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Article

COVID-19 Disruption and Meaningful Work: The Mediating Role of Family–Work Conflict

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Abstract: Work overload and the alteration in family dynamics caused by the COVID-19 pandemic crisis may be increasing family–work conflict, leading to the consequent decrease in meaningful work. Using the structural equation modeling of covariance, this research determines the impact of the pandemic disruption on meaningful work as mediated through family–work conflict. The sample comes from 534 men and 257 women that are full-time employees of seven public manufacturing companies in Bolivia; they were surveyed by filling out a self-report questionnaire at the companies' locations. Although no significant direct effects were found between COVID-19 disruption and meaningful work (standardized beta = 0.038, $Z = 0.756$, $p = 0.450$), there is an indirect effect when the relationship is measured through the family–work life conflict variable (standardized beta = -0.138 , $Z = -6.119$, $p < 0.001$). Implications for business management are discussed.

Keywords: COVID-19 disruption; family–work conflict; meaningful work; Bolivia; manufacturing workers



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1. Introduction

The COVID-19 pandemic has meant an acute disruption for companies, with severe medium-term consequences regarding labor productivity (ILO 2021). Similarly, workers have been affected by pandemic uncertainty and the fear of illness and death (Shanahan et al. 2020), on the one hand, and the fear of losing their job or the anxiety of adapting to new forms of work another hand (Reimann et al. 2021). The impact has been intense both in the working and personal lives of the workers. However, only a few investigations have analyzed this interaction within the pandemic context (e.g., Elahi et al. 2022; Aftab et al. 2022; Billing et al. 2023) since most studies have analyzed these variables in ordinary contexts. We hypothesize that the pandemic has significantly impacted both meaningful work and family–work conflict. For example, individuals who worked remotely during the pandemic may have experienced lower levels of meaningful work. The lack of social interaction and isolation associated with remote work may have reduced their sense of purpose and fulfillment in their work. Additionally, the pandemic has led to increased family–work conflict, as individuals struggle to balance work and family responsibilities in disrupted routines and increased caregiving demands. However, the relationship between meaningful work, family work conflict, and pandemic impact may be complex and multifaceted. For example, some individuals may have found new meaning and purpose in their work due to their efforts to address the challenges posed by the pandemic. In contrast, others may have experienced reduced family work conflict due to increased time with family members. Overall, the relationship between meaningful work, family work conflict, and pandemic impact is an area of ongoing research, therefore understanding this impact is essential for promoting worker well-being and organizational effectiveness.

In the present research, we propose a conceptual model to explain how the COVID-19 pandemic has affected the meaningful work of employees, as evidenced by including the family–work conflict as a mediating variable. Previous research has suggested that family work conflict can mediate the relationship between work-related stressors and outcomes such as job satisfaction, work engagement, and well-being (Meng et al. 2022); thus, it may also act as a mediator between pandemic disruption and meaningful work. However, the specific nature of this relationship may depend on a variety of individual and contextual factors.

Our proposal aims to address two knowledge gaps. Firstly, to test the proposed conceptual model and, secondly, to test it on blue-collar workers from Bolivia, South America. Most studies have focused on white-collar workers in Anglo-Saxons countries and in the context of remote work, but there are few studies focused on blue-collar workers who were deemed essential and who faced increased health and safety risks due to their continued work during the pandemic. Finally, researching the impact of COVID-19 disruption on meaningful work can help us understand how the pandemic has affected workers and inform strategies for promoting their well-being and engagement in the workplace.

2. Literature Review

Meaningful work can be defined as work that is experienced by an individual as significant, purposeful, and contributing to something beyond oneself. It involves a sense of connection between the individual's work and personal values, goals, and interests, and a sense of fulfillment and satisfaction in one's work (Albrecht et al. 2021; Chalofsky 2003). Meaningful work is often associated with a positive work experience, higher levels of motivation and engagement, and improved well-being (Albrecht et al. 2021; Allan et al. 2019). The concept of meaningful work has been studied in various fields, including organizational psychology, sociology, and management, and has been shown to have important implications for individual and organizational outcomes (Ouwerkerk and Bartels 2022).

For more than four decades, several authors have investigated meaningful work, leading to an evolution in our understanding of the concept. The forerunners in the study of meaningful work were Hackman and Oldham who, in 1976, confirmed it to be an experience that the worker perceives as valuable and meaningful, and that makes life worth living. Furthermore, meaningful work has been defined as a set of activities that may or may not be paid in both an objective and subjective sense (Ciulla 2005). It is also defined as a fundamental component of well-being and is associated with the degree of importance that an individual gives to their work (Rosso et al. 2010); in addition, it has been defined as being a significant experience (Bailey et al. 2017), valuable for workers (Thompson 2019), associated with autonomy (Stephan et al. 2020), significant in relationships and in contributing to one's work (Steger et al. 2012), and considerably influential on the characteristics of work and human resource management (Simonet and Castille 2020). Other definitions give greater relevance to the work itself, career, and vocation (Wrzesniewski and Dutton 2001).

The most recent definitions have a strong relationship with utility for the individual and the positive contribution to organizational results (Bailey et al. 2017; Nikolova and Cnossen 2020; Allan and Liu 2020; Stephan et al. 2020); therefore, meaningful work as an important variable is confirmed. Recent studies have confirmed the relevance of meaningful work as an intrinsic motivator and as a precedent for positive work attitudes and results (Canboy et al. 2021; Arslan et al. 2022; Gur et al. 2022). Indeed, the concept of meaningful work has been recognized not only as an intrinsic factor that generates human satisfaction, but also as an element that contributes to the quality of work life that is manifested in motivation, well-being, satisfaction, and commitment and has a significant impact on the results of the organization, mainly through customer satisfaction, a decrease in turnover, and an increase in citizen behavior (Martela et al. 2021).

Meaningful work can be defined from different dimensions; for example, from the ethical dimension (Lips-Wiersma et al. 2020), from the dimension of relationships and con-

nections (Yeoman et al. 2019; Thompson 2019), from the dimension of work characteristics (Simonet and Castille 2020; Nikolova and Crossen 2020), and from a spiritual dimension (Steger et al. 2012), among others. For this research, we define meaningful work from the axiological dimension, meaning that this variable is constituted as a set of beliefs, values, and attitudes that is based on the family nucleus and that varies according to personal experiences and situations in the work context (MOW 1987; Kubiak 2020), generating a subjective experience of value and importance for work. In this sense, meaningful work is an intrinsically valuable experience that is a source of meaning and purpose inherent in life; it is worthwhile and generates a balance between work and personal life (Allan and Liu 2020; Bailey et al. 2017; Hackman and Oldham 1976; Mitra and Buzzanell 2017; Martela and Pessi 2018). This study considers the definition of meaningful work as an intrinsically valuable experience and as a critical factor that facilitates positive outcomes in the workplace (Allan and Liu 2020).

Some studies report a significant relationship between family–work balance and meaningful work. When work demands more time, it causes conflict between work and family responsibilities (Chambel et al. 2017; Shanahan et al. 2020; Bilodeau et al. 2021; Li et al. 2021). Therefore, those with more significant family–work conflicts experience less meaningful work and vice versa. However, these data come from pre-pandemic scenarios. It is unknown if this relationship has been maintained or has worsened during the pandemic.

Family–work conflict (FWC) can be defined as a form of inter-role conflict that occurs when the demands of work and family roles are incompatible, resulting in strain and stress for the individual. It arises from the difficulties of balancing work and family responsibilities and can manifest as competing demands, time pressures, and role overload (Bragger et al. 2021).

Due to the pandemic's disruption, companies have had to lay off employees, and schools have been closed for indefinite periods, increasing the need for care at home and causing work absenteeism (Reger et al. 2020) and family–work conflict (Zhang and Bowen 2021). The confinement, the concern about infecting the family, and the changes in the usual tasks, both at work and home, may have significantly increased the family–work conflict (Organización Panamericana de la salud 2022). Since the different spheres of life can improve or increase conflict, especially in times of crisis (Greenhaus and Beutell 1985), the family usually occupies the first place in the value scale, whereas work comes second (Harpaz and Fu 2002). However, during a pandemic, the meaning of work can be questioned as a positive experience, as an experience of well-being, or as an enriching and valuable experience (Rosso et al. 2010); (Stephan et al. 2020). Meaningful work is an essential variable in post-COVID-19 scenarios since the fear of death, losing one's job, and abrupt changes in working conditions can alter its assessment and meaning.

Some researchers consider meaningful work to be found in both work and personal environments and, sometimes, overwork weakened close personal and family relationships (Oelberger 2019). It can be a profound experience associated with one's values and can be touching and even uncomfortable (Bailey et al. 2017; Schabram and Maitlis 2017). Indeed, meaningful work can negatively affect an individual's balance between work and life, appearing as a personal sacrifice by putting meaningful work over family and free time (Schabram and Maitlis 2017).

Studies on meaningful work have focused on determining its positive impact (Steger et al. 2012; Jiang and Johnson 2018) on engagement (Martela and Pessi 2018; de Crom and Rothmann 2018; Roskams and Haynes 2019), motivation (Hackman and Oldham 1974; Fouché et al. 2017; Nikolova and Crossen 2020), satisfaction (Goh and Baum 2021), and the meaning of life (Baum and Stewart 1990; Stephan et al. 2020). However, little or no research has focused on how meaningful work is affected by adverse scenarios such as the COVID-19 pandemic. Scientific evidence is almost non-existent, and its explanatory route is unknown. For that, this research proposes a model that explains the direct impact of the pandemic disruption on meaningful work and an indirect effect through the mediating variable of family–work conflict.

Proposed Model

Theoretically, family–work conflict may mediate the impact of the COVID-19 pandemic disruption on meaningful work. One reason is that meaningful work is a variable that is closely associated with work commitment (Kahn and Heaphy 2013; Demirtas et al. 2017; Jung and Yoon 2016; Jiang and Johnson 2018; Yucel et al. 2021); therefore, it can behave in a similar way. Work commitment is also affected when managing opposing priorities (Greenhaus and Powell 2006). This is why companies promote work commitment by promoting work–life balance and the life enrichment of employees (Lips-Wiersma and Wright 2012). Thus, because work implies a relationship between a person and an organization, it also causes commitment, loyalty, and dedication when the work is meaningful.

Along the same line of argument, previous research has found an inverse relationship between meaningful work and job burnout during pandemic environments (Tan and Yeap 2021); others claim that people with better mental health are more likely to perceive work as meaningful (Allan et al. 2019). In the opposite direction, for workaholic workers who worked in home offices during the COVID-19 pandemic, significant work had a negative effect due to “too much significance” (Magrizos et al. 2022). This finding reinforces the importance of the balance between personal life and work. On the other hand, it has been stated that the perception of the significance of work and pleasure at work is stronger under conditions where COVID-19 has a high influence (Pace et al. 2022).

Research carried out in “normal” times proposed that meaningful work has a high component of enjoyment (Rosso et al. 2010). However, it is still being determined if the same happens during crisis conditions. In the current pandemic, people are re-evaluating their way of understanding social dynamics and their place in the world alongside their concerns about the adverse scenarios they face that modify the value scales of individuals and organizations (Arias 2020; Miranda-Rodríguez and Saldaña-Alfaro 2021).

In times of crisis, two parallel processes can occur within the psychology of people; on the one hand, a reconfiguration of personal values, and on the other, an increase in stressors that lead to conflict. These two mechanisms can explain why family–work conflict mediates the relationship between the COVID-19 pandemic disruption and meaningful work, since in the family–work conflict variable there are two spaces, and each has its own values (which may conflict with each other more due to the pandemic) and own stressors (which may increase due to the pandemic).

The model explains two hypotheses (see Figure 1):

1. The first is the direct impact of the COVID-19 disruption on meaningful work when considering various reasons, such as the change in the dynamics of work scenarios that have generated insecurity among workers; an increase in the workload as companies have reduced staff, which implies rethinking, restructuring, and adapting to changes under new work conditions and characteristics; and the time that adjustments take (Shanahan et al. 2020; Ouwerkerk and Bartels 2022).
2. A second hypothesis is that the pandemic disruption indirectly affects meaningful work through family–work conflict, which acts as a mediating variable. In fact, due to the pandemic disruption, children and adults are locked up at home, sometimes in narrow spaces where there is no room for socialization or privacy; in addition, the resources and time dedicated to working are reduced, increasing household activities and the fear of illness. Thus, there is very likely an overload in both scenarios of competing priorities (Greenhaus and Beutell 1985). In this context, work can lose its enjoyment status, causing meaningful work to be weakened not necessarily due to the family–work conflict itself, but due to the pandemic disruption caused by COVID-19.

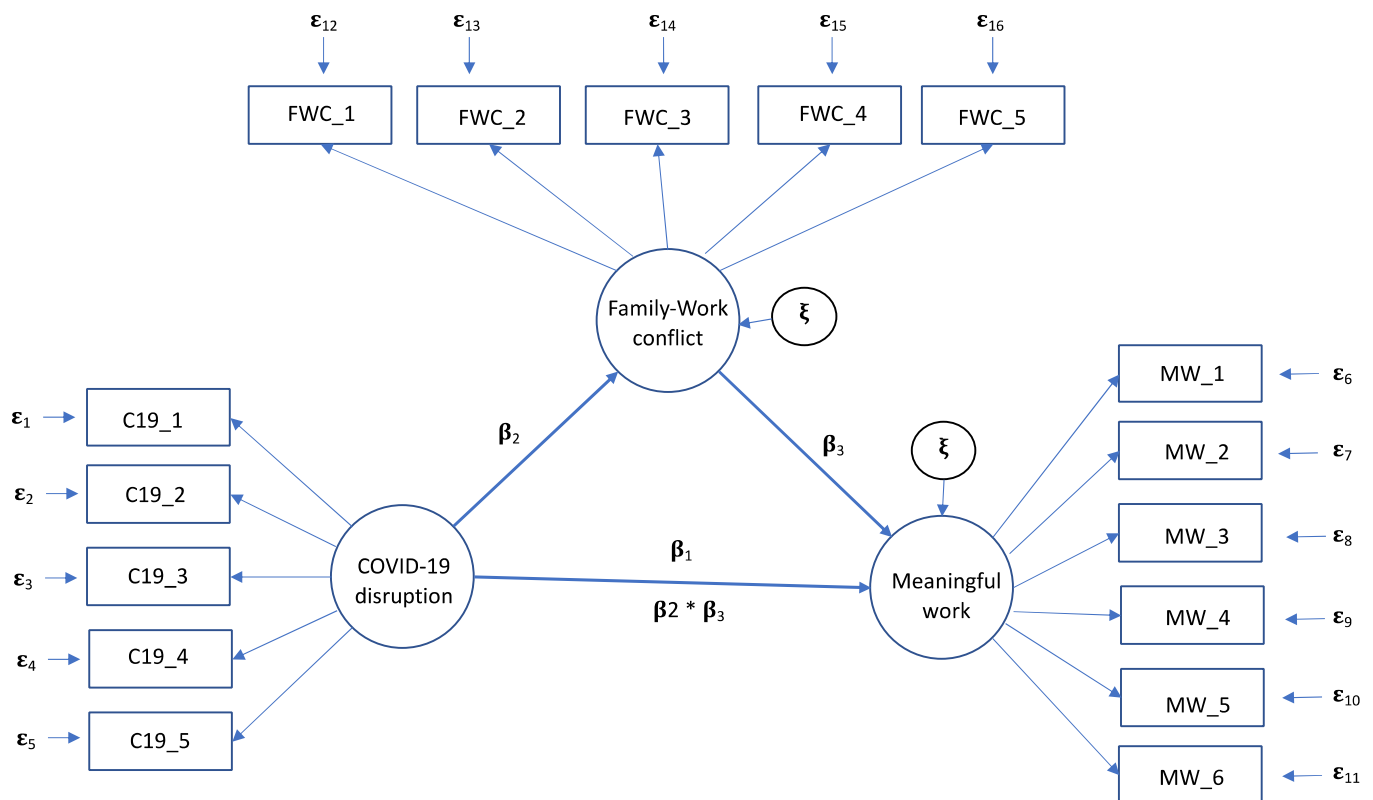


Figure 1. Hypothetical model of the relationship between COVID-19 disruption and meaningful work mediated by family–work life conflict. Note. Direct (β_1) and indirect ($\beta_2 * \beta_3$) effects of the COVID-19 disruption on Meaningful Work, through the Family–Work Conflict, controlling the measurement error of the constructs (E).

The proposed model is framed with the extended theory of demands and resources (JD-R) by considering the permeability of the limits between work and family (Minnotte 2016). Labor demands refer to the physical, social, and organizational aspects that require sustained physical or mental effort over time and that are naturally reflected in the physical and psychological wear and tear of workers, in addition to having an effect that goes beyond work limits and extends into the family environment (Demerouti et al. 2001). Work resources are also physical, social, and organizational aspects, but they are associated with organizational actions that help the worker achieve goals, reduce both physical and psychological work demands, and stimulate growth and personal development (Demerouti et al. 2001). Previously, the theory of demands and resources only included characteristics referring to the work environment; however, today it is recognized that human behaviors arise from the interaction between environmental and personal factors, causing personal resources to be integrated into the model of demands and resources (Albrecht et al. 2021).

The JD-R theory suggests that the interaction between work demands and resources can lead to different outcomes for employees. Specifically, when work demands are high and resources are low, employees may experience strain, burnout, and poor job performance. Conversely, when work demands are low and resources are high, employees may experience engagement, job satisfaction, and high levels of performance. The JD-R proposes that work demands and resources can influence well-being and performance through both direct and indirect pathways (Albrecht et al. 2021; Bauer et al. 2014).

The JD-R has been applied by researchers to examine the effects of the COVID-19 pandemic on work and employee well-being. Findings from studies indicate that job demands that emerged because of the pandemic, such as increased workload or safety concerns, can lead to higher levels of stress, burnout, and decreased job satisfaction (Meng et al. 2022). However, job resources, such as social support from coworkers or access to personal pro-

protective equipment, can serve as protective factors that buffer the negative impact of job demands (Bragger et al. 2021; Minnotte 2016). Furthermore, the JD-R acknowledges the importance of personal resources in mitigating the effects of job demands, which has become particularly salient during the pandemic. Recent research has shown that personal resources, such as resilience and coping strategies, can enhance well-being and help employees navigate the challenges posed by the pandemic (Bauer et al. 2014). In addition, social support from family and friends outside of work can function as an important personal resource in managing the demands of work during the pandemic.

In the extended theory of demands and resources, meaningful work is a resource that can be affected by work or personal/family demands. The pandemic disruption affected this resource because it has increased the demands in both scenarios, causing conflict between both in the scale of values (ethos). There are studies that have defined the meaning of work as a mechanism between work and family (Chalofsky 2003; Munn 2013; Repetti 1987). In fact, the significance of work and home can spill over and affect the other realm (Grady and McCarthy 2008; Munn 2013; Bragger et al. 2021). Other studies consider meaningful work as a mediating variable that generates labor resources and cushions family–work conflict, confirming that, when there is a favorable work context, family life may benefit and vice versa (Bragger et al. 2021; Munn 2013).

Based on the extended theory of demands and resources, the mediating effect of family–work conflict between COVID-19 and meaningful work can occur through two pathways. The first pathway is that of work–family conflict (WFC). In this case, COVID-19 has affected organizations by forcing them to increase their work demands, causing an overload of working hours, more dedication, instability, conflicts, and job insecurity (Demerouti et al. 2001), with potentially harmful consequences for the workers' personal or family quality of life. On the other hand, the second pathway is family–work conflict (FWC), where COVID-19 impacts the family or personal life of workers, with potentially harmful consequences for their working life. Indeed, in any of these two ways, a conflict of demands can be generated in both scenarios that can affect the availability of resources to reconcile them, thus altering the scale of valuation toward work (Shanahan et al. 2020; Ouwerkerk and Bartels 2022). Along the first route, the increase in work demands decreases work enjoyment, as the worker becomes overloaded and risks burnout. This explanation is consistent with previous studies that show that meaningful work is antagonistic to burnout, relating it to mental health and job satisfaction, confirming its contribution to reducing anxiety and stress, and cataloging it as a labor resource that protects the worker (Allan et al. 2019; Pace et al. 2022). Along the second route, when COVID-19 impacts the home, growing family demands reduce the resources available for work, and thus its value and meaning may also decrease; meaningful work provides a coherence that remains latent and guides decision-making, reducing the psychological tension generated by moving between work and family, providing a sense of harmonious coherence, reinforcing the lasting values of the person, and helping them achieve a sense of wholeness (Bragger et al. 2021; McGregor and Little 1998).

Indeed, people could make decisions based on their own hierarchy of values (Schwartz 2015); however, such a hierarchy can be altered by critical circumstances, such as the COVID-19 pandemic, and can also affect other personal variables. Some studies have found, for example, that when people are not clear about their destiny or experience situations of uncertainty, self-control decreases (Alquist et al. 2018) and stress levels significantly increase (Shapiro et al. 2020).

3. Methods

This study addresses a significant knowledge gap in the literature, as there is little empirical evidence on the impact of the COVID-19 pandemic on meaningful work, mediated by work–family conflict. The proposed conceptual model includes two general hypotheses: the direct impact of the COVID-19 disruption on meaningful work, and the indirect impact of the COVID-19 pandemic on meaningful work through family–work conflict. The

two overarching hypotheses are further subdivided into eight specific hypotheses. The first five pertain to the direct effects of the variables: (H1) The disruption caused by the COVID-19 pandemic has led to an increase in family–work conflict, (H2) The disruption caused by the COVID-19 pandemic has led to an increase in work–family conflict, (H3) Family–work conflict has resulted in a decrease in meaningful work, (H4) Work–family conflict has resulted in a decrease in meaningful work, and (H5) The disruption caused by the COVID-19 pandemic has led to a decrease in meaningful work. The remaining three hypotheses focus on the indirect effects between the variables: (H6) The disruption caused by the COVID-19 pandemic has led to a decrease in meaningful work through family–work conflict, (H7) The disruption caused by the COVID-19 pandemic has led to a decrease in meaningful work through work–family conflict, and (H8) The total indirect effects of the COVID-19 pandemic disruption on meaningful work occur through the joint influence of family–work conflict and work–family conflict.

To test the model, the study focused on workers in Bolivia, as the variables of interest are culturally and historically relevant in this country. Bolivia has a strong tradition of valuing family and work, making it an ideal context for examining the impact of the pandemic on these variables. Additionally, Bolivia was severely affected by the COVID-19 pandemic, with significant impacts on people’s health and the sustainability of companies. Finally, the country has high levels of domestic violence, which is a critical indicator of family–work conflict.

This study focuses on workers in manufacturing and essential services who did not telecommute during the pandemic. These workers were essential for maintaining the operation of the economy, and their experiences provide valuable insights into the impact of the pandemic on meaningful work and family–work conflict. By focusing on this population, the study provides a unique perspective on the impact of the pandemic on workers who faced increased health and safety risks due to their continued work.

3.1. Participants

The participants were full-time employees of seven public manufacturing companies in Bolivia. There were 534 men and 257 women. The sample corresponds to 59.3% of the population, with similar proportions according to sex. Respondents worked for cement companies (23.9%), distributors (23.1%), glass container producers (16.2%), paper mills (11.6%), cardboard mills (6.1%), and fertilizer companies (4.4%), among others. The age range was between 19 and 67 years ($M_{age} = 34.2$, $SD = 8.1$). Most have a current partner (69.5%) and children (63.6%).

The data were obtained in January 2022, and they were used to evaluate the experience of the year 2021. Prior to coordination with the management of each company, a face-to-face survey was administered at the companies’ facilities. The companies informed the workers several days before the survey that independent research would be carried out on the quality of working life and that each person could decide whether to participate. During the survey, the confidentiality and anonymity of the answers were emphasized, guaranteeing total secrecy and that the company authorities would only have access to a global report. Each company received a confidential report with the results specific to their organization.

Informed consent was given by all participants. The respondents were given all the necessary information to decide to participate voluntarily and explicitly, being given the option not to answer questions if they so wished.

3.2. Measures

In addition to critical demographic data, three main variables were measured in the questionnaire:

Disruption by COVID-19: A reflective scale of five items was used to ask if various aspects of their personal, family, and work lives have been affected due to the COVID-19 pandemic outbreak. This scale was developed by [Vara-Horna \(2022\)](#) to be applied in

the Bolivian labor context. Through its application in 20 companies, the scale has shown high levels of reliability for internal consistency (Alpha = 0.831) and construct validity (AVE = 0.670). The items are: “In the last 12 months, due to the pandemic ... 1. I have had to take on more domestic burdens. 2. It has affected my personal life. 3. It has affected my family life. 4. It has become more difficult to work. 5. It has affected work-life”. The respondents were to consider the last twelve months when answering and the options varied from: the same as before (0), a little more (1), and much more (2).

Family–work life conflict: A reflective scale of five items was used that investigates the conflict between work life and personal life. This scale was developed by [Vara-Horna \(2022\)](#) to be applied in the Bolivian labor context, which was based on [Haslam et al. \(2015\)](#). Through its application in 20 companies, the scale has shown high levels of reliability for internal consistency (Alpha = 0.879) and construct validity (AVE = 0.675). The frequency is expressed in a range over the last twelve months (never, hardly ever, a few times, many times, almost always, and always). It is a bidirectional scale that registers the conflicts caused in family life due to a work overflow or the conflicts and negative impacts on performance due to a personal/family overflow. The items are: “In the last 12 months ... 1. It has been difficult to achieve a balance between work life and family life. [Family conflict -> work] 2. Concerns at home have taken time away from work. 3. Obligations/concerns in family life have affected work performance. [Conflict work -> family] 4. Work concerns have taken time away from private/family life. 5. Work obligations/worries have affected family/private life”.

Meaningful work: A six-item scale measures how valuable and significant work is to life and fulfillment. This scale is based on the work by [Steger et al. 2012](#), who proposed a multidimensional model of work as a subjectively meaningful experience consisting of experiencing positive meaning in work, feeling that work is a key way to achieving meaning, and perceiving one’s work to benefit some higher purpose. In this research, we measured two dimensions: meaningful work based on individual psychological well-being and meaningful work based on a prosocial benefit. The items are: “Your job ... 1. Makes you feel happy, and fulfilled as a person. 2. Makes you feel valuable, worthy, respected, proud of yourself. 3. Means a lot to your life; it’s worth it. 4. Is useful for society. 5. Makes you feel like you are part of something important. 6. Is valuable for the company”. The Likert-type response options ranged from never to always.

As seen in [Table 1](#), the scales have adequate levels of reliability for internal consistency and construct validity. Reliability refers to the level of internal consistency that each measure has. These are more reliable the closer they are to unity. Reliability was measured using Cronbach’s Alpha and McDonald’s Omega, with values ranging between 0.821 and 0.930, demonstrating high levels of internal consistency. The true variance (AVE) of the variables is expected to be greater than 50% for the validity. In all cases, the results show high levels of construct validity. Using the confirmatory factor analysis, we confirmed the validity of the convergence of the items in a single factor for each scale with optimal adjustments. The discriminant validity analysis shows that the three scales are independent of each other since both the Maximum Shared Variance (MSV) and the Average Shared Variance (ASV) are significantly lower than the AVE.

Table 1. Reliability and validity of the measures.

Index/Scales	COVID-19 Disruption	Family–Work Life Conflict	Meaningful Work
Number of items	5	5	6
Internal consistency			
Cronbach alpha	0.817	0.888	0.926
McDonald omega	0.821	0.876	0.930
<i>Validity (1 common factor)</i>			
Average variance extracted (AVE)	0.584	0.693	0.734
Comparative Fit Index (CFI)	0.988	0.992	0.999
Tucker–Lewis In87dex	0.977	0.984	0.999

Table 1. Cont.

Index/Scales	COVID-19 Disruption	Family–Work Life Conflict	Meaningful Work
Goodness-of-fit index (GFI)	0.995	0.994	0.997
Root means square error of approximation (RMSEA)	0.071	0.064	0.001
Standardized root mean square residual (SRMR)	0.048	0.057	0.041

Note: Discriminant validity: MSV—maximum shared variance (0.118); ASV—average shared variance (0.064).

3.3. Data Analysis

First, descriptive statistics of the items were calculated (mean, standard deviation, asymmetry, and kurtosis). Spearman's correlation matrix was then calculated since the scales do not have a normal distribution and are based on ordinal items. Second, to test the existence of both direct and indirect significant relationships between the variables, structural equation modeling (SEM) was used, specifically via the Lavaan package in R Studio (Rosseel 2012) and MPLUS (Muthén and Muthén 2017). SEM is useful for determining how independent variables influence dependent variables. In that sense, researchers assume that the independent variable affects the mediator, which affects the dependent variable. Therefore, we can assume that the relationship between the independent and dependent variables is indirect (Hair et al. 2017; Hayes 2013; Baron and Kenny 1986).

In this case, to identify the precision of estimates of the standardized path coefficients (beta) and to determine the statistical significance in the hypothesis test, we used the diagonally weighted least squares with mean- and variance-corrected (WLSMV) estimator due to the ordinal nature of the items (Brown 2015); additionally, robust corrections to standard errors were utilized to correct the inefficiency of the chosen estimator (Savalei 2014). This technique estimates the corrected standard error, which permits the calculation of the Z distribution and p values of the path coefficients. These were considered significant in cases of $p < 0.05$ and when the Z score was greater than the critical value (1.96, level of significance of 5%).

To evaluate model fit, we used the chi-square test (χ^2), the RMSEA index, and the SRMR index, in which case values less than 0.05 indicated a good fit, and values between 0.05 and 0.08 were considered acceptable (Kline 2015). In addition, the Comparative Fit Index (CFI) and Tucker–Lewis Index (TLI) were used, where values greater than 0.95 indicated a good fit and 0.90 were considered acceptable (Schumacker and Lomax 2015). The measurement model was evaluated using the internal consistency of the scales of Cronbach's alpha coefficient (α) and the omega coefficient (ω ; McDonald 2013), where a value of $\omega > 0.80$ was appropriate (Raykov and Hancock 2005). Factorial loads (λ) above 0.50 were considered adequate, with the average variance estimate greater than 0.50 for each scale (Hair et al. 2017). Discriminant validity was achieved when the Average Variance Extracted (AVE) was greater than the Maximum Shared Squared Variance (MSV) or Average Shared Squared Variance (ASV) (Hair et al. 2010).

4. Results

Of the total workers, 57.7% reported that within the last 12 months, someone in their household had become ill with COVID-19. In general, the pandemic has affected both the personal and work spheres. In the first case, 54% reported that they had to take on much more domestic work at home, whereas in the second case, 50.6% reported that it has been more difficult for them to work. Regarding the impacts at work, 55% reported that they have been affected quite a lot in their working life, and 58% reported an effect on their personal or family life (see Table 2):

Table 2. How much has the pandemic affected you? (percentages).

<i>In the Last 12 months, Due to the Pandemic . . .</i>	<i>Same as before</i>	<i>A Little More</i>	<i>A Lot/Quite a Lot</i>
I have had to take on more domestic burdens.	13.1	32.9	54.0
It has affected my personal life.	6.6	35.3	58.1
It has affected my family life.	9.1	32.9	58.0
It has become more difficult to work.	17.7	31.7	50.6
It has affected my work life.	7.5	37.6	55.0

In total, 18.8% reported a high frequency of conflict between their family and work life during the last 12 months. The imbalance is more significant with the family than with work. In fact, while between 6.8 and 11.1% reported that this imbalance has affected their work with great frequency, between 17.6 and 26.7% reported an effect on their family life. (see Table 3):

Table 3. Family–work life conflict during the last 12 months (percentages).

<i>In the Last 12 months . . .</i>	Never	Hardly Ever/a Few Times	Many Times/Almost Always/Always
It has been difficult to balance between my work life and family life. <i>Family–work conflict</i>	29.0	52.2	18.8
Concerns at home have taken time away from work.	34.0	54.9	11.1
Obligations/concerns in my family life have affected work performance. <i>Work–family conflict</i>	44.2	49.0	6.8
Work concerns have taken time away from my private/family life.	24.7	48.5	26.7
Work obligations/worries have affected my family/private life.	33.5	48.8	17.6

As for meaningful work, most respondents reported a high level (See Table 4). Overall, most respondents reported experiencing meaningful work in terms of individual psychological well-being, with over 90% reporting feeling happy, fulfilled, valuable, worthy, respected, proud, and that their job was worth it many times, almost always or always. In terms of prosocial benefits, a high proportion of respondents reported feeling that their job was useful for society, made them feel part of something important, and was valuable for the company many times, almost always or always.

Table 4. Meaningful work during the last 12 months (percentages).

Your Job . . .	Never	Hardly Ever/a Few Times	Many Times/Almost Always/Always
<i>Individual psychological well-being</i>			
Makes you feel happy and fulfilled as a person.	0.8	6.9	92.3
Makes you feel valuable, worthy, respected, and proud of yourself.	1.0	7.1	91.9
Means a lot to your life; it is worth it.	0.7	5.8	93.6
<i>Prosocial benefits</i>			
Is useful for society.	0.5	2.6	96.9
Makes you feel like you are part of something important.	0.3	4.3	95.4
Is valuable for the company.	0.0	5.3	94.7

As seen in Table 5, there are significant relationships between the three variables, following the expected theoretical trajectories. The strongest relationships are between

work–family life conflict and meaningful work ($Rho = -0.408, p < 0.001$), and between work–family life conflict and the disruption of COVID-19 ($Rho = 0.252, p < 0.001$). The two dimensions of the work–family life conflict have significant inverse relationships with meaningful work ($Rho = -0.337, p < 0.001$; $Rho = -0.399, p < 0.001$). Finally, there is no relationship between meaningful work and COVID-19 disruption ($Rho = -0.067, p = 0.100$).

Table 5. Correlation matrix between COVID-19 disruption, family–work life conflict, and meaningful work.

	Mean (D.S.)	Skewness	Kurtosis	C-19D	FWLC	FWC	WFC
C-19 disruption (C-19D)	1.632 (0.689)	0.005	−0.585				
Family–work life conflict (FWLC)	2.327 (1.014)	0.570	−0.023	0.252 ** [0.177; 0.325]			
Family–work Conflict (FWC)	2.057 (0.976)	0.891	0.707	0.221 ** [0.144; 0.294]	0.842 ** [0.818; 0.864]		
Work–family conflict (WFC)	2.506 (1.188)	0.579	−0.168	0.238 ** [0.162; 0.311]	0.964 ** [0.959; 0.970]	0.682 ** [0.638; 0.722]	
Meaningful work	5.371 (0.838)	−1.715	3.063	−0.067 [−0.148; 0.015]	−0.408 ** [−0.474; −0.337]	−0.337 ** [−0.408; −0.262]	−0.399 ** [−0.465; −0.328]

Spearman’s correlation ** $p < 0.001$. [] = confidence interval.

Structural equation modeling confirms these relationships when the direct effects are calculated. The disruption caused by COVID-19 increased the family–work conflict (standardized beta = 0.282, $Z = 6.448, p < 0.001$) and the work–family conflict (standardized beta = 0.287, $Z = 6.924, p < 0.001$). On the other hand, only work–family conflict decreases meaningful work (standardized beta = −0.351, $Z = -3.149, p = 0.002$), whereas family–work conflict has the same tendency but does not have a statistically significant effect (standardized beta = −0.131, $Z = -1.127, p = 0.260$). Although no significant direct effects were found between COVID-19 disruption and meaningful work (standardized beta = 0.038, $Z = 0.756, p = 0.450$), there is an indirect effect when the relationship is mediated by the family–work conflict (standardized beta = −0.138, $Z = -6.119, p < 0.001$). Analyzing the specific indirect effects, the mediation only occurs for the work–family conflict (standardized beta = −0.101, $Z = -2.789, p = 0.005$). (see Table 6):

Table 6. Total, direct, and indirect effects between COVID-19 disruption, family–work life conflict, and meaningful work.

	Standardized Beta	S.E.	Z	Sig.	95% C.I.		Hypothesis
					Lower	Upper	
<i>Direct effects</i>							
H ₁ : C19 -> FWC	0.282	0.044	6.448	<0.001	0.174	0.373	Accepted
H ₂ : C19 -> WFC	0.287	0.042	6.924	<0.001	0.187	0.373	Accepted
H ₃ : FWC -> MW	−0.131	0.116	−1.127	0.260	−0.391	0.106	Rejected
H ₄ : WFC -> MW	−0.351	0.111	−3.149	0.002	−0.571	−0.100	Accepted
H ₅ : C19 -> MW	0.038	0.050	0.756	0.450	−0.062	0.133	Rejected
<i>Specific indirect effects</i>							
H ₆ : C19 -> FWC -> MW	−0.037	0.034	−1.102	0.271	−0.118	0.029	Rejected
H ₇ : C19 -> WFC -> MW	−0.101	0.036	−2.789	0.005	−0.174	−0.025	Accepted
H ₈ : Total indirect effects	−0.138	0.023	−6.119	<0.001	−0.188	−0.083	Accepted
Total effects	−0.100	0.049	−2.041	0.041	−0.195	−0.004	

Fit measures: $\chi^2(96) = 221.2, p < 0.001$; CFI = 0.994; TLI = 0.993; RMSEA = 0.043, $p = 0.927$; SRMR = 0.041; WRMR = 893. R^2 family–work life conflict (FWC) = 0.080; R^2 work–family life conflict (WFC) = 0.083; R^2 meaningful work (MW) = 0.208. COVID-19 disruption (C19). Diagonally weighted least squares with mean- and variance-corrected (WLSMV) estimate. Robust corrections to standard errors and test statistics.

5. Discussion

This research provides the first empirical evidence of the impact of the pandemic disruption on meaningful work, mediated by family–work life conflict. Some studies have shown partial results regarding the relationship between meaningful work and family–work conflict (Harpaz and Fu 2002), and between the family–work conflict and situations due to COVID-19 (Santillan 2020; Ghislieri et al. 2021; Barriga Medina et al. 2021; Neo et al. 2022; Reimann et al. 2021; Elahi et al. 2022; Aftab et al. 2022; Billing et al. 2023). There have also been some qualitative studies on the relationship between COVID-19 and meaningful work (Flotman 2021). However, no studies were found that relate the impact of COVID-19 to meaningful work through the mediating variable of family–work conflict.

Using the extended theory of demands and resources, it has been shown that meaningful work is a resource that can be affected by work or personal/family demands. The pandemic disruption affected this resource because it increased the demands in both scenarios, causing conflict between the two in the scale of values and decreasing the ability to enjoy either. The results have shown that the disruption caused by the COVID-19 pandemic has had a significant impact on the conflict between family and work, as well as work–family conflict. Both family–work conflict and work–family conflict were found to be increased by the pandemic disruption. Additionally, work–family conflict was found to have a significant negative impact on meaningful work, while family–work conflict had a similar but non-significant effect. Although there was no significant direct effect between COVID-19 disruption and meaningful work, there was an indirect effect when the relationship was mediated by family–work conflict. Although the specific indirect effects are stronger in the work–to–family conflict direction than in the family–to–work conflict direction, both follow the same theoretical trend. These results suggest that the COVID-19 pandemic has had a significant impact on work–family conflict and meaningful work and that the family–work conflict plays an important role in the relationship between the pandemic disruption and meaningful work.

Although the research used a broad sample of manufacturing workers, it is not feasible to generalize the findings to other types of work since the findings do not consider people who perform telework or distinguish the results by gender. Despite this, the evidence shows the effects of the second year of the pandemic (2021) on the world of work. The results show that 57.7% of workers have had COVID-19 patients at home in the last 12 months, with all the impacts that this implies. In addition, workers have experienced an overload of work, with more insecure and changing work scenarios as well as an increase in workflow. Additionally, 50.6% reported more difficulties in working because children and adults are sometimes confined in narrow spaces, as well as having more responsibilities related to home activities and the fear of illness. There is an overload in both scenarios, and thus work loses its enjoyment condition just as is lost in the home scenario and weakens the sense of meaningful work, not necessarily due to the family–work conflict itself, but because of the presence of COVID-19. This explanation makes sense if the role of theory is considered (Greenhaus and Beutell 1985), which confirms that a form of conflict occurs when opposing pressures arise from the participation in different scenarios; in this case, the family domain and work domain, which are both of importance to workers (Harpaz and Fu 2002).

The amount of time spent in work and family roles contributes to giving different meanings and values to both the work and family domains. Some overlap is found in previous work on family–work conflict and meaningful work (Bailey et al. 2017; Chambel et al. 2017; Shanahan et al. 2020; Bilodeau et al. 2021; Li et al. 2021), but not in scenarios of crisis. As a matter of fact, meaningful work has always been investigated in “normal” scenarios, which could positively bias the concept. In contrast, the results may vary in adverse scenarios, where the individual sees their very existence in danger. Regarding this, it has been found that the levels of meaningful work are high. However, they decrease in those people with higher levels of family–work conflict and who experience greater pandemic disruption, demonstrating that it is a variable sensitive to adversity.

Regarding this last point, the results indicate that during the COVID-19 pandemic, a significant proportion of blue-collar workers have found their work to be meaningful. This may be because many of these workers have been deemed essential and have continued to work despite lockdowns and restrictions, providing essential goods and services to their communities. However, the pandemic has also presented new challenges and stressors for these workers, such as concerns about workplace safety and exposure to the virus. These challenges can have an impact on their home lives, potentially leading to an increase in family–work conflict because of fears of contagion or heightened work pressures. This finding is particularly significant given that workers have reported experiencing more conflict between work and family than the other way around. Furthermore, this is supported by the fact that the direct and indirect effects on meaningful work are stronger in relation to work–family conflict compared to family–work conflict.

In times of economic crisis and hardship, individuals derive meaning from tangible rewards rather than more latent gains such as social status or satisfying experiences (Brief et al. 1995; Brief and Nord 1990; Jahoda 1981). The pernicious effect that COVID-19 has had on the variables makes it interesting to analyze the implications for organizational management, such as how to reward employees.

Organizations must understand that meaningful work is a variable that is sensitive to adverse scenarios such as the pandemic. It is important to highlight that by having high levels of meaningful work, workers obtain benefits by strengthening their identity and psychological well-being. Companies will see greater performance levels because people engage by increasing the value they place on work, generating a double pleasure: their own, manifested in their psychological well-being (Hackman and Oldham 1976), and organizational pleasure in terms of increased economic performance (Michaelson 2005; Brammer et al. 2015). However, from a broad perspective, two scenarios can be observed regarding the level of meaningful work: (1) it is based on performance in the medium and long term (low level of meaningful work), or (2) in the face of a crisis, the individual will cling more to work (high level of meaningful work) and put aside the family, which, over time, could generate a collapse. The problem is not that the worker diminishes or increases the meaning of work, but that the family–work conflict is dangerous because it generates a conflict between values in both scenarios. Faced with this conflict, the individual decides whether to lean toward family or work, whether to resolve the demands of these domains, and whether to seek a healthy balance between private family life and work. Therefore, in either of the two scenarios, the company loses.

Practical implications. Regarding the practical implications of the results, organizations must promote meaningful work but ensure that it does not generate family–work conflict. If a company wants to keep its workers and build sustainable productivity in the medium and long term, it will have to develop some flexibility. The above considers that the positive meaning of meaningful work can be reversed when it is excessive (Magrizos et al. 2022). This may sound antagonistic in times of crisis when the worker is expected to be more committed to keeping the company alive. Still, a dose of assertive flexibility is required from the organization (Aftab et al. 2022). From what has been said, organizations should consider creating socially favorable environments in crisis scenarios and the post-COVID-19 pandemic world (Zhang and Bowen 2021; Lysova et al. 2019; Rothbard and Edwards 2003) to strengthen training programs. Work–family counseling reduces the impact of the pandemic disruption and prevents these effects from spreading, leading to the ability to enjoy work or achieve meaningful work.

Limitations and future directions. Firstly, this study was conducted during the COVID-19 pandemic, which presents unique challenges for individuals and organizations. To enhance the generalizability of the findings, future researchers may consider replicating this study in post-pandemic contexts to examine the relationships among COVID-19 disruption, family–work conflict, work–family conflict, and meaningful work hold across diverse settings. Secondly, this study revealed that family–work conflict and work–family conflict had different effects on meaningful work, and only the work–family conflict mediated the

relationship between COVID-19 disruption and meaningful work. To gain a more nuanced understanding of these relationships, researchers may explore potential moderators that may influence these relationships. For example, it could be that the relationship between family–work conflict and meaningful work is stronger for women than for men, or that the relationship between work–family conflict and meaningful work is stronger for people in certain types of jobs. Lastly, this study was cross-sectional, capturing data at a single point in time. To establish the temporal nature of these relationships and to explore potential causal pathways, it is essential to conduct longitudinal studies that collect data over time.

6. Conclusions

In conclusion, this research provides empirical evidence of the impact of COVID-19 disruption on meaningful work, mediated by family–work conflict. Previous studies have explored the relationship between meaningful work and family–work conflict, as well as between family–work conflict and the COVID-19 pandemic. However, this study is the first to investigate the relationship between COVID-19 disruption, family–work conflict, and meaningful work. The findings indicate that work–family conflict has a significant mediating effect between pandemic disruption and meaningful work. The research is unique in that it focuses on blue-collar workers in Bolivia, who are essential workers and have faced increased health and safety risks during the pandemic.

The results show that the pandemic has affected both work and personal domains, creating conflict between the two and decreasing the ability to enjoy either. This reduction in meaningful work is not necessarily due to family–work conflict alone but is a result of the presence of COVID-19. Organizational management must understand that meaningful work is a variable that is sensitive to adverse scenarios, such as the pandemic. Companies must ensure that they promote meaningful work while ensuring that it does not generate family–work conflict. In this way, organizations can create a socially favorable environment that strengthens training programs, reduces the impact of pandemic disruption, and prevents the negative effects from spreading. By doing so, they can achieve sustainable productivity and promote worker well-being.

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