

# The impact of autonomy and temporal flexibility on individuals' psychological well-being in remote settings<sup>1</sup>

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Gabriele Boccoli - Andrea Sestino - Luca Gastaldi  
Mariano Corso

## Abstract

**Purpose of the paper:** This empirical study investigates the relationship between job autonomy, temporal flexibility and the psychological well-being of employees, as represented by work engagement and job satisfaction, and mediated by work-life balance within a forced remote working context.

**Methodology:** A quantitative approach was adopted. The data was gathered through a survey administered to 1,550 workers during the lockdown and analyzed through Structural Equation Modelling.

**Findings:** We show that temporal flexibility and job autonomy enhance the work-life balance of employees and, through the mediation of this construct, positively affect the psychological well-being of employees, measured in terms of work engagement and job satisfaction.

**Research limits:** The present research presents some limitations from both theoretical and methodological perspectives. Although temporal flexibility directly impacts work-life balance, this relationship could also be examined through the mediating role of job autonomy. The measure scales adopted in the scientific literature were modified in line with the guidelines provided by the investigated organization, thus partially changing their robustness.

**Practical implications:** Our research also provides useful implications for managers who must tackle the challenges of remote working that emerged during the pandemic and will characterize the new conception of normal after COVID-19.

**Originality of the paper:** This study is the first to investigate the impact of the only factors related to flexibility that were experienced by employees during lockdown on two components of psychological well-being, i.e. work engagement and job satisfaction, through work-life balance.

*Key words:* job autonomy; temporal flexibility; work engagement; job satisfaction; boundary theory; well-being; forced remote working

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## 1. Introduction

COVID-19 forced employees to stay and work at home in the attempt to reduce social contact and contagions, thus dramatically reshaping individuals' lives (Wang *et al.*, 2021), and imposing the adoption of remote working practices (Hu, 2020; Kniffin, 2020). This scenario entailed negative impacts on employees' work-life balance, often generating an intensification of work (Kelliher and Anderson, 2010) that affected their psychological well-being (Prasada *et al.*, 2020). Distress, depression, and anxiety, fuelled by high levels of uncertainty and social isolation, led to a rapid deterioration not only of working conditions (Pirzadeh and Lingard, 2021), but also of individual commitment and performance (Ozcelik and Barsade, 2018).

More specifically, forced remote working has led individuals to experience more integration between their work and family roles. The transition from one social identity to another one generally requires low contrast in roles and permeable and flexible boundaries (Ashforth *et al.*, 2000). Professional and family roles are usually highly differentiated and characterized by few cross-role interruptions (Nippert-Eng, 1996). As a consequence of the integration of these roles, employees may have experienced work-family conflicts, resulting in the risk of no longer being able to properly engage in their own professional roles. During the pandemic, this situation was mainly enabled by the fact that individuals had to perform their professional role in their own home, i.e. the physical environment in which they usually only perform their family role.

Not all employees, however, experienced these negative issues. Several individuals reported some benefits deriving by forced telework (Hu, 2020), e.g. highlighting the extreme reduction in commuting times, safer working environment, and increased time for family and leisure activities (Murmura and Bravi, 2021; Pirzadeh and Lingard, 2021). For instance, a study conducted by Ferdous and colleagues (2021) on 293 employees of an Australian for-profit organization demonstrated that the implementation of flexible practices is positively associated with the well-being and negatively associated with turnover intention of employees thanks to a greater work-life balance.

Which factors discriminate between these two scenarios? This paper aims to answer this question by showing that temporal flexibility and job autonomy enhance the work-life balance of employees and, through the mediation of this construct, positively affect their psychological well-being, measured in terms of work engagement and job satisfaction.

We contribute to organizational behaviour literature in two main ways. First, we highlight how flexible practices may positively influence the psychological well-being of employees through a good balance of work and private life within a forced remote working context. We suggest that temporal flexibility, combined with job autonomy, may mitigate all the issues connected to the integration of roles and the related work—family conflicts that could arise while working at home. On one hand, we suppose that temporal flexibility may decrease the blurring of roles generated by working in the same space in which we live on a daily basis (Ashforth

*et al.*, 2000). On the other hand, we believe that job autonomy may help individuals smoothly transition from a social role to another. Secondly, we demonstrate that the work-life balance generated through these forms of flexibility could lead individuals to higher levels of psychological well-being. Past studies argued that when individuals work from home they may encounter difficulties in engaging in their professional roles as well as being satisfied with their jobs (Rothbard *et al.*, 2005 Ashforth *et al.*, 2000). Our results show that temporal flexibility and job autonomy have helped individuals to handle their social roles, which in turn resulted in achieving better levels of psychological well-being. Finally, we provide suggestions for managers who intend to foster employees' psychological well-being within remote settings by exploring the hedonic and eudaimonic connotation of working activities.

The paper is organized as follows: in the next section, we present some fundamental concepts that were considered in our research and the hypotheses we tested. Then, we describe the methods through which we assessed these hypotheses. In the fifth section, the results are presented to introduce implications for practitioners and academics. Finally, we conclude our paper by highlighting some limitations of our work, together with some suggestions for future research.

## 2. Theoretical background

### 2.1 Role transitions and the relevance of work-life balance

By forcing remote working, COVID-19 highlighted the need to better understand how to reconcile professional and personal life. The pandemic forced individuals to work from home, thus pushing them to integrate job and family roles.

Role identities are social constructions that refer to the goals, values, beliefs, norms and interaction styles that are connected to a specific role played by an individual within a group and/or institution (Stryker, 1980). In line with boundary theory (Ashforth *et al.*, 2000), the integration of job and family roles experienced by employees during the pandemic may have generated the blurring of roles and possible work-family conflicts (Rothbard *et al.*, 2005). The low permeability and flexibility characterizing job and family roles may lead individuals to encounter difficulties in handling this situation. The transition of individuals into their professional role within the physical environment that is designated to their family role may have led employees to have encounter difficulties in engaging in their professional roles (Ashforth *et al.*, 2000). At the same time, such difficulties may lead individuals to gain less satisfaction from their job.

In other words, forced remote working has generated a situation in which individuals had to concurrently perform professional and family roles, thus causing potential difficulties in balancing them.

Work-life balance, intended as the ability to balance the work and private spheres, represents one of the main factors that influence job satisfaction (Lookwood, 2003) and has therefore drawn great attention

from managerial research (see Sirgy and Lee, 2018). This construct has a double definition: one in terms of enriching satisfaction and the other in reducing conflicts. The first is defined as “*achieving satisfying experiences in all life domains, and to do so requires personal resources such as energy, time, and commitment to be well distributed across domains*” (Kirchmeyer, 2000, p. 81). However, a person’s domain is composed of several spheres that might be in conflict if they are not managed properly. As stated by Sirgy and Lee (2018) in fact, work-life balance is “*a high level of engagement in work life as well as nonwork life with minimal conflict between social roles in work and nonwork life*” (p. 232).

Studies have demonstrated that when employees are able to reduce conflicts in their social roles, thus showing high levels of work-life balance, they achieve positive personal outcomes (Sirgy and Lee, 2018). Being engaged in work life is not sufficient. There must be an equal engagement in non-work life (Voydanoff, 2005). On the other hand, role conflict reflects the degree to which role responsibilities in two life domains are incompatible (Greenhaus and Beutell, 1985) and that resources are used to meet the demands of one role at the expense of another (Sirgy and Lee, 2018). Individuals with a high engagement in different life domains experience an augmentation of power, prestige, resources, and emotional gratification from their multiple roles (Sieber, 1974). These roles give a sense of role privileges, overall status security, resources for status enhancement, enrichment of the personality, and ego gratification (Sieber, 1974). Thus, individuals that are highly engaged both in non-work and work life can access resources that are not available to those who are mostly focused on work life (Rozario *et al.* 2004). Individuals who perceive having more control over their work, more schedule flexibility, and more support from their employers, may exert better work-life balance (Kinman and Jones, 2008). Several studies (e.g., Mas-Machuca *et al.*, 2016) confirm this consideration by demonstrating how employee work-life balance is positively related to work engagement (Haar *et al.*, 2014).

Based on the above, we predict that organizational factors, such as employees’ autonomy and time flexibility, may impact work engagement and job satisfaction. However, we also suggest that individual-related psychological factors may influence such relationships, especially in terms of work-life balance, in assuring a positive mental state and psychological well-being in personal and work life. Accordingly, in the following sections, the possible variables influencing this relationship are discussed, together with the main hypotheses building our conceptual framework.

### 2.1 Flexible work arrangements and temporal flexibility

The introduction of more flexible work arrangements has become an important managerial objective (Deery and Mahony, 1994). Recently, the increase in flexibility at work has been one of the most interesting trends for scientific and managerial practices, which showed that flexibility has a positive impact on the achievement of organizational goals (e.g., as in Beltrán-Martín *et al.*, 2008).

The concept of work flexibility, from a holistic perspective, may be reconducted to the possibility of managing one's own work in terms of space and time (for a review on this, see Kumar *et al.* 2021). More specifically, the literature refers to flexible work arrangements as the “*work options that permit flexibility in terms of where work is completed, often referred to as telecommuting or flexplace, and/or when work is completed, often referred to as flextime or scheduling flexibility*” (Allen *et al.*, 2013, p. 345).

One of the major benefits of flexibility is an increase in work-life balance, since flexible work arrangements enable employees to decide how and where to allocate their time, attention, and energy resources, thus reducing the strain of balancing different life roles (Allen *et al.*, 2013). More specifically, temporal flexibility could refer to the concept of flexible working hours, which includes a series of sub-concepts such as schedule flexibility, flextime, telecommuting, and shift work (Michel *et al.*, 2011). Flextime provides the freedom to manage working hours in relation to employees' personal needs (Baltes *et al.*, 1999). Schedule flexibility, instead, is more based on days off and working days. Among the most widespread forms, agile work (or smart working) is a method of execution of the employment relationship characterized by the absence of time or spatial constraints (Raguseo *et al.*, 2016; Neirotti *et al.*, 2019) and an organization of work based on phases, cycles, and objectives that are established by means of an agreement between employees and employers (e.g. as in Mubaroq *et al.*, 2020); coworking is a working style that involves sharing a work environment (e.g., an office) while maintaining independent activity (e.g., as in Amir, 2020); and time flexibility, consisting in the possibility of managing one's working hours independently, allows a fairer and more sustainable distribution of the workload and discourages obsessive work, which is never highly productive (Bal and De Lange, 2015).

Thus, flexible working approaches may allow employees to vary the starting and finishing time of their work day, and choose when to do overtime or take a day off. Both companies and employees can benefit from this practice. Offering temporal flexibility may signal that the organization is supportive of employees' personal needs (Casper and Buffardi, 2004).

This opportunity may create more attractiveness and increase employees' well-being. In fact, organizations that provide temporal flexibility are perceived as more attractive than organizations that do not offer it (Schmoll and Süß, 2019). Flexible working-time arrangements increase job security and flextime policies are likely to provide employees with a greater sense of control (Kossek *et al.*, 2006). This may promote better work-life balance by allowing employees to vary their schedules according to their personal needs (Kossek *et al.*, 2006).

Moreover, previous literature reveals the positive influence of time flexibility on business performance (Bray *et al.*, 2018). Time flexibility positively influences work engagement, productivity (Baltes *et al.*, 1999), job satisfaction and organizational commitment by increasing the work-life balance and helping workers feel more autonomous and valued (MacEachen *et al.*, 2008). Allen *et al.* (2013) highlighted that temporal flexibility is most strongly related to the achievement of work-life balance (Allen *et al.*, 2013) by enabling employees to better manage their other

spheres of interest, reduce the time they spend commuting to and from the workplace, and increase personal productivity.

Nevertheless, some scholars do not consider this kind of flexibility as a direct means to achieve work-life balance, but rather a more an indirect one. More specifically, employees' work-life balance is achieved thanks to the autonomy deriving from the ability to choose when to work, and therefore does not lie in time flexibility itself (Amir, 2000; Clark, 2001; Bohlen and Viveros-Long, 1981). Most of the studies that have focused on the relationship between temporal flexibility and work-life balance have investigated this connection in combination with spatial flexibility (Allen *et al.*, 2000; Allen *et al.*, 2013). We suppose that also during the pandemic, when employees were forced to stay at home and experienced only temporal flexibility, this relationship could have been valid. Thus, we predict that:

*H1. Temporal flexibility positively influences individuals' work-life balance in a remote working context.*

## 2.2 Job autonomy

Individuals' autonomy has been recognized as one of the basic human needs and an important driver of intrinsic motivation and well-being (Ryan and Deci, 2000). Autonomy is one of the five core job-related characteristics, together with variety, task identity, task significance, and feedback of work enrichment (Hackman and Oldham, 1975). Job autonomy is characterized by two main aspects. The first concerns the level of autonomy that workers need to control the conditions of their own work, namely operational flexibility (Clark, 2001). This concept also includes the autonomy to decide how work is to be carried out without unnecessary monitoring or restrictions (Bailyn, 1997). The second one concerns the level of autonomy that the company provides to the worker. Accordingly, the literature (Hackman and Oldham, 1975) refers to Autonomy as "*the degree to which the job provides substantial freedom, independence, and discretion to the employee in scheduling the work and in determining the procedures to be used in carrying it out*" (p. 162).

Job autonomy enables individuals to feel more responsible for both achievements and failures, thus leading them to higher levels of personal satisfaction (Gözükara and Şimsek, 2015). Task autonomy at work and related employees' responsibilities have been long recognized as contributing to the improvement of the performance of both individuals and team and employee satisfaction (Janz *et al.*, 1997). Previous studies have demonstrated that autonomy is able to positively influence individuals' performance, engagement, and job satisfaction (Schwalbe, 1985).

In line with the self-determination theory, when employees have the opportunity to experience more autonomy, they are able to satisfy one of their most important and intrinsic psychological needs, which leads them to feel more satisfaction, motivation and engagement in their work roles. Different studies have demonstrated the positive impact of job autonomy on work-life balance within a work context in which employees could

experience different flexible policies, including spatial and temporal flexibility (Badri *et al.*, 2020; Mas-Machuca *et al.*, 2016).

In this case as well, we suppose that also during the pandemic, when employees were forced to stay home, therefore experiencing only temporal flexibility, job autonomy could positively influence the work-life balance. Based on the above, we hypothesize that:

*H2. Job autonomy positively influences individuals' work-life balance in a remote working context.*

### 2.3 Psychological well-being, work engagement and job satisfaction

The topic of employee well-being is becoming increasingly relevant in managerial studies (Grant *et al.*, 2007; Salas Vallina and Alegre, 2018). From a holistic perspective, we can identify three core dimensions of well-being, i.e. physical, psychological, and social (Grant *et al.*, 2007).

During the pandemic, most employees experienced forced remote working, thus reporting elevated psychological distress, depression, and anxiety, which were attributed to feelings of uncertainty about the future and financial concerns. The psychological strains and feelings of social isolation can lead to deteriorating working conditions (Pirzadeh and Lingard, 2021), commitment and performance (Ozcelik and Barsade, 2018). Therefore, in this study we decided to investigate if temporal flexibility and job autonomy were able to mitigate these work challenges and positively influence the psychological well-being of employees through their increase in work-life balance within this forced remote working context.

Psychological well-being is composed by two components: hedonic and eudaimonic (Ryan and Deci, 2001). The hedonic component concerns the subjective experiences of pleasure, or the balance of negative and positive feelings and thoughts. The eudaimonic component concerns the fulfilment of human potential (Grant *et al.*, 2007). Although many previous studies focused mainly on one of these two components, in this study we considered psychological well-being from both perspectives, thus investigating work engagement from a eudaimonic viewpoint and job satisfaction from a hedonic one (Grant *et al.*, 2007).

The first relevant contribution on engagement is attributed to Kahn (1990), who defined it as “*the harnessing of organisation members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances*” (p.18). Thus, an individual's engagement seems to be influenced by features of the job, the people with whom an employee interacts, and the organizational context. Schaufeli *et al.* (2002) conceptualized work engagement as a single separate construct, defining it as “*a positive, fulfilling, work-related state of mind that is characterised by vigour, dedication, and absorption*” (p. 74).

Empirical studies have demonstrated that work engagement enhances the role performance of employees, which entails advantages for both individuals and organizations (Ozyilmaz, 2019; Byrne *et al.*, 2016; Bakker *et al.*, 2012; Rich *et al.* 2010). Furthermore, it has been shown that work

Gabriele Boccoli  
Andrea Sestino  
Luca Gastaldi  
Mariano Corso

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engagement also has a relevant impact on extra-role performance, such as organizational citizenship behaviour (Rich *et al.* 2010; Zhong *et al.* 2016), as well as on job satisfaction (Haynie *et al.*, 2016).

Few studies have analyzed the relationship between work engagement and remote working, demonstrating that the latter, which is characterized by the use of alternative workplaces and technologies, positively impact work engagement especially by enhancing employees' sense of autonomy, one of the key antecedents of engagement (Griffith *et al.*, 2015). A study conducted by Bal and De Lange (2015) demonstrated that the availability and use of flexible HR practices positively impact WE and performance. Interestingly, recent studies have also shown that emerging new ways of working characterized by temporal and spatial flexibility may positively influence employees' work engagement (Gerards *et al.*, 2018).

Job satisfaction and work engagement are strictly connected. More specifically, job satisfaction refers to "*how an individual feels about his or her job and various aspects of it usually in the sense of how favourable, how positive or negative, those feelings are*" (Rainey, 2009, p. 298). According to Locke (1976), it is a self-reported emotional state deriving from how the individual's needs are fulfilled by the work environment.

Satisfaction depends on several factors such as personality, the influence of society, the situation in the workplace and values, which differ from one individual to another (Locke, 1976). This means that something that may satisfy one employee may not affect - or even dissatisfy - another. However, Johnson (2012) points out that job characteristics are the main source of employee satisfaction.

Job satisfaction is related to various performance indicators. Satisfied workers come to work on time, are more productive, and live happier and healthier lives (Vigan and Giauque, 2016). Moreover, job satisfaction has a positive impact on work engagement. Looking closely at this interaction, according to what was stated by Guglielmi *et al.* (2016), there is a mutual influence between job satisfaction and work engagement. This not only means that job satisfaction may be an outcome of work engagement, but also vice versa. It is also possible that satisfied employees can identify themselves more easily with their job and be strongly committed to their tasks (Guglielmi *et al.*, 2016). Job satisfaction has a positive impact on organizational productivity by reducing absenteeism and turnover (Spector, 1997). A satisfied person is a more successful individual who is able to perform more efficiently, thus achieving the goals of the organization and contributing to its effectiveness (Gorenak *et al.*, 2020). In addition, employees put forth more work effort, are more efficient, and go more to the point when companies offer benefits. The most recognized benefits consist in better opportunities for employees to participate in decisions, greater emphasis on high level skills, more opportunities for training, greater autonomy and a structure that provides workers with incentives, such as performance-related payments (Appelbaum *et al.*, 2000).

Previous studies have demonstrated how work-life balance is able to positively impact on job satisfaction by mainly focusing their attention on the hedonic perspective of psychological well-being (Kossek *et al.*, 2014). These studies were conducted within flexible workplaces in which



employees experienced both temporal and spatial flexibility, which was mediated by the implementation of digital solutions (Kossek *et al.*, 2014).

Given all these considerations, we suggest that the psychological well-being of employees, represented by work engagement and job satisfaction in this study, may be positively predicted by better work-life balance, which in turn is influenced by autonomy and temporal flexibility, the two key elements experienced by employees during the pandemic. Thus, we propose the following hypotheses:

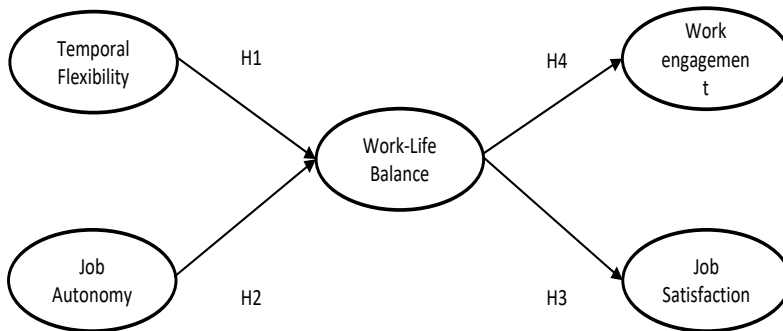
*H3. Work-life balance positively influences individuals' work engagement in a remote working context.*

*H4. Work-life balance positively influences individuals' job satisfaction in a remote working context.*

### 2.4 Model and hypotheses

Considering the predicted hypotheses, the proposed conceptual framework is provided in Figure 1.

*Fig. 1: The proposed conceptual framework*



Source: our elaboration

## 3. Methodology

### 3.1 Research setting, participants, and procedure

The research model was tested using data gathered through a survey that was administrated during October 2020 among the “Vigili del fuoco” (from now on referred to as “VVF”), the Italian institution for fire-fighting and rescuing that implemented remote working practices during the COVID-19 pandemic. We focused on this research setting by acknowledging how, during the time of pandemic healthcare, security and safety operators were most affected by psychological damage due to the stressful situation (Babore *et al.*, 2020).

VVF is a public administration that directly depends on the Ministry of the Interior. The institution is composed by eight central directorates, eighteen regional offices and one hundred provincial commands, with around eight hundred stations throughout the country.

The questionnaire was distributed through an e-mail in which the aim of the research was explained while ensuring employees of the anonymity of the gathered data. This choice was made to protect participant anonymity and reduce evaluation apprehension. The questionnaire was articulated in two parts: the first consisted in questions on demographics (e.g., age, gender, units, etc.) and on whether or not they had experienced remote working. The second part consisted in questions on the investigated constructs, i.e. temporal flexibility, job autonomy, work-life balance, work engagement and job satisfaction.

The questionnaire required approximately 10 minutes to be completed. We gathered a total of 1,550 answers out of 8,325 employees who were involved in the study, thus showing an interesting response rate (19%) and representativeness of the entire population in terms of age and gender. Of course, we only considered the workers who had experienced remote working. The final sample was composed by 793 women (51%) and 757 men (49%), where 49% of the participants were between 50 and 59 years of age. Of this final sample, 1,206 workers (78%) belonged to the management/ logistic unit whereas the remaining 344 workers (22%) belonged to the IT unit.

### 3.2 Measures and scales

*Temporal flexibility* was measured by means of two items which had been adapted from the work culture scale developed by Campbell Clark (2001). Such sample items included the following: "I am able to arrive and depart from work when I want to". The participants could answer the items using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). All items were summed to form one index of temporal flexibility, showing good internal consistency (Cronbach's alpha = 0.73).

*Job autonomy* was measured through three items that had been adapted from Morgeson and Humphrey (2006). Such sample items included the following: "The job gives me considerable opportunity for independence and freedom in how I carry out the work". The participants could answer the items using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). All items were summed to form one index of job autonomy, showing acceptable internal consistency (Cronbach's alpha = 0.69).

*Work-life balance* was measured using three items that had been adapted from Duraipandian (2014). Such sample items included the following: "I am successful in managing my home and work demands". The participants could answer the items using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). All items were summed to form one index of work-life balance, showing good internal consistency (Cronbach's alpha = 0.83). Work Engagement was measured by means of three items that had been adapted from the Utrecht Work Engagement

scale (UWES; Schaufeli *et al.*, 2002; Schaufeli *et al.*, 2017). Such sample items included the following: “At my work, I feel I am bursting with energy”. Participants could answer the items using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). All items were summed to form one index of work engagement, showing good internal consistency (Cronbach's alpha = 0.74).

*Job satisfaction* was measured by using four items that had been adapted from the MOAQ scale developed by Camman *et al.* (1979). Such sample items included the following: “The work I do on my job is meaningful to me”. Participants could answer the items using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). All items were summed to form one index of job satisfaction, showing good internal consistency (Cronbach's alpha = 0.78).

In line with previous literature (Breevaart *et al.*, 2014), socio-demographic variables such as gender and age were included as control variables. Data goodness was tested through the goodness-for-fit-test.

### 3.3 Statistical analysis

First, descriptive statistics were used to show a general overview of the considered constructs through the means, standard deviations, correlations, and frequencies of the analyzed variables.

Second, Structural Equation Modelling (SEM) was used to test the hypotheses and the relationships among the various constructs. All analyses were performed in Stata 14. Additionally, Comparative Fix Index (CFI; Bentler, 1990), the Standardised Root Mean Square Residual (SRMR), and the Root Mean Square Error of Approximation (RMSEA; Steiger, 1990) were reported to test the model fit. Moreover, the SEM model was chosen in the attempt to test a model that is suitable for studying the relationships between the observed variables and the latent variables (which are constructs that are not observed but derived from the combination of the observed variables, as specified by Babin *et al.*, 2008).

The CFI is considered the best approximation of the population value for a single model, with values that are greater than or equal to 0.90, which is considered indicative of a good fit (Medsker *et al.*, 1994). The SRMR is a standardized summary of the average covariance residuals. A favorable value is less than 0.10 (Kline, 1998). The RMSEA is a measure of the average standardized residual per degree of freedom. A favorable value is less than or equal to 0.08, and values less than or equal to 0.10 are considered “fair” (Browne and Cudeck, 1989).

## 4. Results

### 4.1 Descriptive statistics

Table 1 presents the means, standard deviations and correlations of the studied variables. The results indicate that demographic variables (age and gender) are not significantly correlated with the variables investigated

in the study. Temporal flexibility is positively related to job autonomy, work-life balance and work engagement. Results show that job autonomy is positively related to temporal flexibility, work-life balance, work engagement and job satisfaction. Moreover, in considering the work-life balance, results show that it is positively correlated to work engagement and job satisfaction. Furthermore, results show that higher levels of work engagement coincide with higher levels of job satisfaction.

Tab. 1: Means, standard deviations, inter-correlations and internal consistencies\*

	Mean	SD	TF	JA	WLB	WE	JS	Gender	Age
Temporal flexibility	3,96	1,07	(.73)*						
Job autonomy	3,93	0,78	0.5565**	(.69) *					
Work-life balance	3,96	0,93	0.3391**	0.4280**	(.83) *				
Work engagement	3,86	0,81	0.2186**	0.3926**	0.2576**	(.74) *			
Job satisfaction	4,14	<b>0,78</b>	0.1966**	0.3362**	0.2407**	0.7029**	(.78) *		
Gender	1,51	0,50	-0.0319	-0.0196	0.0282	0.0065	0.0122		
Age	3,32	0,86	-0.0266	0.0171	0.0299	-0.0273	-0.0408	-0.0787**	

Note. \*\* = Significant at  $p < 0.05$

#### 4.2 Confirmatory Factor Analysis

We considered five nested models with various numbers of factors. In particular, we considered: (a) a single factor model that incorporates all five constructs; (b) a two-factor model combining temporal flexibility and job autonomy (factor 1), work-life balance, work engagement and job satisfaction (factor 2); (c) a three-factor model combining temporal flexibility and job autonomy (factor 1), work-life balance (factor 2) and work engagement and job satisfaction (factor 3); (d) a four-factor model that combines temporal flexibility and job autonomy and, lastly, (e) a model that considers each construct as a separate factor.

The fit indexes of the models are presented in Table 2 and confirm that the five factors model is the one with the best good fit (for all indexes). Thus, it is the best approach as concerns the measurement part of our model. The factor loadings of all items were significant at  $p < 0.01$ .

Tab. 2: Results of the confirmatory factor analysis

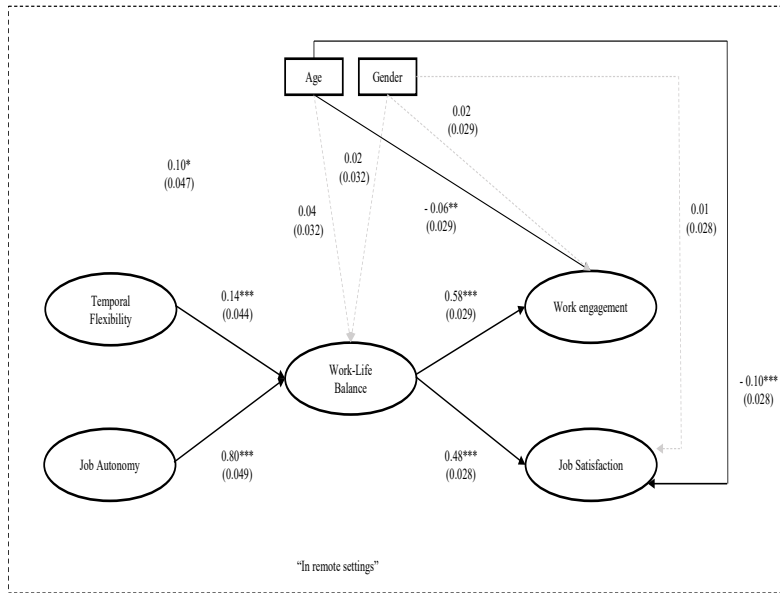
Model	CFI	TLI	RAMSEA	SRMR	$\chi^2$	df	Difference
1 factor	0.527	0.447	0.196	0.143	6278	91	—
2 factors	0.592	0.524	0.182	0.164	5361	103	916.998*
3 factors	0.919	0.904	0.082	0.68	1143	101	4218.295*
4 factors	0.909	0.890	0.087	0.119	1269	99	-125.683*
5 factors	0.965	0.952	0.058	0.54	504	88	764.572*

Note. CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation; SRMR= Standardised Root Mean Squared Residual; Difference = difference in chi-square between the consecutive models; \* = Significant at  $p < 0.01$

### 4.3 Path analysis

Figure 2 shows the structural model of the relationship among the various constructs. The hypothesized model showed a good fit to the data ( $\chi^2(109) = 533.216$ , CFI = 0.967, SRMR = 0.043 and RMSEA = 0.050).

Fig. 2: SEM results of the hypothesized conceptual model



Notes: Standardised coefficients are reported, with standard errors in the parentheses. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

The results indicate that temporal flexibility is significantly and positively related to work-life balance ( $\beta = 0.14$ ,  $p < 0.01$ ). Furthermore, the model indicates that job autonomy significantly and positively affects work-life balance ( $\beta = 0.80$ ,  $p < 0.01$ ). Moreover, work-life balance significantly and positively impacts work engagement ( $\beta = 0.58$ ,  $p < 0.01$ ) and job satisfaction ( $\beta = 0.48$ ,  $p < 0.01$ ). As for the control variables, age slightly and negatively impacts work engagement ( $\beta = -0.06$ ,  $p < 0.05$ ) and negatively impacts job satisfaction ( $\beta = -0.10$ ,  $p < 0.01$ ), thus having an insignificant impact on work-life balance ( $\beta = 0.04$ ).

Finally, gender has an insignificant impact respectively on work-life balance, work engagement, and job satisfaction ( $\beta = 0.02$ ,  $\beta = 0.02$ ,  $\beta = 0.01$ ).

Table 3 shows that the indirect effects of temporal flexibility and job autonomy on work engagement and job satisfaction through work-life balance are significant. These results suggest that work-life balance partially mediated the relationships between temporal flexibility, job autonomy, work engagement and job satisfaction.

Tab. 3: Significance testing of indirect effect. Sobel Test

	Indirect effect	St. Er.	z-value	p-value	Conf. interval
TF → WLB → WE	0.032*	0.011	3.066	0.002	0.012 – 0.053
TF → WLB → JS	0.060*	0.019	3.093	0.002	0.022 – 0.098
JA → WLB → WE	0.252*	0.029	8.767	0.000	0.196 – 0.311
JA → WLB → JS	0.471*	0.050	9.479	0.000	0.374 – 0.572

Note. St. Er = Standard error; Conf. Interval = Confidence interval \* = Significant at  $p < 0.01$

## 5. General discussion

This paper deepens knowledge on the effects of some worker-related variables on work-life balance. By considering remote working habits, we shed light on possible variables influencing individuals' work-life balance. More specifically, we investigated the role of temporal flexibility and job autonomy in influencing individuals' work-life balance, together with the effects of job satisfaction and work engagement. We thus contribute to improve knowledge on organizational behaviour, work psychology research and management literature in several ways.

Firstly, our study not only confirmed that job autonomy positively affects individuals' work-life balance (as demonstrated by Hackman and Oldham, 2005), but also that this relationship holds true even in a forced remote working context. Despite the fact that forced remote working might generate several issues in handling employees' private and job lives, job autonomy has led employees to perceive a better balance between the two domains. In line with boundary theory (Ashforth *et al.*, 2000), we suppose that job autonomy may have helped individuals transition from a family to a professional role, thus mitigating possible interferences deriving from the integration of both social roles.

Second, this research highlights the positive impact of temporal flexibility on the work-life balance. Although some authors have demonstrated the indirect influence of temporal flexibility in the past (Bohen and Viveros-Long's, 1981; Campbell Clark, 2001), our results highlighted its direct impact on work life balance. As discussed in the introduction, the pandemic imposed the adoption of remote working practices (Hu, 2020; Kniffin, 2020) and forced employees to work at home, thus compelling them to completely re-configure their lives (Wang *et al.*, 2021). Individuals that had not experienced such remote working practices before that period may especially suffer boundary management related to private and job roles. We believe that temporal flexibility may have mitigated the role-blurring that was generated by working in the physical environment in which individuals usually only perform their family role. In other words, if spatial flexibility leads employees to manage their boundary roles, temporal flexibility may help them create routines and moments in which they transition from a social to another role.

Third, while previous studies have demonstrated that the work-life balance may positively influence job satisfaction (Haar *et al.*, 2014; Carlson *et al.*, 2009) by mainly focusing their attention on the hedonic perspective of psychological well-being, this study showed that the work-life balance

can positively also affect employees' engagement, thus producing an impact from an eudemonic perspective (Grant *et al.*, 2007). Our study investigated the psychological well-being of employees as a multidimensional concept composed by two dimensions represented by work engagement and job satisfaction. By means of these two dimensions, we studied the effects of the identified variables through two different perspectives (eudaimonic and hedonic), thus offering a more omni-comprehensive vision on psychological well-being.

Our findings are in line with theory of self-determination (Ryan and Deci, 2000) and jobdemands-resources model (Demerouti *et al.*, 2001). Through job autonomy, individuals may satisfy their psychological needs of autonomy and competence which, in turn, produce positive effects on work engagement and satisfaction. Furthermore, temporal flexibility can be considered a resource that is provided by the organization to mitigate physical and psychological costs related to forced remote working. This positive impact could be explained by considering that flexibility usually permits employees to satisfy their basic psychological need of autonomy (Ryan and Deci, 2000).

Summarising, although the pandemic produced negative impacts on employees' work-life balance by generating an intensification of work, stress, depression, and anxiety (Kelliher and Anderson, 2010; Prasada *et al.*, 2020; Pirzadeh and Lingard, 2021), our research has demonstrated that temporal flexibility and autonomy can help individuals manage their professional and private lives in order to react positively to the related distresses.

Finally, our results also highlighted that age slightly and negatively impacts both work engagement and job satisfaction. These findings are interesting if we consider the forced remote working that was experienced during the pandemic. It is possible to hypothesize that older generations are less familiar with flexible practices and inclined to separate their private and work lives (Guido *et al.*, 2021). Our research also provides useful implications for managers in suggesting new organizational strategies and recommending how to deal with the remote working challenges that emerged during the pandemic that will characterize the new normal after COVID-19 (Wang *et al.*, 2021). Managers should encourage time-based flexible work arrangements, granting autonomy and empowering to attain accountability over results, as specified by research on smart working (Raguseo *et al.*, 2016; Neirotti *et al.*, 20219, Langé and Gastaldi, 2020).

If, on the one hand, managers should continue to protect the psycho-physical and social health of their workers, on the other hand, they are called to proactively participate in the integrated management of business risk, and to feel more empowered in their activities. This decision-making autonomy may impact not only employees' psychological well-being but also enable them to perceive greater and empowering responsibility from the company. In this sense, greater temporal flexibility and autonomy increase their psychological well-being, also based on a renewed balance between personal and working life that is capable of positively impacting companies' performance by virtue of greater job satisfaction and empowerment.

Gabriele Boccoli  
Andrea Sestino  
Luca Gastaldi  
Mariano Corso  
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Our study is not devoid of limitations. First, while the direct and separate investigation of temporal flexibility and job autonomy could represent a strong point, the relationship between temporal flexibility and work-life balance could also be examined through the mediating role of job autonomy. Future studies could investigate the threefold impact of temporal, spatial flexibility and job autonomy on the psychological well-being of employees in a hybrid working context in which employees can truly have the freedom to choose when, where, and how work. From a methodological viewpoint, the used items have been modified and reviewed to ensure they were in line with the guidelines provided by the investigated organization. This process could have partially changed the robustness of some of the measure scales that were adopted from the scientific literature.

Further studies could demonstrate the impact of remote working practices on life satisfaction (Pavot and Diener, 2008) which, from a holistic perspective, is referred to individuals' satisfaction toward their life, and not just the balance between work and leisure time. In addition, by considering workers internal "consumers" of firms (Arnett *et al.*, 2002), future studies could investigate important individual-related characteristics, such as their search for status (Eastman *et al.*, 1999).

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**Gabriele Boccoli**  
**Andrea Sestino**  
**Luca Gastaldi**  
**Mariano Corso**  
 The impact of autonomy and temporal flexibility on individuals' psychological well-being in remote settings

## Academic or professional position and contacts

### **Gabriele Boccoli**

Ph.D. Candidate in Management Engineering  
 Polytechnic University of Milan - Italy  
 E-mail: gabriele.boccoli@polimi.it

### **Andrea Sestino**

Ph.D. Candidate in Business Management and Marketing  
 University of Bari Aldo Moro - Italy  
 E-mail: andrea.sestino@uniba.it

### **Luca Gastaldi**

Associate Professor of Management  
 Polytechnic University of Milan - Italy  
 E-mail: luca.gastaldi@polimi.it

### **Mariano Corso**

Full Professor of Management  
 Polytechnic University of Milan - Italy  
 E-mail: mariano.corso@polimi.it

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