
Work and play: Validation of the Italian version of the Playful Work Design Questionnaire

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✎ **ABSTRACT.** Il Playful Work Design è il processo con cui i dipendenti riprogettano proattivamente le attività lavorative, ricercando divertimento e sfida senza cambiare la natura del proprio lavoro. Questo contributo presenta la versione italiana del *Playful Work Design Questionnaire*, un questionario composto da 12 item atto a misurare due dimensioni: Designing fun e Designing competition. I risultati supportano la struttura bidimensionale del questionario, che presenta buone caratteristiche psicometriche e buoni livelli di coerenza interna. Inoltre, i modelli di equazioni strutturali evidenziano empiricamente la distinzione tra le dimensioni del Playful Work Design e le dimensioni del Job crafting.

✎ **SUMMARY.** *Playful Work Design (PWD) refers to the process by which people create proactive conditions within their work activities, without changing the nature of their work. Based on the theory of the duality of play and proactivity theory, Scharp and colleagues (in press) validated a 12-item instrument, the PWD Questionnaire (PWD-Q), that included the dimensions of Designing fun and Designing competition. In the present study, we aimed to validate the Italian version of the PWD-Q. Exploratory factor analysis, divergent validity between PWD and job crafting dimensions, and reliability analyses were conducted with data from 253 Italian employees. The results supported the two-factor structure of the PWD-Q and showed good reliabilities, in line with the original validation. The confirmatory factor analysis empirically supported the distinction between PWD and job crafting. Overall, the results showed that the PWD-Q is a reliable and valid instrument that can be used to measure Designing fun and Designing competition in the Italian context.*

Keywords: *Playful at work, Proactivity, Job crafting*

INTRODUCTION

Because of new technology and globalization, modern organizations are continuously and rapidly evolving. Therefore, employees are required to be proactive and to actively participate in organizational change processes (Callea, Caracuzzo, Costanzi & Urbini, 2022). Research has shown that proactive work behavior, including job crafting, voice, and taking charge, may lead to role clarity and a range of positive employee outcomes, including work engagement, job satisfaction, and improved performance (Tornau & Frese, 2013). By taking initiative, employees can optimize their person-job fit and create a better future (Parker et al., 2017; Tims & Bakker, 2010).

Recently, Bakker and colleagues (Bakker, Scharp, Breevaart & De Vries, 2020) proposed a new proactivity concept, called Playful Work Design (PWD), through which employees can optimize their experience of work without changing their tasks. The prevailing logic describes play and work in a dichotomy. However, the concepts of work and play can actually merge, making work both more productive and more satisfying by activating the participation of employees. In fact, when people play, they usually have an enthusiastic attitude and are often completely immersed in the activity (Csikszentmihalyi, 1975). Also, play may help counter the unfavorable effects of stressors (Petelczyc, Capezio, Wang, Restubog & Aquino, 2018).

PWD is based on play theory and proactivity theory (Bakker, Scharp et al., 2020). The duality of play theory (Huizinga, 1949) distinguishes the game in ludic and agonistic activities. Ludic activity aims at maintaining psychophysical well-being through the use of humor or creativity in development activities, and agonistic activity refers to a more competitive nature in achieving performance, through the challenge and competition with themselves. By following the dualist theory, employees can engage in playful activities in two ways. First, in the ludic activity, the employee can make work activities more fun both for themselves and their colleagues. Second, in agonistic activity, the employee tries to make work more competitive for themselves (e.g., completing a job ahead of schedule) to increase intrinsic motivation and increase performance, creativity, and learning (Barnett, 2007).

The PWD perspective (Bakker, Scharp et al., 2020) suggests that employees can initiate play during work activities to transform their work experience. This is in line with recent advances in individual job design strategies, such

as job crafting (Tims, Bakker & Derks, 2012). Thus, PWD is built on the assumption that proactivity is a fundamental resource that employees can use to play and redesign their work tasks. Proactivity concerns self-initiated and future-oriented behaviors for improving current circumstances or creating new ones (Crant, 2000). Some studies have shown that proactive employees are more involved in work activities and take initiatives to change procedures (Parker, Williams & Turner, 2006). In other words, proactive employees may also organize their tasks and activities themselves, using individual work design strategies, including PWD.

The PWD perspective aims to investigate how employees proactively create working conditions that lead to the promotion of fun and challenge without changing the work methodology, but rather the conception of it (Bakker & van Woerkom, 2017; Scharp, Breevaart, Bakker & Van Der Linden, 2019).

The development of the PWD Questionnaire

Starting from the theories of the game and the concept of proactivity, the *PWD-Questionnaire* (*PWD-Q*; Scharp, Bakker, Breevaart, Kruup & Uusberg, in press) was recently developed and validated. The *PWD-Q* distinguishes between two dimensions: (a) Designing fun and (b) Designing competition.

The validation process of *PWD-Q* has been carried out through three studies using different Dutch samples. Study 1 aimed to explore the factorial structure of and content validity of an initial set of 32 items. The results of a principal-components analysis suggested identifying 12 items, loading onto two distinct factors. The first factor was composed of six items, measuring ludic play during work; this factor was named Designing fun. The second factor was composed of six items, measuring agonistic play during work; this factor was named Designing competition. Reliability indices were acceptable for both factors. With respect to validity, the factors were positively correlated with other measures of ludic traits and agonistic traits. These results support the distinction between two dimensions of PWD. Study 2 showed, through a confirmatory factor analysis, showed adequate fit indices for the two-factor model. The results showed that the two-factor model fit significantly better to the data than a one-factor model that did not differentiate between Designing fun and Designing competition. Furthermore, Scharp and colleagues tested the divergent validity among PWD dimensions and

three job crafting dimensions: (a) crafting structural job resources; (b) crafting social job resources, such as support from colleagues or supervisors; and (c) crafting challenging job demands, including starting new projects, and looking for new opportunities. Hence, a five-factor model, with each latent factor measured by its own items, has been compared with alternative models, combining PWD dimensions with job crafting dimensions. The results showed that none of the alternative models significantly improved the fit of the five-factor model. Therefore, the results supported the validity of the two-factor structure of the PWD-Q, as well as the distinction of the playful work design factors from job crafting factors. Finally, the results of Study 3 provided further support by showing psychometric robustness of the PWD-Q through longitudinal measurement invariance. Furthermore, the test-retest reliability of the two PWD dimensions was adequate.

Aims of the present study

In the present study, we aimed to test the validity of the Italian version of the PWD-Q. First, we investigated the factor structure of the PWD-Q. We hypothesized that the items of the Italian version of the PWD-Q will load on the intended Designing fun and Designing competition dimensions. Second, we assessed the psychometric properties of the two dimensions by assessing corrected item-total correlations and reliabilities. We hypothesized that the two dimensions will reach good reliability. Finally, we explored the relationship between PWD and job crafting. We expected that the two concepts can be conceptually and empirically distinguished.

In light of the increasing scientific interest about the importance of play in the work field and the lack of an Italian measure to address this topic, we aimed to validate the Italian version of the PWD-Q. Therefore, the present study sought to fill the gap and promote in Italy more empirical research on PWD, as well as its antecedents and outcomes.

METHOD

Translation of the PWD-Q and administration procedure

The present study is a part of a research project entitled *Playful Work Design and flow experience: Antecedents and*

outcomes, which was approved by the Ethics Committee of Lumsa University of Rome in May 2022. The Italian version of the PWD-Q was developed following a forward-translation procedure (Gudmundsson, 2009). First, the PWD-Q was independently translated, on an item-by-item basis, from English into Italian by two experts in work psychology and methodology. The two translations were compared and discussed in order to arrive at an accepted version. The revised version was proposed to two native Italian work psychologists; they, individually, supported the clarity of items' content.

Regarding the administration procedure, data were collected through an online questionnaire on Google Forms. On the first page of the online questionnaire we described the research aims and specified that participation was free and voluntary. The two inclusion criteria were (a) age >18 years and (b) employed in an organization. Participants were personally contacted via email by three researchers, according to proximity, availability, and accessibility criteria. Each respondent was asked to invite other people to fill out the questionnaire, and so on, through a snowball convenience sampling.

Participants

The sample consisted of 253 employees. Participants were equally divided by gender (44.6% men and 55.4% women). In terms of age, 14.7% were between 18 and 25 years old, 27.1% were between 26 and 35 years old, 19.1% were between 36 and 45 years old, 18.7% were between 46 and 55 years old, and 20.3% were more than 56 years old. Regarding education, 64.1% of the participants had a university degree, 35.9% had a high school degree, and the remaining 2% had completed compulsory schooling. Most were employed in the private sector (68.4%), in small (38.4%) or medium (35.5%) organizations.

Measures

Playful work design was assessed using the Italian version of the PWD-Q. The scale is composed of 12 items that measure Designing fun (six items) and Designing competition (six items) that are rated on a 5-point frequency scale (1 = never, 2 = sometimes, 3 = regularly, 4 = often, 5 = very often). Data on the Italian and English versions of the PWD-Q are reported in Table 1.

Table 1 – Component loading matrix, with the Geomin rotation, eigenvalues and percentage variance for each dimension

Item code	Item	Factor 1	Factor 2
PWD1	Cerco l'umorismo nelle cose che devo fare [I look for humor in the things I need to do]	.692*	-.005
PWD2	Provo a darmi delle tempistiche per le attività lavorative [I try to set time records in my work tasks]	-.021	.368*
PWD3	Progetto il mio lavoro in modo giocoso [I approach my work in a playful way]	.743*	.058
PWD4	Provo a stare al passo con tutte le attività lavorative [I try to keep score in all kinds of work activities]	-.003	.446*
PWD5	Cerco modalità per rendere le attività lavorative più divertenti per chiunque ne sia coinvolto [I look for ways to make tasks more fun for everyone involved]	.884*	-.075
PWD6	Competo con me stesso al lavoro, non perché devo ma perché mi diverto [I compete with myself at work, not because I have to, but because I enjoy it]	.417*	.325*
PWD7	Progetto le mie attività lavorative in modo creativo per renderle più interessanti [I approach my tasks creatively to make them more interesting]	.456*	.388*
PWD8	Provo a rendere il mio lavoro una sfida entusiasmante [I try to make my job a series of exciting challenges]	.101	.789*
PWD9	Cerco di rendere il mio lavoro più divertente [I look for ways to make my work more fun]	.663*	.242
PWD10	Mi spingo a fare di più anche quando non è previsto [I push myself to do better even when it isn't expected]	.029	.524*
PWD11	Utilizzo l'immaginazione per rendere il mio lavoro più interessante [I use my imagination to make my job more interesting]	.332*	.449*
PWD12	Considero le mie attività lavorative come una serie di sfide entusiasmanti [I approach my job as a series of exciting challenges]	-.039	.857*
Eingevalues		5.58	1.43
% explained variance		46.5%	11.9%

* $p < .01$

Job crafting was assessed using 13 items of the Italian version of the *Job Crafting Scale* (Cenciotti et al., 2016). Different from the original scale (Tims, Bakker & Derks, 2012), the Italian version only measures three positive dimensions, for example, crafting structural resources, measured with four items (sample item: “I try to develop my capabilities”, $\alpha = .85$); crafting social resources, measured with four items (sample item: “I ask whether my supervisor is satisfied with my work”, $\alpha = .80$); and crafting challenging demands, measured with five items (sample item: “When an interesting project comes along, I offer myself proactively as project co-worker”, $\alpha = .83$). Participants could respond to each item by using a frequency scale ranging from 1 (never) to 7 (always).

Data analysis

First, we tested an exploratory structural equation model (ESEM), with a principal-axis factoring method, via Mplus 8.53, in order to investigate the factor structure of the PWD-Q. A parallel analysis suggested that the factors that have higher eigenvalues than parallel eigenvalues should be extracted (Turner, 1998). Furthermore, we evaluated the fit of the proposed factor structure to the data using the following fit indices: χ^2 , χ^2/df , Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). When χ^2/df is <3 , CFI and TLI are $>.90$ and RMSEA and SRMR are $<.08$, the model may be considered adequate (Hu & Bentler, 1999). Second, we assessed the psychometric properties of 12 items of the PWD-Q and internal consistency reliability with Cronbach's α coefficients. Finally, to assess the distinction between PWD and job crafting dimensions, we compared the hypothesized measurement model with five distinct latent factors (Designing fun, Designing competition, Crafting structural, Crafting social, and Crafting challenging) with a series of competitive models using the chi square difference test ($\Delta\chi^2$).

RESULTS

The results of the parallel analysis showed that two factors should be extracted. In addition, the results of the ESEM pointed out more acceptable fit indices for a two-factor model, $\chi^2(43) = 159.25$, RMSEA = .10, CFI = .92, TLI = .88,

SRMR = .05, than a one-factor model, $\chi^2(54) = 334.17$, RMSEA = .14, CFI = .81, TLI = .76, SRMR = .08. The $\Delta\chi^2(11) = 174.91$ was significant, showing that the two-factor model fitted significantly better than a model in which all items loaded onto a single factor (one-factor model).

The factor loading matrix of the two-factor model (see Table 1) suggested that Factor 1 explained the 46.5% of the total variance, and it was composed of six items, principally referring to fun (PWD5 and PWD9), playful (PWD3), creativity (PWD7), and humor (PWD1), rather than PWD6. Factor 2 explained 11.9% of the variance and was also composed of six items, principally referring to competition (PWD2, PWD4, PWD8, PWD10, and PWD12) rather than PWD11.

Thus, PWD6 and PWD11 significantly loaded onto the intended factor as well as onto the unintended factor. In line with the original validation (Scharp et al., in press), we considered PWD6 as an observed indicator of Designing competition and PWD11 as an observed indicator of Designing fun. The two latent factors were positively and moderately correlated ($r = .57$, $p < .001$). The descriptive statistics, skewness, and kurtosis of the 12 items and reliability indicators for each factor are reported in Table 2.

All items had a no extreme means and acceptable standard deviations; furthermore, no item violated normality assumptions, showing skewness and kurtosis values between -2 and $+2$. Regarding reliability, both factors reached a good level of internal consistency, .88 for Designing fun and .78 for Designing competition, respectively. Furthermore, corrected item-total correlations are between .61 and .75 for Designing fun and .37 and .69 for Designing competition. Cronbach's α did not increase if an item was removed. Therefore, these results show good psychometric properties for the 12 items of the PWD-Q and good reliability of both factors.

Moreover, we tested, via CFA, a hypothesized measurement model (M1) with five distinct latent factors, including two PWD factors and three job crafting factors. We next compared M1 with alternative models: a one-factor model (M2); a two-factor model (M3), with the PWD dimensions as Factor 1 and the job crafting dimensions as Factor 2; and 6 four-factor models (M4-M9), combining PWD dimensions with job crafting dimensions. The fit indices of each model and model comparison are reported in Table 3.

The CFA results showed that M1 had acceptable fit indices. Furthermore, the results indicated that $\Delta\chi^2$ was significant; therefore, the alternative models did not fit better to the data

Table 2 – Psychometric properties of 12-item PWD and reliability

Dimensions	Item	<i>M</i> (<i>SD</i>)	Skewness	Kurtosis	C_{it}^c	α -i	α total
Designing fun	PWD1	3.53 (1.11)	−.38	−.61	.64	.86	
	PWD3	2.79 (1.10)	.27	−.63	.72	.85	
	PWD5	3.34 (1.18)	−.29	−.82	.73	.85	
	PWD7	3.37 (1.15)	−.21	−.81	.65	.86	
	PWD9	3.48 (1.04)	−.29	−.56	.75	.84	
	PWD11	3.29 (1.19)	−.28	−.78	.61	.87	.88
Designing competition	PWD2	4.18 (.89)	−1.14	1.40	.37	.78	
	PWD4	4.17 (.84)	−.72	−.24	.50	.75	
	PWD6	3.11 (1.24)	−.17	−.97	.46	.77	
	PWD8	3.60 (1.09)	−.38	−.70	.67	.71	
	PWD10	3.89 (1.00)	−.67	−.18	.48	.79	.78
	PWD12	3.45 (1.07)	−.31	−.58	.69	.70	

Legenda. C_{it}^c = corrected item-total correlations; α -i = alpha if item is deleted.

than M1. Therefore, the hypothesized M1 should be preferred (see Figure 1), suggesting that the two PWD dimensions are empirically distinct from job crafting dimensions. In other words, the discriminant validity of the PWD-Q was supported. Furthermore, Designing fun was positively and significantly correlated with Crafting structural resources ($r = .41, p < .001$), Crafting social resources ($r = .34, p < .001$), and Crafting challenging demands ($r = .37, p < .001$). In a similar vein, Designing competition was positively and significantly correlated with Crafting structural resources ($r = .66, p < .001$), Crafting social resources ($r = .52, p < .001$), and Crafting challenging demands ($r = .60, p < .001$). To compare the strength of the correlations, we calculated two-tailed 95% confidence intervals (CIs) of the differences (Zou, 2007). When the CI includes 0, the strength of the correlations

does not significantly differ. The positive correlations between Designing competition with Crafting structural resources ($Z = -3.994, p < .001 [-4.054, -3.934]$), Crafting social resources ($Z = -2.485, p < .001 [-2.545, -2.225]$), and Crafting challenging demands ($Z = -3.407, p < .001 [-3.467, -3.347]$) were stronger than the associations between Designing fun with the same dimensions.

DISCUSSION

People have a natural tendency to play because it is inherently rewarding and satisfying (Barnett, 2007). Recently, there has been increasing scientific interest in the topic of play at work and its consequences for individual well-

Table 3 – Divergent validity: model comparisons among PWD dimensions and job crafting dimensions

Model	χ^2	df	χ^2/df	CFI	TLI	RMSEA	SRMR	$\Delta\chi^2$	Δdf
M1	706.740	265	2.67	.876	.859	.081	.064	–	–
M2	1629.601	275	5.93	.590	.553	.140	.117	921.861**	10
M3	1019.070	274	3.72	.774	.753	.104	.091	311.33**	9
M4	1264.785	269	4.70	.699	.664	.121	.103	557.045**	4
M5	994.693	269	3.70	.780	.755	.103	.100	286.953**	4
M6	1295.446	269	4.82	.689	.653	.123	.116	587.706**	4
M7	965.901	269	3.59	.789	.765	.101	.089	258.161**	4
M8	909.195	269	3.38	.806	.784	.097	.080	201.455**	4
M9	977.726	269	3.63	.785	.761	.102	.092	269.986**	4

Legenda. *df* = degree of freedom; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual; M1 = hypothesized 5-factor model; M2 = 1-factor model; M3 = 2-factor model (PWD, JC); M4 = 4-factor model (DF and STR); M5 = 4-factor model (DF and SOC); M6 = 4-factor model (DF and CHA); M7 = 4-factor model (DC and STR); M8 = 4-factor model (DC and SOC); M9 = 4-factor model (DC and CHA).

** $p < .01$

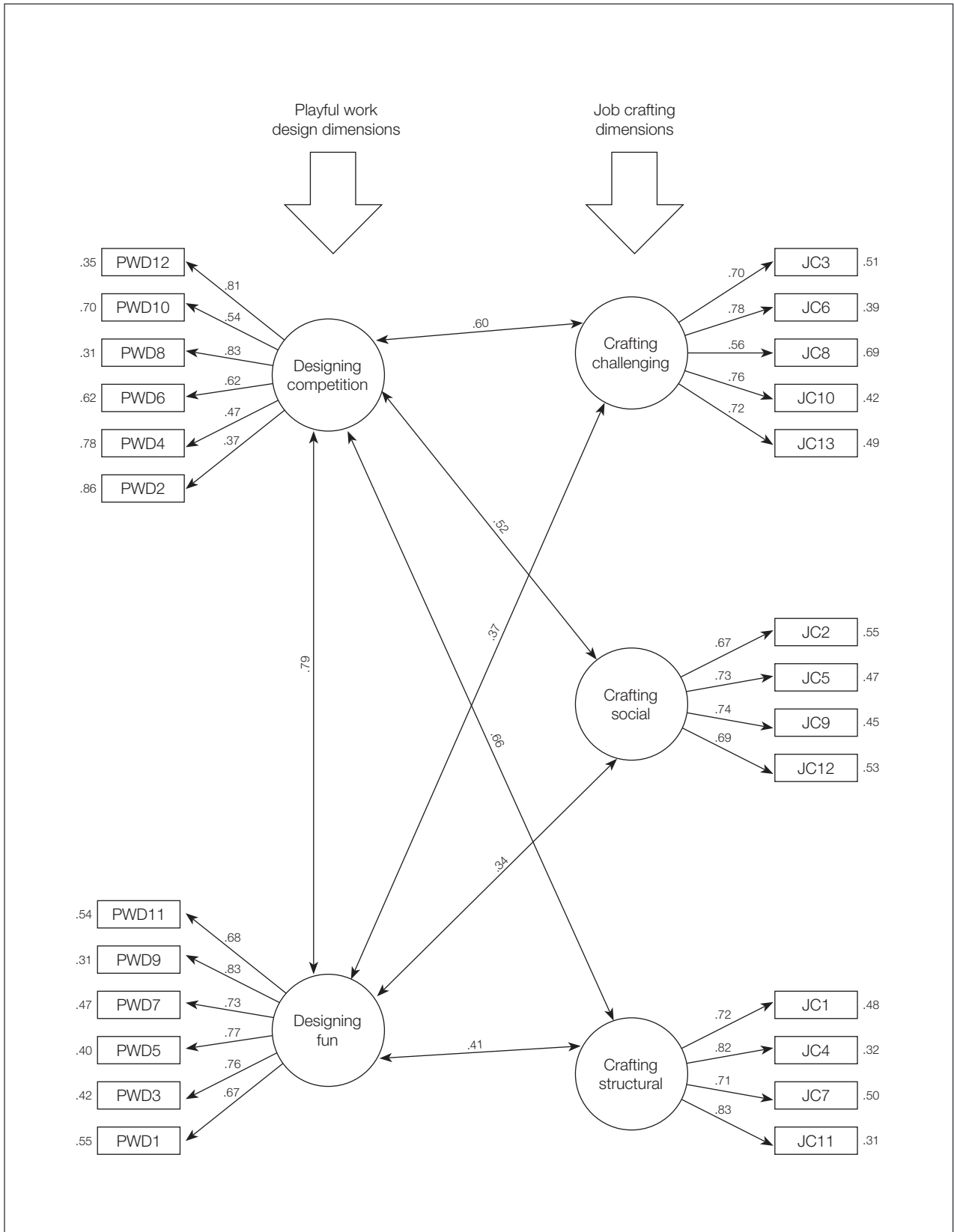
being (Scharp et al., in press). In the present study, we focused on PWD, the proactive and playful approach to work tasks with the aim of experiencing more meaning and engagement at work. To date, the only instrument available to measure playful work design, the PWD-Q, has been validated only in Dutch. For this reason, in the present study we aimed to provide the first psychometric evaluations of the Italian version of the PWD-Q and explore its factor structure.

The results of an ESEM partially supported the original validation, revealing a two-factor structure. All items significantly loaded on the hypothesized factors. However, two items (PWD6 and PWD11) showed double loadings (although the loadings were not extremely high); specifically, with regard to item content, PWD6 (“I compete with myself at work, not because I have to, but because I enjoy it”) refers

to competition, whereas PWD11 (“I use my imagination to make my job more interesting”) refers to imagination and fun. Therefore, consistent with the original version of the PWD-Q, we described the first factor as Designing fun, including PWD11, and the second factor as Designing competition, including PWD6. The two factors supported the duality of play theory, differentiating the ludic (i.e., fun) and agonistic (i.e., competitive) activities of work redesign in the Italian version.

The reliabilities of the factors were satisfactory. In particular, the Cronbach’s α coefficients were in line with the original study (Scharp et al., in press). Furthermore, the results of a higher order CFA suggested that the PWD dimensions differ from job crafting dimensions even though both concepts concern proactive work behaviors. PWD and

Figure 1 – Hypothesized model (M1): distinction among PWD dimensions and job crafting dimensions



job crafting shared some points - for example, the concept of personal challenge - and both are considered two job redesign strategies. However, PWD and job crafting are different with regard to ways to redesign the job experience: the first integrates fun and self-competition within the job activities, and the second redesigns job characteristics so that they become more challenging and more resourceful (using Crafting structural resources, Crafting social resources, and Crafting challenging demands). Our results empirically support the conceptual distinctions between PWD and job crafting, in line with previous research (Scharp et al., in press). Furthermore, Designing competition correlated more strongly with three job crafting dimensions than Designing fun. Despite the clear conceptual and empirical distinction, our results show that the Designing competition dimension of PWD has some overlap with Crafting structural resources and Crafting challenging demands.

From theoretical perspective, the Job Demands-Resources (JD-R) model (Bakker & Demerouti, 2014) may explain PWD as a personal resource. In JD-R model, the job demands concern the physical, psychological, social, and organizational aspects of a job that require an effort to adapt. In this model, job demands may lead to a consumption of the available psychophysical resources (Fraccaroli & Balducci, 2011). Instead, the resources may “(a) be functional in achieving work goals; (b) reduce job demands together with their associated physiological and psychological costs; or (c) stimulate personal growth and development” (Demerouti, Bakker, Nachreiner & Schaufeli, 2001, p. 501). Therefore, in the JD-R model the resources may be used to manage and address the job demands.

Recently, Mazzetti and colleagues (in press) identified five types of resources: (a) social, (b) job, (c) organizational, (d) developmental, and (e) personal. Among personal resources, PWD is a functional resource in relation to job demands. Indeed, Designing fun and Designing competition reduced, as buffers, the negative effect of hindering job demands on work engagement (Scharp, Breevaart & Bakker, 2021). Furthermore, PWD allows one to avoid boredom, try to be more proactive by playing toward a specific goal, stimulating growth and development through competition with oneself,

and increasing flow at work (Bakker, Hetland, Olsen, Espevik & De Vries, 2020).

The availability of the Italian version of PWD-Q may have several practical implications. First, it can be used in recruiting, especially for roles that require high creativity and challenge. Second, it may be useful to analyze which PWD strategies can be improved among employees. Finally, the PWD-Q can be used to evaluate the efficacy of interventions both before and after.

Among the practical interventions that can promote Designing fun and Designing competition, training may play a key role. Today, training activities also aim at creative development, in order to improve the opportunity to redesign one's own job. For instance, training interventions may concern the use of challenges and innovative tasks to help workers channel their individual energy and knowledge into an approach to their work in a different way.

Some limitations should be considered. A first limitation concerns the sample size; although the number of participants was appropriate to conduct a factor analysis with a 12-item questionnaire, and the sample was well balanced by gender and age, it did not allow us to conduct further analyses. Therefore, future studies should use a larger sample size in order to compare differences in PWD-Q scores with respect to organizational role, organizational size and organizational tenure and to test statistical invariance across gender and age. A second limitation concerns the cross-sectional nature of our study; longitudinal studies may support our results and assess test-retest reliability across time. Furthermore, further studies may explain how employees use play proactively to organize their work activities and their effect on performance. Finally, it would be ambitious and fruitful to study in more depth the relationship between PWD and job crafting and their different effect on several outcomes (e.g., flow at work, in-role and extra-role performance). The importance of play as an element of individual well-being has recently been highlighted (Parker, 2014). The present study expands the literature on play at work and provides empirical support for validation of the Italian version of the PWD-Q, which assesses Designing fun and Designing competition in the work field.

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