

Empirical evidence for the validity of the job crafting scale (JCS) in a Portuguese setting

Validity of the
JCS in a
Portuguese
setting

Evidencia empírica de la validez de la job crafting scale (JCS) en una muestra de trabajadores Portugueses

Received 20 November 2023
Revised 26 February 2024
7 March 2024
Accepted 10 March 2024

Evidência empírica de validade da versão Portuguesa da job crafting scale (JCS)

João Viseu, Joana Santos, Carla Santarém Semedo, Arnold B. Bakker,
Maria Tims, Sara Agrela and Beatriz Lagareiro
(*Author affiliations can be found at the end of the article*)

Abstract

Purpose – This study aims to adapt and validate the Job Crafting Scale (JCS), a measure based on the conceptualization of job crafting of the job demands–resources theory, for a sample of Portuguese workers and to test its psychometric properties regarding validity (factor, convergent, discriminant, and criterion) and reliability.

Design/methodology/approach – Two subsamples ($n_1 = 315$ and $n_2 = 329$) of Portuguese workers aged 18 years old and over participated in this research. Exploratory factor analysis and confirmatory factor analysis were used to assess the factor structure.

Findings – The results indicated that the Portuguese version of the JCS, with 18 items, has a factor structure composed of four-correlated factors. Furthermore, the results demonstrated the existence of factor, discriminant, and criterion validity, as well as reliability.

Originality/value – This study provides a job crafting measure adapted to the Portuguese language that can serve as a diagnostic tool for workers and organizations.

Keywords Job crafting, Validity, Proactivity, Reliability, Employees

Paper type Research paper



This work is financed by national funds from FCT – Foundation for Science and Technology, I.P., within the scope of the project UIDB/04312/2020.

Management Research: Journal of
the Iberoamerican Academy of
Management
© Emerald Publishing Limited
1536-5433
DOI 10.1108/MRJAM-11-2023-1484

Resumen

Propósito – Este estudio tuvo como objetivo adaptar y validar la Job Crafting Scale (JCS), una medida basada en la conceptualización de job crafting de la Teoría de Demandas-Recursos, para una muestra de trabajadores portugueses y probar sus propiedades psicométricas en cuanto a validez (factor, convergente, discriminante y de criterio) y confiabilidad.

Diseño/metodología/enfoque – En esta investigación participaron dos submuestras ($n_1 = 315$ y $n_2 = 329$) de trabajadores portugueses de 18 años o más. Se utilizó un análisis factorial exploratorio y un análisis factorial confirmatorio para evaluar la estructura factorial.

Resultados – Los resultados indicaron que la versión portuguesa del JCS, con 18 ítems, tiene una estructura factorial compuesta por cuatro factores correlacionados. Además, los resultados demostraron la existencia de validez factorial, discriminante y de criterio, así como confiabilidad.

Originalidad – Este estudio proporciona una medida de job crafting adaptada a la lengua portuguesa que puede servir como herramienta de diagnóstico para trabajadores y organizaciones.

Palabras clave Job crafting, Validez, Proactividad, Confiabilidad, Trabajadores

Tipo de artículo Trabajo de investigación

Resumo

Objetivo – Este estudo teve como objetivo adaptar e validar a Job Crafting Scale (JCS), uma medida baseada na conceptualização de job crafting da Teoria das Exigências-Recursos, numa amostra de trabalhadores portugueses e testar as suas propriedades psicométricas quanto à validade (fatorial, convergente, discriminante e de critério) e fiabilidade.

Desenho/metodologia/abordagem – Duas subamostras ($n_1 = 315$ e $n_2 = 329$) compostas por trabalhadores portugueses com 18 ou mais anos foram recolhidas. Foram utilizadas uma análise fatorial exploratória e uma análise fatorial confirmatória para analisar a estrutura fatorial.

Resultados – Os resultados obtidos indicaram que a versão portuguesa da JCS, composta por 18 itens, possui uma estrutura fatorial composta por quatro fatores correlacionados. Além disso, os resultados demonstraram a existência de validade fatorial, discriminante e de critério, bem como de fiabilidade.

Originalidade/valor – Este estudo fornece uma medida de job crafting adaptada para a língua portuguesa que pode servir como ferramenta de diagnóstico para trabalhadores e organizações.

Palavras-chave Job crafting, Validade, Proatividade, Fiabilidade, Trabalhadores

Tipo de papel Trabalho de pesquisa

Introduction

Creating a job that is a source of motivation, satisfaction and flourishing has been a great challenge for work, organizational, and personnel psychology. Throughout history, there has been a development of the work design concept, which has two components, one related to the tasks performed and another associated with the social environment (Morgeson and Humphrey, 2008). Parker *et al.* (2017) identified, analyzed, and characterized the evolution of the main work design perspectives.

The first perspective concerned the scientific management of work, i.e. task simplification; it did not value workers' job control, leading to monotony, absenteeism, and turnover (Parker *et al.*, 2017). The second perspective, sociotechnical systems (Cherns, 1976), argued that organizations are composed of two subsystems, technical and social, which interact in a balanced way to achieve desirable outcomes (Parker *et al.*, 2017). The third perspective was based on the job characteristics model (JCM; Hackman and Oldham, 1975), which argued that a job should present a specific set of attributes (task variety, autonomy promotion, feedback, meaning, and task identity) to achieve desirable outcomes (e.g. work motivation and job satisfaction). The fourth perspective concerned the demand-control model (DCM; Karasek, 1979), which sought to understand the relationship between working

conditions and health (physical and mental) from two dimensions: the extent of demands (i.e. workload) and decision latitude (i.e. workers' control over the work process). This model was updated with the inclusion of perceived social support, which is also fundamental to reducing the detrimental effects of demands (Karasek and Theorell, 1990). The fifth perspective emerged with the development of the job demands–resources theory (JD-R; Demerouti *et al.*, 2001), which included the characteristics of past models but also addressed their limitations. This theory considered that health impairment (through burnout) and motivational (through work engagement) processes occurred simultaneously and that job characteristics could be included in two groups: job demands and job resources (Bakker *et al.*, 2023). Finally, based on the role theory, the sixth perspective highlighted that role ambiguity and role conflict negatively affected workers' performance (Parker *et al.*, 2017).

Work design continues to assume great relevance, and at the beginning of the century, Wrzesniewski and Dutton (2001) proposed a new concept, job crafting, a bottom-up strategy based on workers' proactivity. The central proposition of this concept is that workers can change their job design to increase desirable job attitudes and behaviors, as well as job performance (Frederick and VanderWeele, 2020; Wrzesniewski and Dutton, 2001). This construct emerged in opposition to the most common ways of changing work design based on top-down strategies, e.g. job enrichment (Parker *et al.*, 2017). Job crafting has gained relevance because, contrary to the most common work design strategies (i.e. top-down), it gives workers a central role in constructing their work environment. When workers adopt a proactive stance in aligning their tasks with their expectations and needs, they balance the different interfaces of their work, increasing motivation and fostering desirable work-related outcomes (Tims and Bakker, 2010). By proactively redesigning the workplace, workers can create consistency between their personal and work identities, perform tasks with personal and social meaning, and contribute to the common good (Wrzesniewski and Dutton, 2001).

Several definitions of job crafting and measurement instruments have been proposed. The main objective of this study was to adapt and validate the Job Crafting Scale (JCS; Tims *et al.*, 2012) for a sample of Portuguese workers. The assessment of job crafting allows understanding the extent to which workers craft their jobs by influencing their characteristics, i.e. the extent to which workers have adjusted their tasks to their skills and expectations. By knowing workers' job crafting levels, they can be trained to develop skills in this area, fostering desirable work-related outcomes. For example, Tims *et al.* (2012) argued that optimizing job demands can increase work engagement and performance. To achieve this goal, two studies were performed; the first aimed to explore the JCS's factor structure and assess its reliability, and the second sought to confirm the factor structure obtained and to test the psychometric properties of the JCS further. Previous studies performed in Portugal that used the JCS (e.g. Moreira *et al.*, 2022) did not use a validated version of this measure, which may have biased the results. These authors only examined construct validity, convergent validity, and reliability. However, when testing for construct validity, they did not present any competing models, focusing solely on the most common factor structure, a second-order factor (job crafting) with four first-order factors (increasing structural job resources, increasing social job resources, increasing challenging job demands, and decreasing hindering job demands) (Tims *et al.*, 2012). According to Flake *et al.* (2017), using instruments that are not adapted and validated to the cultural reality of a country is an increasingly common situation with negative consequences. For example, using a nonvalidated measure may neglect the importance of intercultural differences. Theoretically, this study presents the Portuguese version of the JCS, the most common measure to assess job crafting, and tests alternative factor structures for this construct. On a practical level, this measure can be useful for researchers and managers from Portuguese-

Literature review

Job crafting: history, definition and measurement

Eurostat (2021) stated that most European workers work over 35 h weekly. Thus, organizations should seek to create workplaces that provide meaning and fulfillment for workers (Frederick and VanderWeele, 2020). Initially, job crafting was defined as a process of job customization by the worker composed of three dimensions: task crafting (e.g. change in the number and diversity of tasks), relationship crafting (e.g. change in the pattern of interpersonal relationships), and cognitive crafting (e.g. valuing the job as a whole instead of considering each of its parts separately). Despite this customization, it is crucial to emphasize that job crafting is not about changing the job design as a whole; this change is partial and must respect the specificity of the tasks performed (Wrzesniewski and Dutton, 2001). Tims *et al.* (2012) proposed a second conceptualization of job crafting based on the JD-R theory (Bakker *et al.*, 2023). This conceptualization is the most relevant in the literature due to the theoretical model on which it is based, which has solid theoretical and empirical corroboration, and due to the measure developed to assess job crafting, the most used in research (Lazazzara *et al.*, 2019). For these reasons, the present study adopted this conceptualization.

The JD-R theory is an integrative approach to job design, integrating previous theoretical models' contributions (e.g. JCM, Hackman and Oldham, 1975; DCM, Karasek, 1979; Effort-Reward Imbalance, Siegrist, 1996). Therefore, it allows a more comprehensive understanding of the phenomena of ill-being and motivation in the work context and their outcomes (Bakker and Demerouti, 2017; Bakker *et al.*, 2023). This theory has a dynamic and flexible character (Bakker *et al.*, 2023). The dynamic character concerns the fact that it considers that health impairment and motivational processes co-occur; the flexible nature is related to job characteristics, which can be grouped into two groups: job demands (work-related factors that lead to ill-being) and job resources (work-related factors that lead to well-being) (Bakker and Demerouti, 2017; Bakker *et al.*, 2023). According to Bakker and Demerouti (2017), job demands lead to a health impairment process that results in emotional exhaustion; job resources lead to a motivational process that originates work engagement. Over time, this model has been expanded with new variables, e.g. job crafting (Bakker *et al.*, 2018). Job crafting emerges as a bottom-up approach where workers take the initiative to change their workstations and tasks to manage job demands and resources, increasing motivation and person-job fit (Bakker *et al.*, 2023; Demerouti and Bakker, 2023). By bringing together different job demands and resources, the JD-R theory allows workers to identify different work-related factors (i.e. job demands and job resources) and modify them by adopting a proactive stance (Tims *et al.*, 2012). This modification allows an alignment between the needs and skills of workers and the tasks they perform (Tims and Bakker, 2010). In other words, according to JD-R theory, workers can craft their tasks by combining the nature of the demands and resources that exist in their work context (Tims *et al.*, 2012). This concept can be distinguished from others; job crafting aims to optimize job characteristics, and other constructs (e.g. personal initiative or proactive personality) have a global objective, which can lead to changes in the work context or involve negotiations with employers (Demerouti and Bakker, 2023; Rudolph *et al.*, 2017).

In their JCS development work, Tims *et al.* (2012) proposed four types of job crafting: increasing structural job resources, increasing social job resources, increasing challenging job demands and decreasing hindering job demands. Increasing structural job resources is

related to the job itself; individuals seek opportunities to develop themselves and perform their tasks autonomously (Lazazzara *et al.*, 2019). In turn, increasing social job resources has an interpersonal nature; workers strive to improve their support networks and search for feedback (Zhang and Parker, 2019). These actions optimize the job design and increase job resources and work engagement. Another way to foster work engagement is by increasing challenging job demands; workers can look for new projects to be involved in or develop new skills to face novel challenges (e.g. through training) (Frederick and VanderWeele, 2020). In this situation, job demands highlight the role of job resources in predicting work engagement, i.e. the presence of job demands intensifies the magnitude of the association between job resources and work engagement (Bakker *et al.*, 2023). Decreasing hindering job demands (e.g. by reducing mental workload) is aimed at attenuating the impact of job demands on workers (van Wingerden *et al.*, 2017a). The original study of the JCS demonstrated that this dimension was unrelated to work engagement (Tims *et al.*, 2012). van Wingerden *et al.* (2017b) argued that this situation occurred because job demands are involved in the ill-being process of the JD-R, which leads to emotional exhaustion and not to the motivational process, which leads to work engagement. Within the scope of the JD-R Theory, job crafting is part of a gain cycle. This situation is due to the relationship between this concept, job resources, personal resources and work engagement (Bakker and Demerouti, 2017). For example, when workers are engaged, they seek to maintain this state; as such, they adopt crafting behaviors to increase their job resources and reduce the negative impact of demands through its optimization (Bakker *et al.*, 2023). Continuing these behaviors will contribute to higher job and personal resources useful to increase work engagement and decrease the detrimental effects of job demands (Bakker *et al.*, 2023).

The meta-analysis by Rudolph *et al.* (2017) based on the job crafting conceptualization of the JD-R, tested the role of three antecedents, individual differences, job characteristics and demographics, in overall job crafting and each of the dimensions of this concept. Regarding individual differences, four dimensions of The Big Five model (Costa and McCrae, 1992), agreeableness, conscientiousness, openness to experience and extraversion, were positively related to overall job crafting. The same happened for other individual differences, proactive personality and general self-efficacy. In turn, neuroticism did not establish any relationship with overall job crafting. In terms of dimensions, the role of extraversion should be highlighted, which was positively related to increasing job resources, structural and social and increasing challenging job demands. Agreeableness was positively associated with all job crafting dimensions. Openness to experience and conscientiousness were also related to all crafting dimensions, positively with increasing job resources, social and structural and increasing challenging job demands, and negatively with decreasing hindering job demands. Neuroticism was negatively related to increasing structural job resources and increasing challenging job demands and positively associated with decreasing hindering job demands. As for proactive personality and general self-efficacy, positive relationships were observed with increasing job resources, structural and social and increasing challenging job demands, and negative associations with decreasing hindering job demands. Regarding job characteristics, autonomy and workload established negative relationships with decreasing hindering job demands and positive relationships with the remaining job crafting dimensions and overall job crafting. Regarding sociodemographic variables, overall job crafting showed a positive relationship with education and the number of hours worked and a negative association with age and job tenure. Finally, job crafting behaviors were more common in women.

The outcomes defined by Rudolph *et al.* (2017) were also divided into three groups: job attitudes (job satisfaction and turnover intention), occupational well-being (work engagement and strain) and performance (job and contextual performance). Regarding

satisfaction and work engagement, increasing job resources, structural and social, and increasing challenging job demands established positive relationships with these concepts and decreasing hindering job demands established a negative relationship. Turnover intentions showed a negative association with increasing structural job resources and a positive relationship with decreasing hindering job demands. Job strain was negatively associated with increasing structural job resources and increasing challenging job demands, and it was positively associated with decreasing hindering job demands. The performance indicators followed the opposite pattern: a positive relationship with increasing structural job resources and challenging job demands and a negative association with decreasing hindering job demands.

Study 1: Exploratory factor analysis of the job crafting scale

This study aimed to explore the factor structure and reliability of the JCS. Past validation studies (Bakker *et al.*, 2018; Chinelato *et al.*, 2015; Rogala and Cieslak, 2019) have not performed an exploratory factor analysis (EFA). These studies solely performed a confirmatory factor analysis (CFA) and were based on the JCS's original structure, i.e. four first-order factors (increasing structural job resources, increasing social job resources, increasing challenging job demands and decreasing hindering job demands) integrated into a second-order factor (i.e. job crafting) to test this measure's psychometric properties. By not performing an EFA, these authors neglected the possibility of other factor structures emerging, distinct from the original JCS structure. For example, Tims and Bakker (2010) initially defined job crafting as consisting of three dimensions (increasing job resources, increasing challenging job demands and decreasing hindering job demands); after the development of JCS, Tims *et al.* (2012) obtained a structure with four first-order factors integrated into a second-order factor. To ensure obtaining a factor structure consistent with the nature of the data collected, it was considered essential to observe in an exploratory way if a factor structure different from the one obtained in the original validation study could emerge in the Portuguese sample used to perform the EFA.

Method

Participants. Nunnally and Bernstein's (1994) recommendations were followed to calculate the minimum sample size. A sample of 315 individuals (78.4% females and 21.6% males) who worked in the human services area was collected. The majority of participants were 45–54 years old (40%; up to 24 = .3%; 25–34 = 4.8%; 35–44 = 17.8%; 55–64 = 34%; and 65 or over = 3.2%), were married or living in a nonmarital relationship (70.5%; single = 14.9%; separated or divorced = 12.7%; and widowed = 1.9%), and 96.5% had completed a university degree (without university degree = 3.5%). Furthermore, most workers worked in the public sector (88.6%; private sector workers = 9.2%), and 84.9% worked 30 or more hours weekly (less than 30 h worked weekly = 15.1%). Regarding job tenure, 46.3% were in the current organization for 21 or more years (less than one year = 5.1%; one to five years = 18.7%; six to 10 years = 7.6%; 11 to 15 years = 7.6%; 16 to 20 years = 14.6%) and did not hold a leadership role (73.3%; participants with a leadership role = 26.7%).

Measures. Job crafting was assessed with the JCS (Tims *et al.*, 2012). This measure comprised 21 items (e.g. I try to develop myself professionally) with a five-point Likert scale (1-*Never*, 5-*Often*). This concept is a multidimensional latent trait with four dimensions: increasing structural job resources (five items; $\alpha = 0.82$), increasing social job resources (five items; $\alpha = 0.77$), increasing challenging job demands (five items; $\alpha = 0.75$) and decreasing hindering job demands (six items; $\alpha = 0.79$).

A sociodemographic questionnaire was used to collect information about the participants' sex, age, marital status, highest level of education, activity sector (i.e. public or private), number of weekly hours worked, performance of leadership roles and job tenure.

Data collection procedures. The Portuguese version of the JCS was obtained through a translation and back-translation process. Thus, a translation from English to Portuguese was performed, and a back-translation process from Portuguese to English was conducted. Then, both versions were compared to correct possible inaccuracies. The final version of the JCS was presented to a group of master's students to clarify potential doubts regarding the wording of items.

This project was approved by the Ethics Committee of the University of Algarve (Portugal). Data collection occurred during 2019–2021 using an online platform. In the organizations that agreed to participate, the research team sent the online research protocol to those responsible so that they could forward it to employees. This research followed a quantitative method and used a nonprobabilistic sampling technique following a snowball technique. Before answering, participants were informed about the study's objectives and had to read and agree with an informed consent statement, which guaranteed the anonymity and confidentiality of the data. Also, respondents were informed that there were no rewards associated with participation and that they could withdraw their involvement at any time.

Data analysis procedures. The analysis followed the original study's premises (Tims *et al.*, 2012). Through the Statistical Package for the Social Sciences (SPSS) version 20, an EFA was conducted using the maximum likelihood as an extraction method and a direct oblimin rotation. It was defined that only the factors with an eigenvalue higher than one and the items with factor loadings equal to or greater than 0.35 were maintained. When the items' factor loadings were equal to or higher than 0.35 and were included in different factors contrary to the expected, they were eliminated. Reliability was tested through Cronbach's alpha coefficient; values greater than 0.70 must be achieved (Field, 2018).

The abovementioned procedures were mentioned in the original JCS paper. However, a group of complementary analyses was performed: Kaiser–Meyer–Olkin (KMO) test, values higher than 0.70 are desired; and Bartlett's sphericity test, statistically significant values ($p < 0.05$) must be achieved (Field, 2018; Kaiser and Rice, 1974). Also, to observe the existence of multicollinearity, the determinant of the R matrix was assessed; values greater than 0.00001 are desired (Field, 2018).

Results

Table 1 presents the descriptive statistics of the JCS items, the reliability values obtained, and the factor loadings of the items in their factors. The result of the KMO test was 0.85, which is classified as meritorious (Kaiser and Rice, 1974), and Bartlett's sphericity test was statistically significant ($p < 0.001$). Also, the determinant of the R matrix was 0.0000207, indicating no multicollinearity issues.

Item five was removed from the analysis because it did not achieve the cut-off for the factor loadings of the items. Four factors that explained 52.69% of the total variance were obtained. Lastly, reliability values were above 0.70.

Study 2: Confirmatory factor analysis and psychometric evidence

This study aimed to test the factor structure obtained in the exploratory analysis through a CFA. The factor structure obtained in the EFA was conceptualized in two competing models in the CFA: a second-order model, i.e. four first-order factors (increasing structural job resources, increasing social job resources, increasing challenging job demands, and decreasing hindering job demands) integrated into a second-order factor (job crafting); and a

					Factor				Variance explained
Item	<i>M</i>	<i>SD</i>	<i>Mdn</i>	α	1	2	3	4	(%)
<i>Increasing structural job resources</i>									25.08
1	4.73	0.55	5	0.865	0.89				
2	4.71	0.57	5		0.91				
3	4.72	0.55	5		0.84				
4	4.51	0.64	5		0.53				
<i>Decreasing hindering job demands</i>									14.54
6	2.93	1.22	3	0.838		0.66			
7	3.16	1.10	3			0.64			
8	3.14	1.24	3			0.73			
9	3.27	1.23	3			0.65			
10	2.91	1.20	3			0.73			
11	2.87	1.19	3			0.69			
<i>Increasing social job resources</i>									8.06
12	2.89	1.19	3	0.795			0.73		
13	2.30	1.23	2				0.76		
14	2.66	1.34	3				0.78		
15	3.23	1.15	3				0.52		
16	3.96	0.90	4				0.45		
<i>Increasing challenging job demands</i>									4.61
17	3.82	0.95	4	0.868				0.81	
18	3.98	0.93	4					0.78	
19	3.69	1.06	4					0.74	
20	4.00	1.04	4					0.65	
21	3.88	0.95	4					0.74	
									52.69
Source: Author's own work									

Table 1.
Descriptive statistics
of the items of the
JCS (*N* = 315)

model with four-correlated factors (increasing structural job resources, increasing social resources, increasing challenging job demands, and decreasing hindering job demands). The competing model that obtained a better fit would be subject to an analysis of its psychometric properties. The convergent validity of the JCS dimensions was tested, as well as the discriminant validity using the personal growth and proactive personality constructs. Lastly, criterion validity was tested through the correlation between overall job crafting and the four dimensions of this concept and the constructs of job satisfaction, perceived organizational support, work engagement, and job performance.

Method

Participants. The sample size of this study was based on the work of [Lloret-Segura et al. \(2014\)](#), i.e. a sample of 200 participants is the minimum requirement to perform a CFA. A sample of 329 (62.3% females and 37.7% males) Portuguese workers with 18 years of age or older was collected. Most of the respondents were between 25 and 34 years old (46.4%; up to 24 = 14.6%; 35–44 = 18.9%; 45–54 = 13.3%; 55–64 = 6.5%; and 65 or more = 0.3%), single (51.5%; separated or divorced = 22.4%; married or living in a nonmarital relationship = 25.8%; and widowed = 0.3%) and 68.1% had completed a university degree (without a university degree =31.9%). Also, the majority of the participants worked in the services

sector (79%; agriculture-related workers = 1%; industry workers = 20%), had a full-time work contract (86.8%; part-time workers = 13.2%), and worked more than 30 h weekly (83.7%; less than 30 h worked weekly = 16.3%). Relatively to job tenure, most participants worked in the current organization for one to five years (32.9%; less than one year = 28.5%; six to 10 years = 11.2%; 11 to 15 years = 6.4%; 16 to 20 years = 8%; 21 or more years = 13.1%) and did not hold a leadership role (71%; participants with a leadership role = 29%).

Measures. Job crafting was assessed using the JCS version that resulted from the EFA. This version comprised 20 items (e.g. I try to develop my capabilities) with a five-point Likert scale (1-*Never*; 5-*Often*). This concept is a multidimensional latent trait comprising four dimensions: increasing structural job resources (four items), decreasing hindering job demands (six items), increasing social job resources (five items), and increasing challenging job demands (five items). Reliability results from past studies (e.g. [Salessi, 2020](#)) were above 0.70.

Job satisfaction was measured using the Professional Satisfaction Scale proposed by [Lima et al. \(1995\)](#). This instrument is composed of eight items (e.g. satisfaction regarding the organization and department where you work) with a seven-point Likert scale (1-*Extremely dissatisfied*; 7-*Extremely satisfied*). Past studies (e.g. [Viseu et al., 2021](#)) achieved internal consistency values above 0.80.

Perceived organizational support was evaluated using the Perceived Organizational Support Scale ([Eisenberger et al., 1986](#)), and adapted for Portuguese workers by [Santos and Gonçalves \(2010\)](#). The Portuguese version is a short form of the original scale, presenting eight items (e.g. The organization cares about my well-being) with a seven-point Likert scale (1-*Strongly disagree*; 7-*Strongly agree*). [Santos and Gonçalves \(2010\)](#) registered reliability values above 0.80.

Work engagement was assessed by the nine-item version of the Utrecht Work Engagement Scale ([Schaufeli and Bakker, 2003](#)). The version used in this study was adapted for Portuguese workers by [Sinval et al. \(2018\)](#) and is composed of nine items (e.g. I am enthusiastic about my job) with a seven-point Likert scale (0-*Never*; 6-*Always/Every day*). This concept is a multidimensional latent trait with three dimensions: vigor, dedication, and absorption, with three items each. [Sinval et al. \(2018\)](#) reported reliability values above 0.80.

Self-reported job performance was measured by four items (e.g. My manager believes I am an efficient worker) with a seven-point Likert scale (1-*Does not apply to me at all*; 7-*Applies completely to me*) proposed in the work of [Rego and Pina e Cunha \(2008\)](#). These authors registered reliability values above 0.80 in their study.

Proactive personality was evaluated using the short form of the Proactive Personality Scale ([Seibert et al., 1999](#)). This instrument comprised ten items (e.g. I am constantly on the lookout for new ways to improve my life) with a seven-point Likert scale (1-*Strongly disagree*; 7-*Strongly agree*). [Seibert et al. \(1999\)](#) reported reliability values higher than 0.80.

The personal growth dimension was assessed by the Psychological Well-Being Scale of [Ryff \(1989\)](#). This measure is composed of 20 items (e.g. In general, I feel I am in charge of the situation in which I live) with a six-point answer scale (1-*Strongly disagree*; 6-*Strongly agree*); personal growth possesses seven items, four of them reversed. The study of [Ryff \(1989\)](#) reported a Cronbach's alpha value above 0.80.

The sociodemographic questionnaire had questions regarding the respondent's sex, age, marital status, highest level of education, economic activity sector (i.e. agricultural-related, industry and services), workday format (i.e. full-time or part-time), number of weekly hours worked, job tenure, and performance of leadership roles.

Data collection procedures. Data were collected between February and June 2020 through an online platform. The research protocol was composed of self-report measures and a sociodemographic questionnaire. Two inclusion criteria were defined: being 18 years old or over and being in an active work situation. This study followed a quantitative method and

used a nonprobabilistic sampling technique by convenience. Before answering the protocol, respondents were informed about the study's objectives and had to read and agree with an informed consent statement. This statement provided information regarding anonymity and confidentiality standards and informed potential participants that no rewards were associated with the contribution. Also, respondents were informed that they could withdraw their participation at any time.

Data analysis procedures. The first step of the analysis was assessing the multivariate normal distribution. Curran *et al.* (1996) argued that for the maximum likelihood estimation method, values of skewness equal to or lower than two ($|\text{sk}| \leq 2$) and kurtosis equal to or lower than seven ($|\text{ku}| \leq 7$) indicate respect for this assumption. After this procedure, the overall model fit was tested based on the results of the EFA. The factor structure was operationalized in two ways: a second-order model and a model with four-correlated factors. The selected model would be the one with the best fit.

To assess the overall model fit, the following indices were selected: Chi-squared goodness-of-fit index (χ^2), *p-values* higher than 0.05 are expected, however, statistically significant values ($p < 0.05$) may occur in samples with large sample sizes; Goodness of Fit Index (GFI), values between 0.90 and 0.95 indicate a good fit and values higher than 0.95 indicate a very good fit; Root Mean Square Error of Approximation (RMSEA), values between 0.05 and 0.10 indicate an acceptable fit and values below 0.05 indicate a good fit; Standardized Root Mean Square Residual (SRMR), values between 0.05 and 0.08 indicate an acceptable fit and values below 0.05 indicate a good fit; Comparative Fit Index (CFI) and Tucker–Lewis index (TLI), values between 0.90 and 0.95 indicate a good fit and values higher than 0.95 indicate a very good fit; and ratio χ^2/df , values equal to or below five indicate an acceptable fit and values below two indicate a very good fit (Anderson and Gerbing, 1982; Hu and Bentler, 1999; Marôco, 2021).

Subsequently, measurement model fit was tested. Factor validity was evaluated through the items' standardized factor loadings and their statistical significance ($p < 0.05$) (Marôco, 2021). The standardized factor loadings were classified according to the premises of Comrey and Lee (1992): excellent (>0.71), very good (>0.63), good (>0.55), acceptable (>0.45), and poor (>0.32). Convergent validity was assessed through the Average Variance Extracted coefficient, values equal to or higher than 0.50 are desired ($\text{AVE} \geq 0.50$; Bagozzi and Yi, 1988). Discriminant validity was based on the Fornell and Larcker (1981) criterion; the AVE values and the squared correlation coefficients were compared. This comparison occurred for job crafting, personal growth, and proactive personality. Lastly, criterion validity was based on the analysis of Pearson's correlation coefficient (*r*) and its significance value ($p < 0.05$). Reliability was tested through two coefficients, Cronbach's alpha and composite reliability (CR), and values equal to or higher than 0.70 are desired (Hair *et al.*, 2014). The obtained values were classified according to the premises of Sharma (1996): excellent (>0.90), very good (between 0.80 and 0.90), acceptable (between 0.70 and 0.80), and poor (<0.50).

Results

The overall model fit of the two competing models was evaluated. The results obtained in the initial analysis demonstrated that both models had a poor fit. Therefore, the modification indices (MI) were assessed. This procedure aimed to identify covariances between the items' errors to improve the models' quality. This is a sequential process; the covariances between the measurement errors should be established from the highest to the lowest values and must obey a theoretical perspective (Marôco, 2021). After assessing the MI, four covariances were established between the errors of items: eight and nine, 12 and 14, 12 and 15, and 17 and 18.

After this procedure, there was an increase in the quality of both models. However, in the second-order model, only the RMSEA and χ^2/df indices achieved the cut-off values defined

in the literature. The four-correlated factors model registered results for all the indices according to the cut-off values. The fit of this model varied from an acceptable to a good fit. As such, the four-correlated factors model was chosen to proceed with the analysis (Table 2). This factor structure indicates that job crafting dimensions are interdependent and act synergistically, i.e. a change in one of the dimensions implies a change in the remaining. The same factor structure was obtained in the validation study of Salessi (2020). However, this factor structure is different from the usual four first-order factors (i.e. increasing structural job resources, increasing social job resources, increasing challenging job demands, and decreasing hindering job demands) and a second-order factor (i.e. job crafting) (Bakker *et al.*, 2018; Comas and Viera, 2022).

Items six and seven presented poor standardized factor loadings, being removed from the analysis so as not to compromise the model's quality. After this analysis, all items achieved the threshold value for factor validity and were statistically significant ($p < 0.05$). Item nine was marginally below the cut-off, although it was decided to maintain it. According to the classification of Comrey and Lee (1992), the standardized factor loadings varied between acceptable and excellent. Regarding convergent validity, a twofold assessment was performed for global job crafting and each of this construct's dimensions. The results for global job crafting were marginally below the cut-off defined by the literature. As for the dimensions, only increasing structural job resources obtained a value above 0.50; increasing social job resources and increasing challenging job demands registered values slightly lower than the cut-off. Regarding decreasing hindering job demands, this dimension obtained a result that should be the subject of attention in future studies. Reliability values were above 0.70, except for the CR value for decreasing hindering job demands. Considering Sharma's (1996) classification, the results varied between acceptable and very good (Table 3).

According to the Fornell and Larcker (1981) criterion, the results obtained indicate evidence of discriminant validity. Therefore, job crafting differs from the concept's proactive personality and personal growth (Table 4).

Overall, job crafting and the dimensions of increasing structural job resources, increasing social job resources, and increasing challenging job demands correlated positively and significantly with job satisfaction, perceived organizational support, work engagement, and job performance. Decreasing hindering job demands did not establish any statistically significant relationship, except for the correlation with perceived organizational support, which registered a negative signal and statistical significance (Table 5).

Discussion

Over the past few years, psychosocial working conditions have deteriorated, creating new challenges for organizations. Managers and human resources professionals must understand that workers seek motivating and meaningful jobs. A way to make jobs more appealing is

Factor solution	χ^2	df	GFI	RMSEA	RMSEA 90% CI	SRMR	CFI	TLI	χ^2/df
Second-order model	400.231***	131	0.884	0.079	[0.070–0.088]	0.155	0.867	0.845	3.055
Four-correlated factors model	259.806***	125	0.922	0.057	[0.047–0.067]	0.064	0.933	0.918	2.078

Note: ***Statistically significant value for $p < 0.001$

Source: Author's own work

Table 2.
Fit indices for the
factor solutions

MRJIAM

	Standardized factor loadings*	α and CR	AVE
Job crafting scale		0.787; 0.933	0.443
<i>Increasing structural job resources</i>		0.821; 0.835	0.566
Item 1	0.824		
Item 2	0.838		
Item 3	0.781		
Item 4	0.521		
<i>Increasing social job resources</i>		0.781; 0.781	0.422
Item 12	0.589		
Item 13	0.780		
Item 14	0.545		
Item 15	0.735		
Item 16	0.565		
<i>Decreasing hindering job demands</i>		0.725; 0.672	0.341
Item 8	0.588		
Item 9	0.495		
Item 10	0.641		
Item 11	0.602		
<i>Increasing challenging job demands</i>		0.803; 0.801	0.450
Item 17	0.640		
Item 18	0.663		
Item 19	0.719		
Item 20	0.536		
Item 21	0.772		

Table 3.
Factor validity,
convergent validity
and reliability for the
JCS

Notes: *Statistically significant value for $p < 0.05$; The translation of the items into Portuguese is available upon request from the first author
Source: Author's own work

	1	2	3
1. Job crafting	<i>0.443</i>		
2. Personal growth	0.054	<i>0.439</i>	
3. Proactive personality	0.190	0.190	<i>0.426</i>

Table 4.
Discriminant validity
for the JCS

Notes: Italic are the AVE values; The remaining values are the squared correlation coefficients
Source: Author's own work

based on job crafting, a bottom-up strategy based on workers' proactivity, which allows an increase in job resources, structural and social, and challenging job demands, and a decrease in hindering job demands (Bakker *et al.*, 2023). To our knowledge, there is no adapted and validated version of the JCS for samples of Portuguese workers. Previous studies performed in Portugal (e.g. Moreira *et al.*, 2022) were based on the JCS's original factor structure, neglecting possible intercultural differences. For example, the operationalization of a construct differently may indicate that it behaves distinctively in a different culture, which is why adaptation and validation studies are crucial (Flake *et al.*, 2017). Thus, this study sought to adapt and validate the JCS for a sample of Portuguese workers.

	1	2	3	4	5	6	7	8	9	Validity of the JCS in a Portuguese setting
1. Job crafting	(0.787)									
2. Increasing structural job resources	0.595**	(0.821)								
3. Increasing social job resources	0.718**	0.239**	(0.781)							
4. Decreasing hindering job demands	0.432**	-0.028	0.058	(0.725)						
5. Increasing challenging job demands	0.743**	0.546**	0.335**	0.012	(0.803)					
6. Job satisfaction	0.304**	0.264**	0.318**	-0.052	0.237**	(0.874)				
7. Perceived organizational support	0.180**	0.232**	0.274**	-0.178**	0.135*	0.698**	(0.919)			
8. Work engagement	0.336**	0.350**	0.202**	-0.103	0.437**	0.630**	0.448**	(0.934)		
9. Job performance	0.344**	0.340**	0.176**	-0.064	0.456**	0.415**	0.294**	0.559**	(0.741)	

Notes: The reliability values assessed through Cronbach's alpha coefficient are in parenthesis;
 *Statistically significant value for $p < 0.05$; **Statistically significant value for $p < 0.01$
Source: Author's own work

Table 5.
 Criterion validity for the JCS ($N = 329$)

The factor structure obtained, a model with four-correlated factors, differs from the structure registered in most previous studies (e.g. Bakker *et al.*, 2018; Tims *et al.*, 2012). The factor structure obtained in previous studies, i.e. four first-order factors (increasing structural job resources, increasing social job resources, increasing challenging job demands, and decreasing hindering job demands) integrated into a second-order factor (job crafting), assumed that the four dimensions were integrated into a higher-order construct, job crafting. In other words, job crafting would serve as an umbrella concept. The existence of four-correlated factors, the factor structure obtained in this study, indicates that the dimensions of job crafting establish an interdependent relationship, i.e. any variation in one of the dimensions will have repercussions on the others. Furthermore, this factor structure indicates that the considered dimensions act synergistically. Therefore, individuals who want to change their workplace proactively will redirect their efforts toward maximizing job resources and challenging job demands, and reducing hindering job demands. There was evidence of factor, discriminant, and criterion validity. As for convergent validity, an aspect should be highlighted. The AVE cut-off was only respected for the increasing structural job resources dimension. However, using the AVE coefficient has been criticized because of fixed cut-off values (Valentini and Damásio, 2006). Lastly, there was reliability evidence as the results for both coefficients were above the threshold value (0.70).

Overall, the adaptation and validation of the Portuguese version of the JCS provided promising results in terms of factor validity, discriminant validity, criterion validity, and reliability, making it possible to state that it is a precise and consistent measure for use in research and organizational contexts. The Portuguese version of this measure consists of 18 items, answered on a five-point Likert scale (1-Never; 5-often), divided into four dimensions: increasing structural job resources (four items), increasing social job resources (five items), increasing challenging job demands (five items), and decreasing hindering job demands (four items). In conclusion, the practical potential of this research is not limited to the adaptation and validation of the JCS but to the possibilities that this measure offers in terms of assessment, diagnostic, and intervention, which can bring positive outcomes for workers and organizations, namely for Portuguese-speaking countries. Also, this study filled some gaps in the analysis of the psychometric properties of the JCS in Latin American countries. For example, Chinelato *et al.* (2015) and Gutiérrez-Carvajal *et al.* (2022) did not present an EFA, nor did they evaluate different aspects related to validity (e.g. factor, convergent, and discriminant validity). The study by Comas and Viera (2022) did not assess convergent, discriminant, and criterion validity.

Thus, the possibility of a validated instrument allows a better analysis of job crafting levels, amenable to comparison with other countries, and, in a subsequent step, a better understanding of different contexts will enable access to more detail to understand the various situations and scenarios that require workers to craft their jobs. Other sectors and cultural backgrounds could also be compared to identify the relationship between context-specific circumstances and job crafting (Park and Park, 2023).

Theoretical and practical implications

This study filled a gap in the literature: the absence of a properly validated version of the JCS for a sample of Portuguese workers. With this study, it was possible to obtain a measure duly adapted to the Portuguese work context, which can be used in different settings. Furthermore, a factor structure different from the most common may indicate intercultural variations in job crafting. Performing validation studies allows for obtaining accurate and consistent measures, but it also enables the improvement of the psychometric characteristics of existing instruments (Flake *et al.*, 2017).

On a practical level, the Portuguese version of the JCS can help know the job crafting skills of Portuguese workers, functioning as a diagnostic tool. However, more critical than this knowledge is the possibility that arises for the implementation of intervention programs aimed at developing job crafting skills. Previous intervention studies (e.g. van Wingerden *et al.*, 2017a, 2017b) have shown that promoting job crafting leads to desirable work-related outcomes (e.g. work engagement, development opportunities, self-efficacy, positive affect, and job performance). Past systematic reviews (e.g. Rudolph *et al.*, 2017; Zhang and Parker, 2019) indicated that job crafting is positively associated with job satisfaction, work engagement, performance-related indicators, psychological well-being, and person-job fit and negatively correlated with turnover and job strain. It can be concluded that job crafting is vital for workers, who can optimize their workplace in terms of job resources and demands, but also for organizations that can create a workforce that has, in the tasks performed, a source of motivation and professional and personal fulfillment. Ultimately, exploring job crafting not only enhances organizational health but also cultivates the sustainable employability of its workforce, thereby bolstering the organization's resilience and ensuring its long-term success (Laguia *et al.*, 2024).

Limitations and future studies

This study has some limitations worth considering. For example, it was impossible to evaluate temporal invariance, which did not allow observing whether job crafting varies in the same group at different moments in time. Another limitation is related to the adopted research design, i.e. cross-sectional. Thus, it was impossible to observe probable reversed causality relationships, an aspect also mentioned by Tims *et al.* (2012). Evaluating reversed causality would be crucial to test the assumptions of the JD-R theory, e.g. high levels of work engagement favor the emergence of job crafting behaviors (Bakker *et al.*, 2023). Another aspect to consider concerns the concepts selected to test criterion validity; constructs with a negative nature were not selected. This would have been essential to demonstrate that job crafting is negatively associated with undesirable work-related aspects. Lastly, limitations regarding the sample's composition regarding gender and work sector (public or private) can be mentioned. In Portugal, there is an equal proportion of male and female workers (50%), and there is a predominance of workers from the private sector (85.7%) (PORDATA, 2021). In both studies, the percentage of females was greater than 60%, and in study one, most participants were from the public sector (88.6%).

Future studies can adopt a robust research design, allowing the evaluation of temporal invariance and reversed causality relationships, and try to present a sample that reflects the main characteristics of the Portuguese working population. Future works should also consider concepts with a negative nature to assess their relationship with job crafting and integrate recent constructs linked to work design, e.g. playful work design.

Validity of the
JCS in a
Portuguese
setting

References

- Anderson, J. and Gerbing, D. (1982), "Some methods for respecifying measurement models to obtain unidimensional construct measurement", *Journal of Marketing Research*, Vol. 19 No. 4, pp. 453-460, doi: [10.2307/3151719](https://doi.org/10.2307/3151719).
- Bagozzi, R. and Yi, Y. (1988), "On the evaluation of structural equation models", *Journal of the Academy of Marketing Science*, Vol. 16 No. 1, pp. 74-94, doi: [10.1007/bf02723327](https://doi.org/10.1007/bf02723327).
- Bakker, A.B. and Demerouti, E. (2017), "Job demands-resources theory: taking stock and looking forward", *Journal of Occupational Health Psychology*, Vol. 22 No. 3, pp. 273-285, doi: [10.1037/ocp0000056](https://doi.org/10.1037/ocp0000056).
- Bakker, A.B., Demerouti, E. and Sanz-Vergel, A. (2023), "Job demands-resources theory: ten years later", *Annual Review of Organizational Psychology and Organizational Behavior*, Vol. 10 No. 1, pp. 25-53, doi: [10.1146/annurev-orgpsych-120920-053933](https://doi.org/10.1146/annurev-orgpsych-120920-053933).
- Bakker, A.B., Ficapal-Cusí, P., Torrent-Sellens, J. and Boada-Grau, J. (2018), "The Spanish version of the job crafting scale", *Psicothema*, Vol. 30 No. 1, pp. 136-142, doi: [10.7334/psicothema2016.293](https://doi.org/10.7334/psicothema2016.293).
- Cherns, A. (1976), "The principles of sociotechnical design", *Human Relations*, Vol. 29 No. 8, pp. 783-792, doi: [10.1177/001872677602900806](https://doi.org/10.1177/001872677602900806).
- Chinelato, R., Ferreira, M. and Valentini, F. (2015), "Evidence of validity of the job crafting behaviors scale", *Paidéia (Ribeirão Preto)*, Vol. 25 No. 62, pp. 325-332, doi: [10.1590/1982-43272562201506](https://doi.org/10.1590/1982-43272562201506).
- Comas, I. and Viera, A. (2022), "Validación de la escala job-crafting en trabajadores de la empresa de servicios de seguridad integral", *Revista Cubana De Salud y Trabajo*, Vol. 23 No. 2, pp. 55-68.
- Comrey, A. and Lee, H. (1992), *A First Course in Factor Analysis*, 2nd ed. Lawrence Erlbaum Associates, Inc., NJ, NJ.
- Costa, P. and McCrae, R. (1992), "The Five-Factor model of personality and its relevance to personality disorders", *Journal of Personality Disorders*, Vol. 6 No. 4, pp. 343-359, doi: [10.1521/pedi.1992.6.4.343](https://doi.org/10.1521/pedi.1992.6.4.343).
- Curran, P., West, S. and Finch, J. (1996), "The robustness of test statistics to nonnormality and specification error in confirmatory factor analysis", *Psychological Methods*, Vol. 1 No. 1, pp. 16-29, doi: [10.1037/1082-989X.1.1.16](https://doi.org/10.1037/1082-989X.1.1.16).
- Demerouti, E. and Bakker, A.B. (2023), "Job crafting: a powerful job redesign approach", in Peeters, M., de Jonge, J. and Taris, T. (Eds), *An Introduction to Contemporary Work Psychology*, Wiley, Hoboken, NJ, pp. 524-542.
- Demerouti, E., Bakker, A.B. and Schaufeli, W. (2001), "The job demands-resources model of burnout", *Journal of Applied Psychology*, Vol. 86 No. 3, pp. 499-512, doi: [10.1037/0021-9010.86.3.499](https://doi.org/10.1037/0021-9010.86.3.499).
- Eisenberger, R., Huntington, R., Hutchison, S. and Sowa, D. (1986), "Perceived organizational support", *Journal of Applied Psychology*, Vol. 71 No. 3, pp. 500-507, doi: [10.1037/0021-9010.71.3.500](https://doi.org/10.1037/0021-9010.71.3.500).
- Eurostat (2021), *Hours of Work: Annual Statistics*, European Commission, Belgium, Brussels.
- Field, A. (2018), *Discovering Statistics Using IBM SPSS Statistics*, Sage, New York, NY.
- Flake, J., Pek, J. and Hehman, E. (2017), "Construct validation in social and personality research", *Social Psychological and Personality Science*, Vol. 8 No. 4, pp. 370-378, doi: [10.1177/1948550617693063](https://doi.org/10.1177/1948550617693063).

- Fornell, C. and Larcker, D. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50, doi: [10.2307/3151312](https://doi.org/10.2307/3151312).
- Frederick, D. and VanderWeele, T. (2020), "Longitudinal meta-analysis of job crafting shows positive association with work engagement", *Cogent Psychology*, Vol. 7 No. 1, p. 1746733, doi: [10.1080/23311908.2020.1746733](https://doi.org/10.1080/23311908.2020.1746733).
- Gutiérrez-Carvajal, O., Polo-Vargas, J., Vargas-Montealegre, A., Zumárraga-Espinosa, M., Ramírez-Ocaña, X., Marin, V. and Salgado, L. (2022), "Validation of the job crafting scale in Latin American workers", *Anales De Psicología*, Vol. 38 No. 1, pp. 139-148, doi: [10.6018/analesps.472261](https://doi.org/10.6018/analesps.472261).
- Hackman, J. and Oldham, G. (1975), "Development of the job diagnostic survey", *Journal of Applied Psychology*, Vol. 60 No. 2, pp. 159-170, doi: [10.1037/h0076546](https://doi.org/10.1037/h0076546).
- Hair, J., Black, W., Babin, B. and Anderson, R. (2014), *Multivariate Data Analysis*, 7th ed., Pearson Education, London.
- Hu, L. and Bentler, P. (1999), "Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives", *Structural Equation Modeling: A Multidisciplinary Journal*, Vol. 6 No. 1, pp. 1-55, doi: [10.1080/10705519909540118](https://doi.org/10.1080/10705519909540118).
- Kaiser, H. and Rice, J. (1974), "Little jiffy, mark IV", *Educational and Psychological Measurement*, Vol. 34 No. 1, pp. 111-117, doi: [10.1177/001316447403400115](https://doi.org/10.1177/001316447403400115).
- Karasek, R. (1979), "Job demands, decision latitude, and mental strain: implications for job redesign", *Administrative Science Quarterly*, Vol. 24 No. 2, pp. 285-308, doi: [10.2307/2392498](https://doi.org/10.2307/2392498).
- Karasek, R. and Theorell, T. (1990), *Healthy Work: Stress, Productivity, and the Reconstruction of Working Life*, Basic Books, New York, NY.
- Laguía, A., Topa, G., Pocinho, R. and Fernández Muñoz, J. (2024), "Direct effect of personality traits and work engagement on job crafting: a structural model", *Personality and Individual Differences*, Vol. 220, pp. 1-6, doi: [10.1016/j.paid.2023.112518](https://doi.org/10.1016/j.paid.2023.112518).
- Lazazzara, M., Tims, M. and de Gennaro, D. (2019), "The process of reinventing a job: a meta-synthesis of qualitative job crafting", *Journal of Vocational Behavior*, Vol. 116 No. Part B, p. 103267, doi: [10.1016/j.jvb.2019.01.001](https://doi.org/10.1016/j.jvb.2019.01.001).
- Lima, M., Vala, J. and Monteiro, M.B. (1995), "A satisfação organizacional.", in Vala J., Monteiro M.B., Lima L. and Caetano, A. (Eds), *Psicologia Social Das Organizações: Estudos Em Empresas Portuguesas*, 2a ed. Celta Editora, Oeiras, pp. 101-122.
- Lloret-Segura, S., Ferreres-Traver, A., Hernández-Baeza, A. and Tomás-Marco, I. (2014), "El análisis factorial exploratorio de los ítems: Una guía práctica, revisada y actualizada", *Anales De Psicología*, Vol. 30 No. 3, pp. 1151-1169, doi: [10.6018/analesps.30.3.199361](https://doi.org/10.6018/analesps.30.3.199361).
- Marôco, J. (2021), *Análise De Equações Estruturais: Fundamentos Teóricos, Software and Aplicações*, ReportNumber, Pêro Pinheiro.
- Moreira, A., Encarnação, T., Viseu, J. and Sousa, M. (2022), "Job crafting and job performance: the mediating effect of engagement", *Sustainability*, Vol. 14 No. 22, p. 14909, doi: [10.3390/su142214909](https://doi.org/10.3390/su142214909).
- Morgeson, F. and Humphrey, S. (2008), "Job and team design: toward a more integrative conceptualization of work design", in Martocchio, J. (Ed.), *Research in Personnel and Human Resource Management*, Emerald Publishing Limited, Leeds, pp. 39-91, doi: [10.1016/S0742-7301\(08\)27002-7](https://doi.org/10.1016/S0742-7301(08)27002-7).
- Nunnally, J. and Bernstein, I. (1994), *Psychometric Theory*, 3rd ed., McGraw-Hill Inc, New York, NY.
- Park, S. and Park, S. (2023), "Contextual antecedents of job crafting: review and future research agenda", *European Journal of Training and Development*, Vol. 47 Nos 1/2, pp. 141-165, doi: [10.1108/EJTD-06-2021-0071](https://doi.org/10.1108/EJTD-06-2021-0071).

-
- Parker, S., Morgeson, F. and Johns, G. (2017), "One hundred years of work design research: looking back and looking forward", *Journal of Applied Psychology*, Vol. 102 No. 3, pp. 403-420, doi: [10.1037/ap10000106](https://doi.org/10.1037/ap10000106).
- PORDATA (2021), "Censos 2021", available at: www.pordata.pt/tema/portugal/censos-99 (accessed 22 February 2024).
- Rego, A. and Pina e Cunha, M. (2008), "Authentic climates and employee happiness: pathways to individual performance?", *Journal of Business Research*, Vol. 61 No. 7, pp. 739-752, doi: [10.1016/j.jbusres.2007.08.003](https://doi.org/10.1016/j.jbusres.2007.08.003).
- Rogala, A. and Cieslak, R. (2019), "A job crafting measure: psychometric properties of the polish version of the job crafting scale", *Medycyna Pracy*, Vol. 70 No. 4, pp. 445-457, doi: [10.13075/mp.5893.00822](https://doi.org/10.13075/mp.5893.00822).
- Rudolph, C., Katz, I., Lavigne, K. and Zacher, H. (2017), "Job crafting: a meta-analysis of relationships with individual differences, job characteristics, and work outcomes", *Journal of Vocational Behavior*, Vol. 102, pp. 112-138, doi: [10.1016/j.jvb.2017.05.008](https://doi.org/10.1016/j.jvb.2017.05.008).
- Ryff, C. (1989), "Happiness is everything, or is it? Explorations on the meaning of psychological well-being", *Journal of Personality and Social Psychology*, Vol. 57 No. 6, pp. 1069-1081, doi: [10.1037/0022-3514.57.6.1069](https://doi.org/10.1037/0022-3514.57.6.1069).
- Salessi, S. (2020), "Adaptación de la escala de job crafting: evidencias de validez en el contexto laboral argentino", *Psicodebate*, Vol. 20 No. 1, pp. 7-29, doi: [10.18682/pd.v20i1.939](https://doi.org/10.18682/pd.v20i1.939).
- Santos, J. and Gonçalves, G. (2010), "Contribuição Para a adaptação Portuguesa da escala de perceção de suporte organizacional de eisenberger, Huntington, Hutchinson e Sowa (1986)", *Laboratório De Psicologia*, Vol. 8 No. 2, pp. 213-223.
- Schaufeli, W. and Bakker, A.B. (2003), *Utrecht Work Engagement Scale: Preliminary Manual*, Occupational Health Psychology Unit, Utrecht University, Utrecht.
- Seibert, S., Crant, J. and Kraimer, M. (1999), "Proactive personality and career success", *Journal of Applied Psychology*, Vol. 84 No. 3, pp. 416-427, doi: [10.1037/0021-9010.84.3.416](https://doi.org/10.1037/0021-9010.84.3.416).
- Sharma, S. (1996), *Applied Multivariate Techniques*, John Wiley and Sons Ltd, Hoboken, NJ.
- Siegrist, J. (1996), "Adverse health effects of high-effort/low-reward conditions", *Journal of Occupational Health Psychology*, Vol. 1 No. 1, pp. 27-41, doi: [10.1037/1076-8998.1.1.27](https://doi.org/10.1037/1076-8998.1.1.27).
- Sinval, J., Pasian, S., Queirós, C. and Marôco, J. (2018), "Brazil-Portugal transcultural adaptation of UWES-9: internal consistency, dimensionality, and measurement invariance", *Frontiers in Psychology*, Vol. 9, p. 353, doi: [10.3389/fpsyg.2018.00353](https://doi.org/10.3389/fpsyg.2018.00353).
- Tims, M. and Bakker, A.B. (2010), "Job crafting: towards a new model of individual job redesign", *SA Journal of Industrial Psychology*, Vol. 36 No. 2, p. 841, doi: [10.4102/sajip.v36i2.841](https://doi.org/10.4102/sajip.v36i2.841).
- Tims, M., Bakker, A.B. and Derks, D. (2012), "Development and validation of the job crafting scale", *Journal of Vocational Behavior*, Vol. 80 No. 1, pp. 173-186, doi: [10.1016/j.jvb.2011.05.009](https://doi.org/10.1016/j.jvb.2011.05.009).
- Valentini, F. and Damásio, B. (2006), "Average variance extracted and composite reliability: reliability coefficients", *Psicologia: Teoria e Pesquisa*, Vol. 32 No. 2, pp. 1-7, doi: [10.1590/0102-3772e322225](https://doi.org/10.1590/0102-3772e322225).
- van Wingerden, J., Bakker, A.B. and Derks, D. (2017a), "Fostering employee well-being via a job crafting intervention", *Journal of Vocational Behavior*, Vol. 100, pp. 164-174, doi: [10.1016/j.jvb.2017.03.008](https://doi.org/10.1016/j.jvb.2017.03.008).
- van Wingerden, J., Derks, D. and Bakker, A.B. (2017b), "The impact of personal resources and job crafting interventions on work engagement and performance", *Human Resource Management*, Vol. 56 No. 1, pp. 51-67, doi: [10.1002/hrm.21758](https://doi.org/10.1002/hrm.21758).
- Viseu, J., Pinto, P., Borralha, S. and Jesus, S.N. (2021), "Exploring the role of personal and job resources in professional satisfaction: the case of the hotel sector in Algarve", *International Journal of*

- Wrzesniewski, A. and Dutton, J. (2001), "Crafting a job: revisioning employees as active crafters of their work", *The Academy of Management Review*, Vol. 26 No. 2, pp. 179-201, doi: [10.2307/259118](https://doi.org/10.2307/259118).
- Zhang, F. and Parker, S. (2019), "Reorienting job crafting research: a hierarchical structure of job crafting concepts and integrative review", *Journal of Organizational Behavior*, Vol. 40 No. 2, pp. 126-146, doi: [10.1002/job.2332](https://doi.org/10.1002/job.2332).

Further reading

- Demerouti, E., Soyer, L., Vakola, M. and Xanthopoulou, D. (2020), "The effects of a job crafting intervention on the success of an organizational change effort in a blue-collar work environment", *Journal of Occupational and Organizational Psychology*, Vol. 94 No. 2, pp. 374-399, doi: [10.1111/joop.12330](https://doi.org/10.1111/joop.12330).

Author affiliations

João Viseu, Research Centre in Education and Psychology (CIEP-UÉ), University of Évora, Évora, Portugal and Department of Psychology, School of Social Sciences, University of Évora, Évora, Portugal

Joana Santos, Psychology Research Centre (CIP), University of Algarve, Faro, Portugal and Department of Psychology and Education Sciences, Faculty of Human and Social Sciences, University of Algarve, Faro, Portugal

Carla Santarém Semedo, Research Centre in Education and Psychology (CIEP-UÉ), University of Évora, Évora, Portugal and Department of Psychology, School of Social Sciences, University of Évora, Évora, Portugal

Arnold B. Bakker, Center of Excellence for Positive Organizational Psychology, Erasmus University Rotterdam, Rotterdam, The Netherlands and Department of Industrial Psychology and People Management, University of Johannesburg, Johannesburg, South Africa

Maria Tims, Department of Management and Organization, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands

Sara Agrela and Beatriz Lagareiro, Department of Psychology, School of Social Sciences, University of Évora, Évora, Portugal

Corresponding author

João Viseu can be contacted at: joaonrviseu@gmail.com