Conflicts and Quarrels can be observed as mediators in the Job Demands-Resources model. Additional insights reveal statistically significant indirect effects, which suggest possible mediation of the stated variables (Table 1). Initially, the analysis points to complementary mediation, where both direct and indirect effects are significant and point in the same direction (Hair et al., 2021).

However, the coefficients of the relationships between JD and CNFL and JD and WA have negative signs, while the coefficient between CNFL and WA has a positive sign. That indicates an inconsistent or competitive mediation (Hair et al., 2021) and a suppressor effect of the CNFL on the negative effects of JD on WA. The same type of mediation occurs for the relationship JD->PWA-> WA.

Analyzing the mediating effect of demands on the relationship between job resources and CNFL and WA reveals a positive indirect effect. Upon closer examination, the findings also suggest the presence of a competitive mediation. Such occurrences are not unusual and have probably led to a model revision and proposition of moderating effects (Bakker & Demerouti, 2017).

4.6. Moderation analysis

Moderation was proposed by Bakker and Demerouti (2017). We find empirical support for job demands moderation of the relationship between job resources and positive work attitudes hypothesis (Table 2). However, job resources moderation of the relationship between job demands and conflicts is not statistically significant. More extensive results are available in the Supplementary file, Tables S18–S20.

5. Discussion

At the outset of our discussion, it's essential to encapsulate the core findings and their broader implications to bridge the gap between intricate methodological processes and the overarching narrative of our study. This research delves into the nuanced dynamics within the Job Demands-Resources (JD-R) model, particularly emphasizing the role and effects of interpersonal conflicts among elementary school employees in Croatia. Utilizing the COPSOQ III questionnaire, validated for the Croatian context, and employing Partial Least Squares Structural Equation Modeling (PLS-SEM), we uncovered that interpersonal conflicts, under certain conditions, may serve a cathartic function rather than merely acting as stressors. Specifically, in environments characterized by high job resources, these conflicts potentially mobilize resources, facilitating coping mechanisms against job demands. This insight not only enriches the JD-R model's applicability but also suggests a paradigm shift in perceiving conflicts in educational settings. Through our investigation, we aim to provide a foundation for educators, administrators, and policymakers to reconsider conflict management strategies, fostering a more resilient and positive work climate. This concise summary aims to distill the essence of our findings, making the subsequent discussion more accessible and immediately relevant to readers across various domains.

This paper aimed to bridge a research gap concerning the interpersonal conflicts within the JD-R model and to validate the COPSOQ III questionnaire in the Croatian language and the nomological JD-R

Table 1. Mediation effects.

Relationship	Direct effect	Indirect effect	Product of the paths
JD -> PWA -> WA	−0.164**	−0.057**	0.009
JD -> CNFL -> WA	−0.164**	−0.035**	0.006
JR->JD->PWA	0.495***	0.158***	0.098
JR->JD->CNFL	0.235***	0.199***	0.037

Table 2. Moderation effects.

	Original sample	Sample mean	Standard deviation	P values
JD x JR -> PWA	0.120	0.118	0.027	0.000
JR x JD -> CNFL	0.059	0.059	0.052	0.250

model for the population of elementary school employees. The results are systematized in Table 3 and are discussed in line with the proposed hypotheses and previous research.

The statistically significant effect of Job Demands (JD) on Conflicts and Quarrels (CNFL) (H1) is not in line with the proposed positive relationship between JD and Strains (Balducci et al., 2011; Hakanen et al., 2006) or similar research that connects workload and conflicts (Mustomi et al., 2018). In addition, the relationship between CNFL and Health is statistically significant, but again with an opposite sign (H3).

Similar results occur for the relationship between Job Resources (JR) and CNFL (H5). Higher levels of JD lead to lower levels of CNFL, and higher levels of JR lead to higher levels of CNFL, positively affecting Health. This might indicate that CNFL acts not as a strain but as a cathartic event.

It might be that the high levels of job demand do not allow for confrontation, even when accosting is required for people to stand up for themselves and possibly alleviate some of the burdens that cause poor health. However, higher job resources allow people to confront different conflicting aspects of their job. Such an interpretation also aligns with the revealed competitive mediation effect (H11), where JD negatively affects CNFL and Health. Still, CNFL has a positive effect on Health.

While the findings may seem contradictory, interpersonal conflicts are relevant in the JD-R model because they impact various aspects of the work environment and employee well-being. Interpersonal conflicts can arise due to multiple factors, such as differences in opinions, communication breakdowns, or competing interests within the organization. These conflicts can have both positive and negative effects.

On the one hand, conflicts are expected to have negative consequences. That is true for dysfunctional conflicts characterized by hostility, aggression, and unresolved issues, leading to decreased job satisfaction, strained relationships, reduced productivity, and adverse mental and physical health effects. In such cases, Irshad et al. (2023) showed that lowered well-being caused by workplace interpersonal conflicts may result in knowledge hiding. Moreover, constant interpersonal conflicts stemming from personal clashes may deplete employees' energy for energy-consuming work and creative behavior (De Clercq & Belausteguigoitia, 2021). Similarly, Zhang et al. (2021) show that teams without internal conflicts among peers, leaders, and stakeholders are likely to enhance their psychological capital and improve performance.

On the other hand, conflicts can stimulate constructive discussions, challenge established norms, and foster creativity and innovation. In this sense, conflicts can be functional and beneficial for the organization and employees. They can lead to improved problem-solving, enhanced collaboration, and a deeper understanding among coworkers. So, these findings suggest that functional conflicts prevail among

Table 3. Systematization of the results.

Theoretically assumed relationships	Statistically significant	Expected path coefficient sign	Model path coefficient sign	Findings in line with theoretically assumed relationships
JD->CNFL (H1)	Yes	+	–	No
JR->PWA (H2)	Yes	+	+	Yes
CNFL->WA (H3)	Yes	–	+	No
PWA->WA (H4)	Yes	+	+	Yes
JR->CNFL (H5)	Yes	–	+	No
JD->PWA (H6)	Yes	–	–	Yes
JD->JR (H7)	Yes	–	–	Yes
PWA->CNFL (H8)	No	+	/	No
JD->WA (H9)	Yes	–	–	Yes
JR->WA (H10)	/	+	/	No
Theoretically assumed mediation	Statistically significant	Expected effect sign	Mediation	Findings in line with theoretically assumed relationships
JD->CNFL->Health (H11)	Yes	–	Competitive	/
JD -> PWA -> Health (H12)	Yes	–	Competitive	/
JR->JD->PWA (H13)	Yes	–	Competitive	/
JR->JD->CNFL (H14)	Yes	+	Competitive	/
Theoretically assumed moderation	Statistically significant	Expected effect sign	Computed sign	Findings in line with theoretically assumed relationships
JD x JR -> PWA (H15)	Yes	+	+	Yes
JR x JD -> CNFL (H16)	No	–	+	No

elementary school employees in Croatia, regardless of the abundance of uncivilized contacts revealed in previous research (Bilić, 2016, 2021). While we do not examine conflict strategies in this research, effective conflict management is crucial in enhancing conflict outcomes. Moreover, effective conflict management can significantly contribute to the efficiency of individuals and groups, positively driving changes and benefiting school organizations, thereby influencing the organization's long-term sustainability (Umigiarni et al., 2021). For example, Saridi et al.'s (2021) research suggests that higher education and managerial roles contribute to better conflict understanding and resolution, especially in larger organizations with more training resources, reducing work-related stress and creating a healthier work environment. In the context of our results, the higher education of most of the schools' employees and possibly prior training in conflict management may explain the findings of conflicts' positive effects on health, paving the way for a thorough examination in future research.

In addition, the findings suggest the existence of cathartic conflicts' effects and their positive effects on work ability. It is worth noting that Prieto et al. (2008) emphasized the variations in internal and external factors experienced by individuals throughout different times of the school year, suggesting the presence of additional dynamics that warrant further investigation. The timing of data collection in this study provided valuable insights into the relationships between variables during the most demanding period for teachers in Croatia, which occurred in June. Additionally, this period marked the return to in-person classes following two years of online and hybrid courses during the lockdown. This specific timing may have captured the resolution of previously disrupted relationships resulting from the unique demands of the online environment, contributing to the observed cathartic effect of interpersonal conflicts.

These findings suggest that organizations should recognize the potential benefits of functional conflicts. Conflicts can stimulate innovation, creativity, and problem-solving by fostering an environment that encourages constructive discussions, idea-sharing, and diverse perspectives. Emphasizing the importance of respectful disagreement and providing platforms for collaborative decision-making can help harness the positive effects of conflicts.

Research by Smyth et al. (2007) showed that the quality of relationships at school is significant for a range of student outcomes, including engagement, retention, and performance. Teachers and school employees can be role models for students and transfer their behaviors to them, just as managers transfer their behavior and moods to their employees.

If observed from that perspective, frequent interpersonal conflicts are not desirable, as the students' success should be the ultimate goal for the school system and its employees. Nevertheless, a certain level of conflict might be necessary to develop quality relationships, divide the resources, and get the job done (Kreitner & Kinicki, 1992; Memili et al., 2015; Mullins, 1999; Triguero-Sánchez et al., 2018).

Howard (2000) showed that if employees have a heavy workload but do not have access to or cannot mobilize resources, then their successful adaptation is threatened. Perhaps interpersonal conflicts also play a role in achieving a successful adaptation as a tool to mobilize resources. CNFL, as a proxy for interpersonal conflicts, seems to thrive with lower job demands and higher job resources, leading to a higher Health level.

Therefore, organizations should focus on reducing dysfunctional conflicts characterized by hostility and aggression. Building a culture of understanding and collaboration among employees can help prevent conflicts from escalating into dysfunctional forms. Encouraging empathy, active listening, and seeking common ground can promote better relationships and reduce the likelihood of conflicts arising from misunderstandings or competing interests.

Strategies such as promoting open communication, conflict resolution training, and creating a supportive and respectful work environment can help address unresolved issues and prevent the negative consequences of conflicts. Considering the impact of job demands and resources on conflicts, organizations should strive to provide adequate resources to employees to cope with conflicting aspects of their jobs effectively. This can include training and support, ensuring workload balance, and addressing factors contributing to high job demands. Organizations can create an environment that allows for healthier conflict resolution by addressing job-related stressors.

CNFL does not act as a typical strain, but due to its characteristics, it cannot be observed as a motivational factor, either. That means they work in a different category from the ones currently proposed by the JD-R model. However, further research must examine whether such relationships occur for other

sectors and countries or whether the revealed concept singularly applies to school employees in Croatia at a specific time of the school year. If future research confirms these findings, an additional construct, for example, 'cathartic events,' might find its place in JD-R. In addition, CNFL's effects on positive outcomes, such as productivity, remain to be further refined.

Therefore, understanding and managing interpersonal conflicts within the JD-R model is crucial for promoting a healthy work environment and maintaining positive intra-organizational relationships. Effective conflict management strategies and fostering a culture of open communication and respect can help minimize the negative effects of conflicts and harness their potential for constructive outcomes.

The consequences and implications of the revealed relationships involve changes in organizational climate and possibly students' success. However, multiplicatively, the consequences may also affect government expenditures on education and health.

The assumed positive effect of job resources on motivation (H2) is revealed through the statistically significant relationship between JR and Positive Work Attitudes (PWA), which is in line with previous research (Bakker et al., 2007; Balducci et al., 2011; Collie et al., 2019; Hakanen et al., 2006; Howard, 2000; Simbula et al., 2011). This is consistent with Hobfoll's (2001) suggestion that resources are most used when they are most needed (i.e. during periods of high job demands), such as at the end of the classes (school year).

No statistically significant relationship was revealed between CNFL and PWA (H8). However, JD's negative effect on PWA (H6) was also shown by Berthelsen et al. (2018). In addition, JD moderates the relationship between JR and PWA (H15), as Bakker and Demerouti (2017) proposed. For teachers, the majority of school employees, PWA may relate to not only resources but also well-behaved students whose parents are more involved in school life (Darmody & Smyth, 2016). Also, PWA has a positive effect on Health (H4). Such a relationship has been assumed by Taris and Schaufeli (2015) and revealed by Berthelsen et al. (2018).

It can be noticed that theoretically assumed (Taris & Schaufeli, 2015) negative relationship between Job Demands and Resources holds (H7). However, we learn that the relationship between Job Demands and Job Resources appears with a higher coefficient and smaller p-value (kept as a result) compared to the reversed relationship. While the relationship goes both ways, the effects of Job Demands on Resources are a bit more significant than the inverse relationship.

Additionally, there is a statistically significant negative direct effect of Job Demands on Health (H9), as expected but contrary to the positive effect found by Berthelsen et al. (2018). The result aligns with the research that linked high job demands and poor well-being (Hakanen et al., 2006; Lee, 2019; Leung & Lee, 2006; Skaalvik & Skaalvik, 2018). While Task resources and Self-efficacy proved to have a significant effect on Health in the higher-order model, Job Resources have a direct effect on Health only in the discarded 2nd-level higher-order model (H10), showing the benefits of the Granziera et al. (2021) approach.

The results, along with the previous research, point us toward the fact that not all job requirements may be negative, nor that all resources are motivational, as previously proposed by Albrecht et al. (2015). Should further research on aggregate models confirm the same, the premises of the JD-R ought to be revised.

Elementary school employees in Croatia require a high level of JR to withstand JD and maintain motivation and good health. In such a setting, conflicts seem to play a cathartic role; they do not hinder motivation but positively affect health. That indicates that conflicts are not necessarily bad; they are most likely functional and may act as enabling autonomy and mobilizing resources.

6. Conclusions and final remarks

6.1. Conclusion

Overall, this study contributes to the existing literature by deepening our understanding of the JD-R model, emphasizing the role of interpersonal conflicts, and uncovering the potential benefits of cathartic conflicts. The study's focus on elementary school employees in Croatia allows for a detailed examination of the JD-R model within this specific occupational group. By exploring the relationships between job demands, resources, interpersonal conflicts, and employee outcomes in this context, we better understand

the unique factors contributing to elementary school employees' well-being in Croatia. By employing the COPSOQ III questionnaire and validating it in the Croatian context, we not only expand the range of assessment tools available but also contribute to the overall robustness and reliability of the JD-R model in diverse cultural contexts. The findings provide valuable insights for organizations to manage conflicts and optimize job demands and resources, ultimately enhancing employee well-being and organizational performance. Future research should continue to explore these dynamics to advance our understanding of intra-organizational relationships further and promote healthier work environments.

In conclusion, this study makes several contributions to the field:

1. Examination of the aggregate JD-R model: This study expands upon previous research by examining the comprehensive JD-R model, which considers both job demands and resources in relation to employee motivation, strain, and well-being. By taking a holistic approach, we gain a more nuanced understanding of the complex dynamics within the work environment.
2. Utilizing the COPSOQ III questionnaire and validating it in Croatian: This study contributes to the field by employing the COPSOQ III questionnaire, a comprehensive tool for assessing psychosocial factors in the workplace. By utilizing this questionnaire and validating it in the Croatian language, we provide researchers and practitioners with a validated instrument to measure job demands, resources, and interpersonal conflicts in the Croatian work environment. This enhances the cross-cultural applicability of the JD-R model and facilitates future research on employee well-being and motivation in Croatia.
3. Exploration of the role of interpersonal conflicts: This study sheds light on the significance of interpersonal conflicts within the JD-R framework. By investigating their impact, we uncover the potential for interpersonal conflicts to affect employee well-being and work ability positively. The findings indicate that interpersonal conflicts might serve as a mechanism for mobilizing resources to cope with job demands. This highlights the importance of effectively managing conflicts to promote a healthier and more productive work environment.
4. Challenging assumptions about job requirements and resources: Our findings contribute to the challenge of the notion that all job requirements are inherently negative and that all resources solely serve as motivators. By highlighting the nuanced relationship between job demands and resources, we emphasize the need for a more subtle understanding of their effects on employee well-being. This opens up new avenues for research and calls for reevaluating traditional assumptions in the field.

6.2. Theoretical and practical implementation

The findings' theoretical implementation concerns the role of interpersonal conflicts within the JD-R model, which should be conceptualized as both a strain and a potential cathartic event. The theory can explore how conflicts, when functional, contribute to positive outcomes like creativity and problem-solving and, when dysfunctional, lead to adverse effects like reduced productivity and strained relationships. Integrating this duality into the JD-R model can provide a more nuanced understanding of workplace dynamics.

Interpersonal conflicts have the potential to positively influence the work environment by facilitating the effective management of job demands. Such insights prompt a reevaluation of conflict management strategies in educational settings, advocating for approaches that recognize and utilize the constructive aspects of conflicts. This study's implications extend to educators, administrators, and policymakers, highlighting the need for nuanced conflict management practices that contribute to a more supportive and resilient educational environment.

Practical implementation of the findings offers several guidelines for practitioners. Using reliable assessment tools, like the COPSOQ III questionnaire, can provide schools with data-driven insights into the job demands, resources, and interpersonal dynamics among staff. This information can guide the development of targeted interventions and policy decisions.

Considering the positive impact of well-managed conflicts on health and work ability, schools should invest in conflict management training for staff. This training can help educators and administrators effectively navigate and resolve conflicts, turning potentially negative situations into opportunities for

growth and improvement. Also, training for school leaders in areas such as empathetic leadership, conflict resolution, and resource management can be instrumental in creating a positive school environment.

Moreover, schools should encourage open, effective, and respectful communication. This can be facilitated through regular meetings, team-building activities, and creating channels for open dialogue. Improving communication can help in early identification and resolution of potential conflicts. Recognizing the potential benefits of functional conflicts, improved communication may create avenues for constructive debates and discussions among staff. This approach can foster innovation, problem-solving, and improved decision-making within the school.

In addition, the study suggests that higher job resources can lead to better conflict management and positive health outcomes. Schools should optimize resources, such as support systems, professional development opportunities, and effective workload management, to enhance staff well-being and performance.

The study's findings, particularly regarding the role of interpersonal conflicts, may vary across different cultural and educational contexts. Based on these findings, schools should consider their unique environments and challenges when implementing strategies.

6.3. Limitations

One limitation of the present study is that all data were based on self-reported measures. While the collected responses were sufficient for analysis, a higher response rate would have been desirable. Although the chosen methodology represents a novel approach that addresses a gap in the methodological approaches to JD-R modeling, it also poses a limitation regarding the need for a more direct model comparison. Furthermore, the study did not consider job crafting and self-undermining compared to the latest JD-R model proposed by Bakker and Demerouti (2017).

Additionally, it is important to note that Prieto et al. (2008) highlighted the differences in experienced internal and external factors, such as role conflicts and exhaustion, across different times of the school year, indicating additional dynamics that warrant further exploration. The timing of data collection for this research provided insights into the relationships between variables during the most demanding period for teachers in Croatia (June). However, that can also be observed as a common method bias. Moreover, this period marked the first return to in-person classes after two years of online and hybrid courses during the lockdown. This specific timing may have captured the resolution of previously disrupted relationships caused by the unique requirements of the online environment, which could partially explain the observed cathartic effect of interpersonal conflicts.

6.4. Future research

The findings from this study suggest several promising research directions. Future studies could employ longitudinal designs to investigate the changing dynamics between job demands, job resources, and interpersonal conflicts over time. Intervention programs to effectively manage conflicts and improve employee well-being could be implemented and evaluated. Comparative studies across various educational settings would provide valuable insights into the generalizability of the findings. Additionally, exploring the role of job crafting and self-undermining behaviors within the JD-R framework and identifying potential moderating factors that influence the relationships between these variables would further enhance our understanding. Lastly, cross-cultural studies could help assess the applicability of the findings in different cultural contexts. These research directions will contribute to advancing knowledge in the field and inform the development of strategies to enhance intra-organizational relationships and employee well-being.

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No potential conflict of interest was reported by the author(s).

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Ethical approval

The Research Ethics Assessment Committee at the Juraj Dobrila University of Pula gave their positive opinion on the research design of 'The research of psychosocial factors at the workplace' and approved the research with the decision from 20.5.2022.

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