European Master's in Work, Organizational, and Personnel Psychology (WOP-P)

Playful Work Design Measure: Validation Study for a Portuguese Sample

Master Thesis

Nayane Gomes Pereira Prado

Home tutors:

João Nuno Ribeiro Viseu, PhD & Nuno Rebelo dos Santos, PhD

Host tutor:

Inés Tomás Marco, PhD

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Abstract

Work design perspectives have recently focused on bottom-up strategies, such as job crafting and playful work design (PWD). However, in the literature, there has not yet been a concern to understanding how these constructs are distinguished, how they distinguish themselves from other proactivity-related concepts (e.g., proactive personality), and how they relate to different work attitudes and behaviors, as well as job performance. This study contributed to adapting and validating a PWD measure for a Portuguese working sample. Also, it intended to differentiate the concepts of job crafting and PWD and observe how they relate to different work-related aspects (e.g., work engagement, job satisfaction, self-reported job performance, affective commitment, and emotional exhaustion). Data was collected through an online research protocol composed of self-reported measures and a sociodemographic questionnaire. The data collection resulted in 597 valid responses from Portuguese workers (68% females) aged 18 years or older (M=39.93; SD=12.68; Mdn=41). This research followed a quantitative method using a cross-sectional design and a non-probabilistic sampling technique. Data analysis techniques included descriptive statistics, confirmatory factor analysis (CFA), testing for factor, convergent, discriminant, and criterion validity, and reliability. Results showed that the Portuguese version of the PWD measure presented evidence of factor, convergent, discriminant, and criterion validity and of reliability. Thus, this measure can be considered accurate and precise for use in academic and professional settings; that is, organizations can foster an environment that appreciates and allows employees to feel more comfortable molding their work experience, either by engaging in tasks in their own way or by making them more fun. Furthermore, the study proved that there is enough evidence to affirm that PWD and job crafting are similar and are directly related to proactive personality but different when it comes to the effects of their dimensions on work-related aspects (e.g., increasing structural job resources and increasing challenging job demands, dimensions of job crafting, showed a higher correlation magnitude with work engagement than the dimensions of PWD). Therefore, they are different constructs.

Keywords: discriminant validity, internal factorial structure, job crafting, playful work design, job crafting scale, work-related aspects.

Introduction

Work is an aspect of life that embodies a set of distinct functions: economic, social, prestige, and psychological, which are directly involved in work and its meaning for individuals (Pignault & Houssemand, 2021). Therefore, such a general relationship with different parts of human life makes work a topic of great interest and discussion worldwide – not only by the workers' interest in their job but also by organizations seeking to discuss the meaning work has in employees' lives, how this meaning changes throughout time, countries, experiences and cultures, how each person views its job, and finally, how that impacts the organizational routine (Rosso et al., 2010). Studies and reports by the Organization for Economic Co-operation and Development [OECD] and the International Labor Organization [ILO] (2017) have shown that work, its characteristics, and design influence the use of skills in the workplace, well-being and morale (Peeters et al., 2014), and the existence of psychosocial risk factors. Psychosocial risk factors are work-related aspects – culture, routine, tasks, relationships – that have a detrimental impact on physical and mental health (Leka & Jain, 2010); these risks have been linked to higher rates of anxiety, depression, cardiovascular problems, substance abuse (Fernandes & Pereira, 2016), and absenteeism, as well as lower job performance, quality of life, and job safety (Forastieri, 2013). Therefore, organizations and workers must develop strategies to promote occupational well-being and reduce the incidence of factors that cause ill-being and its consequences.

A way of improving the quality of life at work is through work design, which comprises the different characteristics of a task, the amount of work to be done, how to do it, the relationships and responsibilities around it, and the content of that task (Parker, 2014). The analysis of work design began with the Industrial Revolution, given the changes in the organization of the workforce, and changed its focus throughout the years, going from job division to groups, job characteristics, and, most lately, to job demands and job resources (Parker et al., 2017; Van den Broeck & Parker, 2017). Past studies have associated work design with the relationship individuals establish with their job and how it affects their physical and mental well-being; e.g., studies on this matter related increased physical demands with lower job satisfaction (Humphrey et al., 2007). By that, we can gather that the context in which individuals work is essential to understanding their performance and other work-related aspects in a way that its contents will impact a person's overall health, but also

their perception of self and values, such as self-efficacy, social support, and abilities (Ward & King, 2017).

Considering work activities – social or job-focused -, it is possible to identify two directions from which information can flow: top-down (i.e., the intention of operations and actions is planned and imposed by a central and higher authority) and bottom-up (i.e., actions are not planned by top management, but rather by individuals of a lower organizational level in the organization) (Kim et al., 2014).

Recently, work design has been divided into two major proactive and bottom-up strategies: job crafting and PWD. Job crafting is related to the "changes that employees may make to balance their job demands and job resources with their (…) abilities and needs" (Tims et al., 2012, p. 174), and it has proven to be related to positive outcomes, such as esteem-enhanced occupational identity and job satisfaction (Lazazzara et al., 2020). As for PWD, it was described as "approaching work activities as ludic or agonistic play opportunities and performing them in a ludic or agonistic fashion" (Scharp et al., 2022, p. 7), and it is associated with higher job satisfaction and work engagement (Scharp et al., 2023). Although they are connected, job crafting and PWD are not synonyms: the former relates to employees changing their tasks, whereas the latter refers to a work environment comprising fun and enjoyment, i.e., PWD aims to change the work experience. However, current literature has yet to analyze their differences and whether they have different impacts on other work-related aspects, which shows a gap in improving the quality of life at the workplace.

Regarding the similarities and differences between job crafting and PWD, one question remains unanswered: what impacts it more, the ludic way employees deal with tasks, or how do they change them? Given the relative novelty of PWD and its growing interest worldwide (Bakker et al., 2020), it is essential to analyze how this concept can be applied in different countries and cultures – in this research, the analysis was performed in the Portuguese context. Therefore, this study aimed to contribute to adapting and validating a PWD measure for a sample of Portuguese workers and exploring the differences between job crafting and PWD and how each concept is linked to other elements of work, organizational, and personnel psychology, hoping to link them to work attitudes and behaviors that directly affect both the employees' perceived quality of life and the contributions psychology has to offer to the organizational field. With the validation of this instrument, PWD can be studied

in Portuguese-speaking contexts, other than allowing for a practical use to verify workers' behaviors in organizations. Ultimately, this study aimed to contribute to current research by further exploring workers' perceptions of job crafting and PWD to understand if the conceptual difference between these constructs is transferred to real life or if it is a matter of new wine in old bottles.

Literature Review

Playful work design

PWD is the process of creating a joyful and challenging work environment (Bakker et al., 2023). Moreover, it relates to "approaching work activities as ludic or agonistic play opportunities (…) and performing them in a ludic or agonistic fashion (…) to attain positively valenced end-states" (Scharp et al., 2023, p. 515). Therefore, PWD is concerned about workers adopting a proactive attitude to make their work environment and activities more enjoyable. Such a bottom-top approach differs from the organizational take on promoting team-building and fun activities since it relates to the employees owning their activities and discovering what would be fun and entertaining among them. For the top-bottom activities, employees might participate with a different approach since the activity provided might not be as entertaining, or they might not be as engaged since they did not actively create it. It is valid to underline that PWD activities do not involve only the work environment but also simple tasks throughout the day: telling jokes and sharing funny stories are just as valid in the creation of a more enjoyable work experience (Dishon-Berkovits et al., 2024). One aspect that must be emphasized regarding PWD is that workers cannot change the nature of the tasks performed (i.e., the prescribed tasks must be fulfilled); this concept intends to change the work experience (Bakker et al., 2020).

PWD has two dimensions – designing fun and designing competition. Designing fun relates to how employees deal with work, using humor and imagination to create entertainment and enjoyment while performing tasks. Previous studies have found that fun in the workplace can lead to higher performance, creativity, and work engagement (Fluegge-Woolf, 2014). In turn, designing competition relates to a challenging, rule-guided atmosphere with clear objectives (Scharp et al., 2022). Studies have positively associated PWD with aspects that lead to increased creativity (Liu et al., 2022), work engagement (Dishon-

Berkovits et al., 2024), and job satisfaction (Scharp et al., 2022). Therefore, factory workers might create their own game to boost their mood and productivity at the same time, that is: the worker that attaches more screws to a machine gets more points, the one that does it faster might get additional points, and maybe, by the end, there can be a small prize associated to this dynamic; like a badge, leaderboards, or physical awards. Through this example, it is possible to observe that although the way the activities are being performed might change from more serious and traditional to more ludic and entertaining, the tasks themselves are still being performed. After all, the screws are being attached to the machine. The gamification process that involves PWD makes the employees engage with work more enjoyably. When highlighting the gamification aspect of PWD, it is important to mention that the former relates to using game structure (i.e., points, quizzes, crosswords) to direct business targets of the organization (i.e., a quiz on HR-policy knowledge to boost attention to training on the matter) (Savignac, 2017); while the latter relates to a more holistic view of a psychologically safe environment that fosters innovation, creativity and autonomy (Scharp et al., 2023). Studies have proven that this playfulness is essential to the new generation of workers: millennials feel more able to deal with responsibilities and feel more comfortable having innovative ideas when they perceive their work environment is more playful, increasing their sense of self-efficacy and job performance (Liu et al., 2024).

Job crafting

Traditionally, work design involves top management and their changes in work, adding and dropping roles without the direct participation of employees and regardless of their input (Yao & Fu, 2019). Job crafting is opposed to traditional theories of work design, as it adopts a bottom-up strategy, where workers assume a great preponderance in modifying their workplace: it was created to address the informal attitudes of workers in proactively changing their jobs to match their interests (Devotto & Machado, 2017). This argument agrees with the original definition of job crafting from Wrzesniewski and Dutton (2001, p. 179), which characterized it as “the physical and cognitive changes individuals make in the task or relational boundaries of their work”. These authors initially divided job crafting into three strategies: task crafting (changing the job itself), relational crafting (who/when to establish connections with co-workers and supervisors), and cognitive crafting (how one

internalizes a task and all that involves it) (Berg et al., 2013). To put it in practical terms, finance employees who believe they are performing a task that is not in their original job description, like helping human resources (HR) with the budget for onboarding kits or HR expenses, might offer to help their colleagues with such assignments – therefore, by naturally seeking to change their responsibilities, it would constitute an example of task crafting. On the other hand, a project management employee who teams up with their mechanical engineering colleagues to work on a project, although they were not required to, constitutes an example of relational crafting. Lastly, nurses who understand their work as pivotal to providing health, care, and nurturing to the public would constitute an example of cognitive crafting.

However, these types of job crafting only considered those actions that are directly related to work and its tasks while not considering actions that would affect work indirectly – i.e., self-enrollment in a course to improve a skill would not be part of any of the aforementioned types of job crafting. Noticing this gap in the original concept, Tims et al. (2012) created a more comprehensive, four-dimension definition of job crafting: the proactive shifts a person does when performing a task to deal with the demands/resources of a job. This definition relates to the Job Demands-Resources Theory (JD-R) proposed by Bakker and Demerouti (2007), which states that work has a series of aspects that can cause mental/physical effort and others that are more manageable and less stressful, and employees naturally shift between both.

Tims et al. (2012) named the first dimension of job crafting as increasing structural job resources, which relates to employees' search for development sources and autonomy leading to personal/organizational gain. In this situation, employees look for tasks they can perform with greater autonomy/responsibility and search for new knowledge. The second dimension is increasing social job resources, which relates to employees seeking to expand their social support network through relationships with peers or managers. This happens when employees try to establish a social support network or search for support-related aspects (e.g., feedback) in their supervisors. The third dimension is increasing challenging job demands, which relates to employees seeking stimulating tasks in the work context. For example, this occurs when employees intend to integrate new projects or learn novel skills. The fourth and last dimension is decreasing hindering job demands, which relates to

diminishing aspects of work that might cause strain, stress, or burnout (Moreira et al., 2022; Tims et al., 2012). An employee might struggle with public speaking and avoid engaging in activities leading to such situations and causing distress. In this job crafting perspective, employees act according to their perception of balance between job demands and resources, aiming to transform work into a source of pleasure and well-being. In sum, job crafting is a form of proactive employee involvement in work activities trying to create an alignment between the values and needs of workers and their obligations; instead of standing by as mere spectators of the changes promoted by upper management, lower levels of the organization take an active part in rethinking their workplace and how it functions. Regarding each dimension and its impact on different work-related aspects, a three-wave study published in 2016 showed that increasing job resources and challenging job demands positively correlated to person-job fit, making work more meaningful (Tims et al., 2016). Another research found that increasing challenging job demands had an indirect relationship with boredom while showing a direct relationship with work engagement (Harju et al., 2016).

Employees who take English classes, believing those could help their career development, actively use the first dimension of job crafting – increasing structural job resources. Suppose those employees take the opportunity to meet new peers, learn from them, and even reach out to different sectors (or organizations, i.e., benchmarking). In that case, they are using the second dimension of job crafting – increasing social job resources. When trying to participate in a shadowing program or a task different from usual, they use the third dimension of job crafting – increasing challenging job demands. Finally, when trying to avoid tasks that they believe they are not good at or that might cause some strain/negative feelings, such as being responsible for working with a specific software or program they are unfamiliar with, these employees use the fourth dimension of job crafting – decreasing hindering job demands. It is essential to highlight that, in practical terms, the dimensions of job crafting can act individually, sequentially, or in co-occurrence.

The relationship between job crafting and PWD

As previously mentioned, the relationship between PWD, job crafting and other work-related aspects is a vast field that is yet to be explored. A study from 2020, with 77 naval cadets from Norway, aimed to investigate how job crafting and PWD related to job

performance and work engagement, considering the pressure those individuals may endure during their work. As a result, it was found that changing the nature of the tasks (such as increasing structural job resources and increasing challenging job demands, two dimensions of job crafting) and making them more fun (as PWD proposes) had a positive relationship to job performance and that those attitudes were most effective when the work pressure was low. The participants were found to be more engaged at work and thought their experience was more meaningful when adopting such proactive measures. An essential finding of this same study was that reducing job demands proved to be negatively associated with job performance (Bakker et al., 2020) – this relationship may be explained by a previous study from 2015, in which results demonstrated that decreasing hindering job demands (another dimension of job crafting) had a direct association to increased workload and employee conflict, which was positively related to colleague burnout. Therefore, it can be noted that this specific dimension of job crafting impacts further than one's own work experience since it affects peers directly and indirectly (Tims et al., 2015).

Considering the proactive nature of both concepts, i.e., job crafting and PWD, it is crucial to shed light on the difference between these behaviors and the proactive personality concept. Proactive personality is a predisposition to show initiative to constructive change and engage in behaviors despite higher forces or encouragement. Studies have linked proactive personality with career success, achievements, and creativity (Bateman & Crant, 1993; Seibert et al., 1999; Zhang & Xu, 2024). Job crafting and PWD can be said to be a form of proactive behavior (Tims et al., 2012), but not as synonyms of it. Previous research has linked these constructs: two dimensions of job crafting (increasing challenging job demands and increasing structural job resources) partially mediated the association between proactive personality and task performance (Mamak et al., 2023), and employees who sensed higher autonomy had a higher relationship between proactive personality and job crafting (Liao, 2023). To engage in PWD or job crafting, employees must adopt proactive behaviors since it is required that they take the initiative to change their environment and increase person-job fit and motivation (Tims et al., 2012). However, proactive behavior is not limited to job crafting or PWD since there are different ways of showcasing this behavior.

In sum, it can be stated that both PWD and job crafting correspond to activities in which employees themselves participate, taking an active role in shaping their workplace and

tasks (i.e., job crafting) or by changing the work experience, making it more motivating and fulfilling (i.e., PWD). This study focused on how these concepts are distinguished. Despite having a bottom-up nature (i.e., going from the base [workers] to the top of the organization [senior management]) and promoting positive work-related outcomes for individuals and organizations, both have a different focus. While job crafting seeks to change the nature of a job and the tasks performed, PWD aims to change the work experience. Therefore, it becomes essential to understand whether job crafting and PWD, despite being conceptually distinct, are perceived by workers differently or whether this discrepancy is not translated to the work personnel. Furthermore, this research may contribute to understanding how the above concepts relate to different work-related aspects, as studies such as the forementioned are scarce. These motivations and observations were the cornerstone of the goals of this study.

Aim of the study

This study had the following objectives: (a) to contribute to the adaptation and validation of a PWD measure for Portuguese workers; (b) to differentiate the concepts of job crafting and PWD since they are work design strategies that have the same nature, bottom-up, and seek to improve the quality of life at work; (c) to distinguish PWD from proactive personality, as they are constructs with a proactive nature; and (d) to understand whether these concepts relate differently to distinct work-related outcomes (e.g., work engagement, job satisfaction, self-reported job performance, affective commitment, and emotional exhaustion). Furthermore, it is essential to highlight the exploratory nature of this study – that is, its primary goal is not to test existing hypotheses on the aforementioned topics but to investigate them in depth, generating broader knowledge and a deeper understanding of the subject.

Method

Participants

Two inclusion criteria were created for participation in this study. When responding to the research protocol, respondents had to be 18 years old or over and be in an active employment situation. In total, 597 valid responses that met the criteria above were collected. Regarding the sample (Table 1), the mean age was approximately 40 years old (M=39.94;

SD=12.68; *Mdn*=41), the majority of participants were females (68%), were married or living in a common-law (52.3%), had secondary education as the highest education level (39.9%), worked in the tertiary sector (67.3%), and had an open-ended employment contract (44.4%).

Table 1

Sociodemographic Characteristics of the Participants (N=597)

Characteristics	*n*	*%*
Gender		
Female	406	68
Male	191	32
Age (years)		
18-30	168	28.2
31-43	171	28.8
44-56	202	34
57-75	53	9
Marital status		
Single	217	36.3
Married/common-law	312	52.3
Divorced/separated	60	10.1
Widowed	8	1.3
Educational level		
Basic education	47	7.8
Secondary education	238	39.9
Bachelor's degree	221	37
Master's degree	61	10.2
Ph.D. degree	4	.7
Post-graduate training	26	4.4
Working sector		
Primary	30	5
Secondary	165	27.6
Tertiary	402	67.3

Type of contract		
Self-employed	57	7.8
Open-ended	265	44.4
Fixed term	140	23.5
Non fixed term	70	11.7
Contract for services	21	3.5
Temporary employment contract	8	1.3
Short-term employment contract	10	1.7
Part-time employment contract	26	4.4

Note. n=number of answers in the category; %=percentage of answers in the category.

Instruments

Job crafting

This concept was measured using the Job Crafting Scale (JCS; Tims et al., 2012; Viseu et al., 2024), which is composed of 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 composed of four dimensions: increasing structural job resources (e.g., I try to develop my capabilities), with five items; increasing social job resources (e.g., I ask my supervisor to coach me), with five items; decreasing hindering job demands (e.g., I make sure that my work is mentally less intense), with six items; and increasing challenging job demands (e.g., I try to make my work more challenging by examining the underlying relationships between aspects of my job), with five items. Reliability values for job crafting dimensions were above the threshold of .70: increasing structural job resources had α=.81 in the original version (.82 in the Portuguese version), increasing social job resources had α=.78 in the original version (.78 in the Portuguese version), decreasing hindering job demands had α=.78 in the original version (.72 in the Portuguese version), and increasing challenging job demands had α=.76 in the original version (.80 in the Portuguese version).

Playful work design

This construct was measured using an instrument developed by Scharp et al. (2023), composed of 12 items with a five-point Likert scale (*1=Never; 5=Very often*). This is a multidimensional latent construct composed of the dimensions of designing fun (e.g., I look for humor in the things I need to do) with six items and designing competition (e.g., I approach my job as a series of exciting challenges) with six items. Reliability values obtained for this measure were above the cut-off of .70: designing fun had α=.80, and designing competition had α=.75. It is essential to highlight that the translation of the PWD questionnaire from English to Portuguese followed the method of forward translation, followed by backward translation, an analysis of an expert committee and, lastly, a preliminary pilot testing (Tsang et al., 2017). The translation-back-translation process was conducted by three independent, bilingual, and bicultural judges. Two judges performed the translation-back-translation, while the third judge was consulted in situations of doubt. The three judges were researchers in work, organization, and personnel psychology. The translation-back translation process involved two judges working individually on translating the instrument into Portuguese and then back-translating it into English. Subsequently, the two judges met in person to discuss the content of the items and to reach a consensus on the Portuguese version of the PWD measure. In case of disagreement regarding the wording of the items, the third judge was consulted to resolve the dispute. Then, the Portuguese version was presented to two experts from the work design field. Finally, a preliminary study was performed with 10 master's students from work and organizational psychology.

Work engagement

Work engagement was measured using the Portuguese version of the Utrecht Work Engagement Scale (UWES; Schaufeli & Bakker, 2003; Sinval et al., 2018), namely through its nine-item version, with a seven-point response scale (*0=Never; 6=Always*). It is a multidimensional latent trait composed of the dimension's vigor (e.g., At my work, I feel bursting with energy), dedication (e.g., I am enthusiastic about my work), and absorption (e.g., I feel happy when I am working intensely), with three items each. The reliability values obtained for this instrument were greater than .85: vigor had α=.93, dedication had α=.93, absorption had α=.90, and the latent construct of work engagement had α=.96 (Sinval et al., 2018).

Job satisfaction

Job satisfaction was assessed by the Professional Satisfaction Scale (Lima et al., 1995), composed of eight items (e.g., Considering your promotion prospects, you are) with a seven-point Likert scale (*1=Extremely dissatisfied*; *7=Extremely satisfied*). The scale presented a reliability value, measured using Cronbach's alpha coefficient, greater than .80 (α>.80; Lima et al., 1995) – more specifically, α=.81.

Job performance

Self-reported job performance was assessed by four items (e.g., I am happy with the quality of my work output), proposed by Rego and Pina e Cunha (2008), with a seven-point Likert scale (*1=Does not apply to me at all; 7=Completely applies to me*). These items achieved a reliability value of .86 (α=.86).

Affective commitment

This dimension of organizational commitment was assessed using the Organizational Commitment Questionnaire (Rego & Souto, 2004) inspired by the three-dimensional model of Meyer and Allen (1991). This dimension had five items (e.g., I feel that there is a solid emotional connection between me and my organization.) with a seven-point Likert scale (*1=Does not apply to me at all; 7=Completely applies to me*). This questionnaire achieved a reliability value, measured using Cronbach's alpha coefficient, greater than .70 – more specifically, α=.88.

Emotional exhaustion

This burnout dimension was measured by the Portuguese version of the Oldenburg Burnout Inventory (OLBI; Bakker et al., 2004; Sinval et al., 2019), consisting of eight items (e.g., There are days when I feel tired before I arrive at work), four of them reversed, with a five-point Likert scale (*1=Strongly disagree; 5=Strongly agree*). This dimension obtained reliability values above .85 (Sinval et al., 2019) – specifically, α=.87.

Proactive personality

This concept was measured using the Proactive Personality Scale – more specifically, the shortened version of the original 17 items scale (Bateman & Crant, 1993; Seibert et al., 1999), which is composed of 10 items (e.g., If I believe in an idea, no obstacle will prevent me from making it happen), with a seven-point Likert scale (*1=Strongly disagree; 7=Strongly agree*). This scale achieved reliability values, measured using Cronbach's alpha coefficient, greater than .70 – more specifically, α=.86 (Seibert et al., 1999).

Sociodemographic questionnaire

This questionnaire was created to collect information to characterize the participants in this study, including information about their gender, age, marital status, highest level of education, sector of economic activity in which the participants perform their tasks (primary, secondary, or tertiary), type of employment contract established with the employer, and job tenure.

Data Collection Procedures

This research followed a quantitative method using a cross-sectional research design, i.e., data was collected in a single moment and through an online research protocol prepared through the LimeSurvey platform. The research protocol presented a set of self-report measures designed to assess our core variables, job crafting, PWD, and proactive personality and a set of work-related aspects (e.g., work engagement, job satisfaction, self-reported job performance, affective commitment, and emotional exhaustion), as well as a sociodemographic questionnaire used to characterize the study respondents. A non-probability sampling technique was adopted for the researchers' convenience. Before publishing the research protocol, this document was evaluated by the Ethics Committee of the University of Évora, which gave it a favorable opinion (GD/46433/2023/P1). The analysis process took two months, between September 2023 and October 2023. The data collection process took place between November 2023 and January 2024. Furthermore, before responding, participants should read and agree to a set of information: participation in the research was voluntary, the response could be interrupted at any time without prejudice to the parties, and there were no rewards associated with participation.

Data Analysis Procedures

The data analysis procedures were performed using the Jamovi software. Initially, the data was analyzed to detect the existence of missing values. If identified, these would be replaced by the mean value of each indicator (i.e., of each item), as Hill and Hill (2008) suggested. Then, for the PWD measure, a descriptive analysis of the items was performed, considering the mean (*M*), median (*Mdn*), standard deviation (*SD*), minimum (Min.), and maximum (Max.) values, the 25^{th}, 50^{th}, and 75^{th} percentiles, and the skewness (|sk|) and kurtosis (|ku|) values. The evaluation of |sk| and |ku| values is an essential procedure for performing a confirmatory factor analysis (CFA) using the maximum likelihood estimation (MLE) method (Marôco, 2021). According to Curran et al. (1996), the values of |sk| must be equal to or below two ($|sk| \leq 2$), and the |ku| values must be equal to or below seven ($|ku| \leq 7$). A CFA would be performed following the MLE method if this assumption was respected. The factor structure tested in the CFA was composed of two second-order factors (designing fun and designing competition) integrated into a first-order factor (playful work design), as proposed by Scharp et al. (2023). The CFA for the PWD measure was conducted in two parts: overall model fit and measurement model fit. To evaluate the overall model fit, the fit indices from the original study by Scharp et al. (2003), the Chi-squared goodness-of-fit test (χ^2), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), and χ^2/df, were adopted. In addition, other fit indices were included in the analysis, such as the Goodness of Fit Index (GFI) and the 90% confidence interval for the RMSEA index.

The aforementioned fit indices must comply with a set of cut-off values that allow concluding for the quality of the model fit: the χ^2 test must achieve *p-values* greater than .05 ($p>.05$), however, there may be *p-values* below .05 ($p<.05$) in situations where the sample has a large number of participants; the GFI must vary between [.90-.95[(good fit) and values greater than .95 (very good fit); the CFI and TLI must vary between [.90-.95[(good fit) and values greater than .95 (very good fit); the RMSEA must vary between].05-.10] (acceptable fit) and values below .05 (good fit); the SRMR must vary between [.08-.05[(acceptable fit) and values below .05 (good fit); finally, the coefficient χ^2/df must vary between]2-5] (acceptable fit),]1-2] (good fit), and values below one (very good fit) (Anderson & Gerbing, 1982; Hu & Bentler, 1999; Marôco, 2021).

The measurement model fit was evaluated using validity (factor, convergent, discriminant, and criterion) and reliability indicators (McDonald's omega coefficient; ω). Regarding validity, the following assumptions must be respected: (a) factor validity: the standardized factor loadings of the items must be greater than .50 and statistically significant (p<.05) (Marôco, 2021); (b) convergent validity: values for the Average Variance Extracted (AVE) coefficient must be equal to or greater than .50 (AVE≥.50; Bagozzi & Yi, 1988); (c) discriminant validity: to demonstrate that the PWD dimensions were distinct from each other the Heterotrait-Monotrait (HTMT) method values must be lower than .90 (Henseler et al., 2015); and (d) criterion validity: through Pearson's correlation coefficient (r) and its significance value (p<.05), the latent construct of PWD and its two dimensions (designing fun and designing competition) must correlate positively with work engagement, job satisfaction, self-reported job performance, and affective commitment, and negatively with emotional exhaustion. Regarding factor validity, the values of the standardized factor loadings of the indicators (i.e., items) were classified according to the taxonomy proposed by Comrey and Lee (1992): (a) excellent (>.71); (b) very good (>.63); (c) good (>.55); (d) acceptable (>.45); and (e) poor (>.32). In addition to the procedures above, discriminant validity was tested, this time using the criterion of Fornell and Larcker (1981), to distinguish between PWD, job crafting, and proactive personality. In this situation, the AVE values must be higher than the squared correlation values (Fornell & Larcker, 1981). Regarding reliability, McDonald's omega coefficient (ω) was used; values greater than .70 are desired (Hair et al., 2014). The values obtained were classified according to Sharma's (1996) taxonomy: (a) excellent (>.90); (b) very good (between .80 and .90); (c) acceptable (between .70 and .80); and (d) poor (<.50).

Results

Descriptive Statistics for the PWD Items

Table 2 contains the descriptive statistics for the PWD items, considering the values of mean, median, standard deviation, skewness, kurtosis, minimum, maximum, and 25th, 50^{th,} and 75th percentiles.

Table 2

Descriptive Statistics for the PWD Measure Items (N=597)

Item	*M*	*SD*	*Mdn*	Min.	Max.	|sk|	|ku|	25th percentile	50th percentile	75th percentile
1	3.71	1.05	3	1	5	.11	-.97	3	3	5
2	3.56	1.04	3	1	5	.23	-.53	3	3	5
3	3.69	1.05	3	1	5	.15	-.95	3	3	5
4	3.67	1.01	3	1	5	.34	-1.06	3	3	5
5	3.71	1.04	3	1	5	.15	-.99	3	3	5
6	3.65	1.04	3	1	5	.19	-.84	3	3	5
7	3.08	1.11	3	1	5	.02	.25	3	3	3
8	2.55	1.22	3	1	5	.17	-.54	1	3	3
9	3.08	1.32	3	1	5	-.04	-.69	3	3	3
10	3.24	1.09	3	1	5	.07	.20	3	3	3
11	4.09	1.03	3	1	5	-.37	-1.43	3	3	5
12	3.44	1.11	3	1	5	.04	-.26	3	3	5

Note. *M*=mean value; *SD*=standard deviation value; *Mdn*=median value; Min.=minimum value; Max.=maximum value; |sk|=skewness; |ku|=kurtosis.

As shown in the table, all values of |sk| (≤ 2) and |ku| (≤ 7) were satisfying, which allowed for the proper conduction of CFA as a requirement for the validation of the PWD instrument. All values ranged from one to five (*Mdn*=3); the lowest mean value was observed in item eight (*M*=2.55; *SD*=1.22), and the highest mean was registered in item 11 (*M*=4.09; *SD*=1.03).

Overall Model Fit

The cut-off values for |sk| and |ku| were respected; as such, the CFA could be performed through the MLE method. The factor structure adopted was based on the work of Scharp et al. (2023), i.e., two second-order factors - designing fun and designing competition - integrated into a first-order factor - playful work design. Table 3 shows the overall fit of the model and the classification obtained for each fit index.

Table 3

Overall Model Fit Results

Fit index	Result	Comment
χ^2	160.886***	NA
GFI	.99	Very good fit
RMSEA	.08	Acceptable fit
90% CI RMSEA	[.07-.09]	NA
SRMR	.04	Good fit
CFI	.96	Very good fit
TLI	.95	Very good fit
χ^2/df	4.88	Acceptable fit

Note. χ^2=Chi-squared goodness-of-fit index; GFI=Goodness of Fit Index; RMSEA=Root Mean Square Error of Approximation; 90%CI RMSEA=90% confidence interval for the RMSEA index; SRMR=Standardized Root Mean Squared Residual; CFI=Comparative Fit Index; TLI=Tucker-Lewis Index; χ^2/df=Ratio between the Chi-squared goodness-of-fit index and the freedom degrees; NA=Not applicable; ***p<.001.

Measurement Model Fit

Some indicators (i.e., items), namely items eight ("I try to keep score in all kinds of work activities") and eleven ("I push myself to do better even when it isn't expected"), were removed from the analysis since they compromised the model's quality due to their low factor loading – which suggests that they do not fit the Portuguese work environment and/or culture or that the translation-back translation process should have been better refined. The final factor solution comprised two second-order factors with ten items: designing fun (six items) and designing competition (four items). It is important to highlight that while conducting research for previous translations of the PWD questionnaire to other languages, no other translations using the same instrument were found, which limits the possibility of comparing different cultures and their results to the dimensions of PWD. There was evidence of factor validity since all standardized factor loadings were above the threshold of .50. Considering the taxonomy of Comrey and Lee (1992), the classification of the standardized factor loadings varied between acceptable and excellent. Regarding convergent validity, the AVE

value for designing fun was above the threshold of .50; however, the value for designing competition was marginally below .50. This last situation does not threaten the model's quality. Credé and Harms (2015) argued that the AVE values for second-order factors, such as designing competition, must be higher than 24% of the variance. The AVE value for designing competition explained 49% of the variance. The McDonald's omega coefficient value for the second-order factors varied between .78 and .90, and the value for the first-order factor was .91. According to Sharma's (1996) taxonomy, the reliability values quality varied between acceptable and excellent (Table 4).

Table 4

Measurement Model Fit Results

	Standardized Factor Loadings*	ω	AVE
Playful Work Design		.91	
Designing fun		.90	.62
Item 1	.69		
Item 2	.64		
Item 3	.83		
Item 4	.84		
Item 5	.88		
Item 6	.81		
Designing competition		.78	.49
Item 7	.51		
Item 9	.64		
Item 10	.85		
Item 12	.79		

Note. ω= McDonald's omega coefficient; AVE=Average Variance Extracted coefficient; $p<.05$.

The result of the HTMT method was .62, a value lower than the threshold of .90, so it can be stated that both PWD dimensions can be distinguished. To observe whether PWD is different from other constructs of a proactive nature, such as job crafting and proactive

personality, the Fornell and Larcker (1981) criterion was used. However, before this procedure, performing a CFA for the second-order construct of job crafting concept and for proactive personality was essential. This statistical operation aimed to obtain precise measurements from the point of view of construct validity (Table 5).

Table 5

CFA for Second-order Construct of Job Crafting and Proactive Personality

	χ^2	GFI	RMSEA	90% CI RMSEA	SRMR	CFI	TLI	χ^2/df
Job crafting	441.907***	.99	.07	[.06-.08]	.06	.90	.88	3.91
Proactive personality	57.179***	.99	.10	[.07-.12]	.04	.96	.93	6.35

Note. χ^2=Chi-squared goodness-of-fit index; GFI=Goodness of Fit Index; RMSEA=Root Mean Square Error of Approximation; 90%CI RMSEA=90% confidence interval for the RMSEA index; SRMR=Standardized Root Mean Squared Residual; CFI=Comparative Fit Index; TLI=Tucker-Lewis Index; χ^2/df=Ratio between the Chi-squared goodness-of-fit index and the freedom degrees; ***p<.001.

Overall, it can be stated that there was evidence of construct validity for the measures considered, even though for job crafting, the TLI value was marginally below the cut-off value, and for proactive personality, the χ^2/df ratio was slightly higher than the cut-off value defined by the literature. Table 6 shows the assessment of discriminant validity using the Fornell and Larcker (1981) criterion.

Table 6

Discriminant Validity Assessment

	1	2	3	4	5	6	7
1. Designing fun	**.62**						
2. Designing competition	.29	**.49**					

3. Increasing structural job resources	.11	.10	**.51**				
4. Increasing social job resources	.06	.05	.04	**.42**			
5. Decreasing hindering job demands	.01	.01	.00	.01	**.48**		
6. Increasing challenging job demands	.14	.19	.23	.12	.00	**.46**	
7. Proactive personality	.34	.24	.14	.02	.03	.13	**.42**

Note. Bolded are the AVE values.

Considering the results obtained, it can be argued that there was evidence of discriminant validity since the values for the AVE coefficient were higher than the squared correlation values. This means that although PWD, job crafting, and proactive personality are constructs with a proactive nature, it is possible to distinguish them. This is very useful, especially in the case of PWD and job crafting, as they are bottom-up proactive strategies implemented in the workplace.

Table 7 shows the criterion validity results. As expected, both dimensions of PWD, designing fun and designing competition, correlated positively with work engagement, job satisfaction, self-reported job performance, and affective commitment and negatively with emotional exhaustion. In other words, the higher the levels of designing fun and designing competition, the greater the work engagement, job satisfaction, self-reported job performance, and affective commitment, and the lower the emotional exhaustion.

Comparing the pattern of correlations obtained between the PWD dimensions and the job crafting dimensions, it was possible to observe that (a) the dimensions increasing structural job resources (r=.45; p<.001) and increasing challenging job demands (r=.52; p<.001) presented a higher correlation magnitude with work engagement; (b) the dimensions designing fun (r=.39; p<.001) and designing competition (r=.34; p<.001) showed a higher correlation magnitude with job satisfaction, in comparison to a maximum of .32 (p<.001) from the increasing challenging job demands dimension of job crafting; (c) the dimensions increasing structural job resources (r=.42; p<.001) and increasing challenging job demands

(r=.38; p<.001) showed a higher correlation magnitude with self-reported job performance in comparison to the magnitudes obtained for the dimensions designing fun (r=.18; p<.001) and designing competition (r=.22; p<.001); (d) the dimensions increasing structural job resources (r=.34; p<.001) and increasing challenging job demands (r=.42; p<.001) showed a higher correlation magnitude with affective commitment in comparison to the dimensions of designing fun (r=.30; p<.001) and designing competition (r=.31; p<.001); and (e) the dimensions increasing structural job resources (r=-.23; p<.001) and increasing challenging job demands (r=-.29; p<.001) showed a higher correlation magnitude with emotional exhaustion in comparison to the dimensions of a -.18 from the designing fun (r=-.18; p<.001) and designing competition (r=-.17; p<.001). These results seem to mean that the PWD dimensions are more strongly associated with job satisfaction, i.e., satisfaction with the nature of the tasks, the work environment, and the global organizational environment.

Table 7

Criterion Validity Results (N=597)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. PWD	(.88)												
2. Designing fun	.92***	(.91)											
3. Designing competition	.83***	.54***	(.79)										
4. Increasing structural job resources	.37***	.33***	.32***	(.80)									
5. Increasing social job resources	.26***	.24***	.21***	.20***	(.77)								
6. Decreasing hindering job demands	.12**	.12**	.09*	.02	.11**	(.77)							
7. Increasing challenging job demands	.46***	.37***	.44***	.48***	.35***	.06	(.77)						
8. Proactive personality	.62***	.59***	.49***	.38***	.14***	.18***	.36***	(.82)					
9. Work engagement	.41***	.33***	.40***	.45***	.17***	-.05	.52***	.28***	(.94)				
10. Job satisfaction	.42***	.39***	.34***	.25***	.29***	.08	.32***	.35***	.44***	(.84)			

11. Job performance	.22***	.18***	.22***	.42***	.08*	-.01	.38***	.27***	.46***	.34***	(.79)		
12. Affective commitment	.35***	.30***	.31***	.34***	.25***	-.02	.42***	.31***	.67***	.50***	.44***	(.94)	
13. Emotional exhaustion	-.20***	-.18***	-.17***	-.23***	-.07	.02	-.29***	-.13**	-.54***	-.32***	-.34***	-.47***	(.85)

Note. In () are the Cronbach's alpha values. ***p<.001; **p<.01; *p<.05.

Discussion

Given the importance of work from individual and societal perspectives, it is crucial to understand how employees engage in their work to make it less stressful and more enjoyable. Since PWD is a strategy for improving the quality of life at work, making it more fun and enjoyable, it is essential to further analyze this construct – from its nature to its dissemination in the workplace. This study aimed to contribute to the adaptation and validation of a PWD measure for a Portuguese working sample, to distinguish PWD from job crafting and proactive personality, and to understand whether these concepts relate differently to distinct work-related outcomes (e.g., work engagement, job satisfaction, self-reported job performance, affective commitment, and emotional exhaustion). Provided that, to our knowledge, there was no adaptation and validation study of the PWD measure to Portuguese working samples and that this study aimed to guarantee that this measure would have replicable results in different research and that it would provide results of the construct it is supposed to measure, we conducted a validation of the PWD measure in such sample; further analyzing the results with the assurance that they were accurate and reliable.

The final version of the PWD measure contains 10 of the original 12 items and comprises two second-order factors: designing fun (six items) and designing competition (four items), integrated into playful work design (a first-order factor), that comprehends these two dimensions.

The results of the adaptation and validation of the PWD measure for Portugal showed that (a) the standardized factors loadings obtained were all above the threshold of .50 ($p<.05$) and could be classified as varying from acceptable to excellent (Comrey & Lee, 1992; Marôco, 2021); (b) the AVE values for the dimension designing fun were above the cut-off value of .50 (AVE≥.50; Bagozzi & Yi, 1988) and that for the dimension designing fun the obtained result was slightly below the cut-off desired, nevertheless, Credé and Harms (2015) have argued that second-order factors, such as designing fun, must present results higher than or equal to .24 (AVE≥.24); (c) discriminant validity demonstrated that the two dimensions of PWD are different and that PWD can be distinguished from job crafting and proactive personality (Fornell & Larcker, 1981; Henseler et al., 2015); and (d) reliability results, obtained through the McDonald's omega coefficient, ranged from acceptable to excellent (Sharma, 1996). Together, these results provide evidence of reliability and of factor,

convergent, and discriminant validity for the PWD measure. Lastly, regarding criterion validity, both dimensions of PWD presented the expected correlation with the work-related aspects – a positive correlation with work engagement, job satisfaction, self-reported job performance, and affective commitment, and a negative correlation with emotional exhaustion. These results corroborate the findings of Scharp et al. (2022), in which PWD dimensions were positively correlated to work engagement and work satisfaction; also given that the PWD dimensions behaved differently depending on the work-related aspect being analyzed. Other studies have also related high PWD levels with high levels of enjoyment and satisfaction while at work (Liu et al., 2022) and with low levels of stress (Kasa et al., 2025), which matches this study's findings.

In practical terms, this study suggests that employees who engage in proactive behaviors and make their work environment more enjoyable increase the positive aspects of their relationship with work while decreasing the negative aspects of that relationship. Therefore, such employees feel more connected and satisfied with their work while feeling that their production has increased and they like their jobs more. To further add to this positive scenario, they also feel less emotionally drained when their attitudes are compatible with PWD actions, corroborating the findings of Scharp et al. (2023).

Overall, results have shown that the Portuguese version of the PWD measure is valid and reliable and can be used in research and professional contexts as a diagnostic tool to analyze the frequency of PWD behaviors. Also, this measure can help understand how PWD behaviors can be fostered in an intervention context.

Theoretical and Practical Implications

This study provided the Portuguese version of the PWD measure, which argued for the existence of factor, convergent, discriminant, criterion validity, and reliability evidence. Therefore, it contributed to the existing literature on work and organizational psychology by providing a precise and consistent version of this instrument for Portuguese samples, which was unprecedented. This instrument can be used in academic and professional scenarios to measure the frequency with which workers implement PWD behaviors in Portuguese or Portuguese-speaking countries, acting as a diagnostic tool to structure intervention programs focused on developing PWD skills. Portuguese, Brazilian, Angolan, Mozambican, and other

Portuguese-speaking workers can now have access to a valid and reliable tool that will allow their organizations to further understand if and to which level these employees experience the PWD characteristics – that is, if these employees are proactive, engaged, psychologically safe and holistically and playfully engaged in their work. According to the results from these analyses, organizations can foster training, social activities, and game structures in an attempt to boost PWD behaviors, given the relationship this construct shows to relevant work-related aspects. Finally, PWD is a strategy that allows workers to actively engage in their workplace without changing the nature of tasks while minimizing strains and maximizing enjoyment. It is worth further studies and attention under a more humanizing and comprehensive approach to understanding employees and their behaviors.

Limitations and Future Studies

While the findings presented are promising and satisfactory, some limitations are worth mentioning. The present study did not test for temporal invariance, so it cannot certify if PWD levels fluctuated over time. Additionally, due to the study's cross-sectional design, reversed causality relationships (such as the influence of high levels of work engagement on PWD behaviors) were not tested. It would be interesting if future studies on the adaptation and validation of PWD measures could follow a longitudinal design to fulfill these limitations. Moreover, this study only considered one construct of a negative nature (emotional exhaustion), so future research on the topic may employ other constructs of this type to explore further how PWD relates to them. It would also be interesting if future studies could explore, under a qualitative lens, the emergence of PWD and its most common behaviors. Lastly, considering how Elton Mayo's Hawthorn experiment assessed the importance of workplace culture, social groups, environmental factors, and observation of employees' behaviors, it would be interesting to conduct studies verifying the possible connections between PWD and Mayo's findings.

Conclusions

PWD is a strategy workers adopt to have further enjoyment in their workplace without changing the nature of tasks, making it a paramount area of study in organizational psychology. However, its nature and associations with different work-related constructs are

still unknown, so a vast field exists for exploring the relationships PWD can form. This study expanded the literature on this topic by (a) presenting the Portuguese version of a PWD measure that has evidence of validity (factor, convergent, discriminant, and criterion) and reliability; (b) demonstrating that PWD is different from job crafting, another bottom-up strategy of work design, and proactive personality; and (c) that PWD is positively correlated with desirable job attitudes and behaviors (work engagement, job satisfaction, and affective commitment), as well as job performance, and negatively correlated with undesired job behaviors (emotional exhaustion). Based on these results, we reinforced the need for more studies on PWD and how it affects personnel behaviors. Finally, future studies can use the validated instrument for deeper and broader research on the field. Overall, PWD, job crafting, and proactive personality were shown as extremely relevant but different concepts, which debunks the perception of old wine in new bottles and reinforces the need for more research on each of these topics.

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