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A TWO-STEP STUDY FOR THE ITALIAN ADAPTATION OF THE WORK-RELATED FLOW (WOLF) INVENTORY: THE I-WOLF

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Flow at work is defined as a short-term peak experience characterized by absorption, work enjoyment, and intrinsic work motivation. This study tests the psychometric properties of the Italian version of the WOrk-reLated Flow (I-WOLF) inventory developed by Bakker (2008). In a first step, an exploratory factor analysis (N = 323) and a multigroup confirmatory factor analysis (N = 977) were performed. The exploratory factor analysis showed a three-factor structure without cross-loadings, and the multigroup confirmatory factor analysis confirmed this structure and the distinction between absorption, work enjoyment, and intrinsic work motivation, in line with the original scale. In the second step, the relationships between the three work-related flow dimensions and other constructs (such as personal and job characteristics, and cognitive/emotional indicators of well-being) were established. These results offer evidence of the validity of the I-WOLF by showing significant relationships with variables that are generally expected to be related with flow at work.

Key words: Flow at work; Motivation; Job demands-resources model; Scale adaptation; Multigroup confirmatory factor analysis.

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In the last 10 years, scholars have developed a growing interest in positive psychology — an approach that focuses on people's positive qualities and experiences (Seligman & Csikszentmihalyi, 2000). These positive qualities and experiences are studied in various life domains such as work, education, community, and leisure time, since psychology involves all levels of people's life. Positive psychology highlights the role of contextual resources and the potential of the individual. For this reason, scholars have started to examine how the ideas proposed by this discipline could be helpful to the work experience (Turner, Barling, & Zacharatos, 2002).

One topic that has received considerable research attention is the optimal experience of flow (Csikszentmihalyi, 1975, 1990). Flow is a transient state of consciousness that is considered

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optimal since people can control it, have an intrinsic motivation in doing an activity, and have clear goals for it, thus living the experience in a positive way (Csikszentmihalyi, 1990). Measuring the flow experience in the workplace is important to understand the subjective experience, and to enable possible interventions to maintain or enhance the experience.

The present study examines an adaptation in the Italian language of the flow at work measure proposed by Bakker (2008). The adaptation of this measure is functional to increase the possibility to measure the flow at work in Italy (where studies on positive psychology are scant).

Flow and Flow at Work

According to Csikszentmihalyi (1990), flow is a state of consciousness, an inner experience created by the participation in an activity considered enjoyable and in which people are totally immersed. Flow is a peak experience that happens in any situation where there is an activity, in which people invest their attention in realistic goals (Csikszentmihalyi, 1990, 1997). The experience is most likely when people's skills are balanced with the challenges of a situation, and both are positioned on a "high" level (Csikszentmihalyi, 1975, 1982, 1990). Recognizing this balance makes people able to live the optimal experience, to learn and develop new skills, and to increase their self-esteem.

Supporting the idea that flow may occur during various activities, flow has been observed during a large number of recreational activities such as playing music, dancing, performing sports or arts, and during reflexive activities such as chess (Catley & Duda, 1997; Csikszentmihalyi, 1990; Csikszentmihalyi & LeFevre, 1989; Delle Fave & Bassi, 1998). Although many studies have highlighted the occurrence of flow in recreational activities, other studies suggested that flow may arise during work activities (Bakker, 2008; Csikszentmihalyi & LeFevre, 1989).

In fact, a number of studies (Csikszentmihalyi & LeFevre, 1989; Haworth & Hill, 1992) have found that people experience flow more often during work than in their spare time. Bakker (2008) operationalized the flow experience applied to work (flow at work: FaW) and described it as a short-term peak experience characterized by three main components: absorption, work enjoyment, and intrinsic work motivation. The author chose these three elements because they are usually considered in flow research. Absorption (ABS) refers to the complete immersion in the work activity so that time flies and people do not realize what is happening around them. Work enjoyment (WE) reflects the feeling of happiness experienced by people during their work. Intrinsic work motivation (IWM) refers to performing a work activity with the intent to experience pleasure and satisfaction. Employees motivated by the intrinsic side of their work tasks are constantly interested in them and want to carry on (Deci & Ryan, 1985; Harackiewicz & Elliot, 1998; Vallerand, 1997).

When Does Flow at Work Occur? Research Evidence

Considering that the states of flow and of FaW are perceived not only as positive but also as optimal experiences, many people feel happiness during these experiences (Csikszentmihalyi & LeFevre, 1989; Delle Fave & Massimini, 2004), and levels of happiness are higher when flow occurs during work (Marianetti & Passmore, 2010). This experience occurs when there are some circumstances such as clear goals, concentration on a specific field, feedback, control over the activity.

FaW is most likely when there is a balance between the level of ability and the challenge of a situation. In line with this "challenge-skill balance" perspective, and with the Job Demands-

Resources (JD-R) model (Bakker & Demerouti, 2014), FaW occurs when the job demands match employees' professional skills and the available organizational resources (Bakker, 2008). Studies on FaW based on the JD-R model investigated the role of organizational resources, which emerged as the main antecedent of FaW (Demerouti, Bakker, Sonnentag, & Fullgar, 2012; Llorens, Salanova, & Rodriguez, 2013), since organizational resources can buffer the stressful impact of job demands (so that employees are able to cope with the demands) and can encourage individual growth and development (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Thus, whereas job resources such as social support and autonomy facilitate work-related flow, emotional demands may undermine it (Bakker, 2008). The reason is that resources positively influence the "challenge-skill balance" by making people able to reach their goals, by starting a motivational process, and by fostering the flow experience. Referring to job demands, and particularly those related to work and emotional pressure, they can limit the pleasure at work and, thus, flow.

The aim of the present study was to adapt in Italian the WOrk-reLated Flow (WOLF) inventory, developed by Bakker (2008), evaluating different psychometric properties. The process is presented in two different steps. In Step 1, the factorial validity of the Italian WOrk-reLated Flow (I-WOLF) inventory was examined through an exploratory factor analysis and a multigroup confirmatory factor analysis. In Step 2, the relationships were investigated between the three dimensions of the I-WOLF and other constructs that are expected to correlate with the dimensions of FaW. In this way, the convergent validity of the three flow dimensions was investigated. In particular, the following hypotheses are proposed.

Hypothesis 1: the Italian version of the WOLF is composed of three factors (ABS, WE, and IWM).

Hypothesis 2: of the three flow dimensions, particularly WE and IWM positively correlate.

Hypothesis 3: personal and job resources positively correlate with the three dimensions of FaW (H3a); job demands positively correlate with ABS and negatively with WE and IWM (H3b); positive outcomes (job satisfaction, life satisfaction, and positive emotions at work) are positively related with the dimensions of FaW (H3c); negative emotions at work negatively correlate with the three dimensions of FaW (H3d).

In particular, Hypotheses 1 and 2 will be tested in the first step of the analyses, whereas hypotheses from H3a to H3d will be tested in the second step of the analyses.

STEP 1: FACTORIAL VALIDITY OF THE I-WOLF

METHOD

Participants and Procedure

The present study was conducted among six groups belonging to different occupations in Italy. The size of the total group of participants is 1,300; the demographic and professional characteristics of the participants are shown in Table 1. The procedures through which data were collected are different: for Groups 1 (24.8% of the total of participants), 4 (15.2% of the total of participants), 5 (17.3% of the total of participants), and 6 (21.5% of the total of participants) the organizational boards were contacted, in order to obtain permission to administer the questionnaires. Groups 2 (11.3% of the total of participants) and 3 (9.9% of the total of participants) are

TABLE 1
Demographic and professional characteristics of the participants (N = 1,300)

	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
Type of employees	Health professionals (public hospital)	Heterogeneous group	Heterogeneous group	Nurses (private hospital)	Academic precarious workers	Journalists
N (redemption)	323 (38%)	147	129	197 (56%)	225 (23%)	279 (48%)
Gender	Male: 11.2% Female: 88.8%	Male: 38.1% Female: 61.9%	Male: 50.4% Female: 49.6%	Male: 13.9% Female: 86.1%	Male: 52.2% Female: 47.8%	Male: 53.2% Female: 46.8%
Age (*M*, *SD*)	42.50, 8.73	38.49, 9.79	40.36, 12.10	41.84, 9.28	31.57, 4.63	43.75, 11.15
Job tenure (*M*, *SD*)	15.28, 9.83	11.02, 9.84	12.79, 11.29	14.87, 0.66	5.38, 4.85	17.51, 10.90
Weekly working hours (*M*, *SD*)	36.60, 6.31	38.98, 12.04	38.23, 11.69	38.26, 7.08	43.40, 10.11	36.11, 16.42
Type of contract	Full-time: 83.4% Part-time: 16.6%	Full-time: 84.5% Part-time: 15.5%	Full-time: 82.9% Part-time: 17.1%	Full-time: 85.3% Part-time: 14.7%	Flexible working time	Flexible working time
Role in the organization	Doctor: 14.4% Nurse: 85.6%	Employee: 68.2% Manager: 31.8%	Employee: 85.1% Manager: 14.9%	Nurse: 100%	PhD student: 43.8% Temporary researcher: 56.2%	Journalist employee: 45% Freelance journalist: 55%

Note. The heterogeneous groups are composed as follows:
- Group 2: 60.9% employees in different profit organizations; 27.3% managers in different profit organizations; 7.3% teachers; 4.5% dentists
- Group 3: 78.1% employees in different profit organizations; 14.9% managers in different profit organizations; 3.1% teachers; 3.9% social workers.

heterogeneous because the questionnaires were distributed in training courses whose providers accepted to support the realization of the study. They helped the researchers in reaching different respondents who accepted to participate in the research by filling out a paper questionnaire or by using a link on a platform, depending on preferences. In particular, Groups 1 and 3 received a paper questionnaire, whereas Groups 2, 4, 5, and 6 received a link to a questionnaire placed on an online platform of University of Turin (named Uniquest).

Measures

The WOLF scale developed by Bakker (2008) consists of 13 items divided into three subscales: the subscale ABS contains four items (Cronbach's alpha in the original study on average .80); the subscale WE contains four items (Cronbach's alpha in the original study on average .90); and, finally, the subscale IWM contains five items (Cronbach's alpha in the original study on average .75). All items are shown in Table 2.

Before administering the FaW scale, items were translated from English to Italian. Then, an expert English mother tongue made a back-translation from Italian into English, again. The result was a good correspondence between items. As in the WOLF instrument, Italian respondents were asked to indicate their FaW experience considering the last two weeks. Moreover, consistent with the instrument developed by Bakker (2008), respondents could react to the items using a frequency scale ranging from 1 (*never*) to 7 (*always*).

Data Analyses

To assess the factorial validity of the I-WOLF, six groups of employees from different occupations were considered. The exploratory factor analysis (SPSS 21) was performed on one group (Group 1). Data from the other groups (2, 3, 4, 5, 6) were used to perform a multigroup confirmatory factor analysis (MPLUS 7). Moreover, the reliability of the I-WOLF was calculated by examining the internal consistencies of the subscales for each group (SPSS 21).

RESULTS

Exploratory Factor Analysis

The exploratory factor analysis was conducted using data collected from Group 1. All data analysis (exploratory factor analysis, descriptive statistics, and alpha reliabilities) were performed with SPSS21. To explore data, the exploratory factor analysis was first conducted using maximum likelihood (ML) extraction, eigenvalues > 1 with no rotation, with varimax rotation, with oblimin rotation, and with promax rotation. All these data explorations showed a two-factor structure, overlapping WE and IWM. These results did not reflect the expected structure of the WOLF, but are in line with the theoretical indications by Davis, Bagozzi, and Warshaw (1992), that suggested enjoyment as a type of intrinsic motivation.

After this, in order to complete data exploration, analyses were performed requiring one factor, three factors, and four factors with no rotation, varimax rotation, oblimin rotation and promax rotation, with ML extraction. The solution with three factors and oblimin rotation showed the expected factor structure and saturation loading. Therefore, the three-factor solution obtained with ML extraction and oblimin rotation (Kaiser's normalization) was chosen, since it showed no overlapping loadings and was composed of four items for ABS (Cronbach's alpha .86), four items for WE (Cronbach's alpha .95), and five items for IWM (Cronbach's alpha .79), in line with the FaW scale developed by Bakker (2008).

TABLE 2
Exploratory factor analysis: Three-factor solution
(ML extraction; oblimin rotation; Kaiser's normalization; *N* = 323)

Item number	Items	Factors		
		WE	ABS	IWM
i7	Durante il lavoro mi sento felice [I feel happy during my work]	**.94**	.05	–.01
i8	Mentre sto lavorando mi sento allegro [I feel cheerful when I am working]	**.92**	–.02	–.03
i5	Il mio lavoro mi fa stare bene [My work gives me a good feeling]	**.78**	.02	.13
i6	Svolgo il mio lavoro con molto piacere [I do my work with a lot of enjoyment]	**.77**	.04	.13
i4	Sono totalmente immerso nel mio lavoro [I am totally immerged in my work]	.05	**.88**	–.04
i3	Quando sto lavorando, mi dimentico di tutto quello che mi circonda [When I am working, I forget everything else around me]	–.13	**.87**	.09
i1	Quando sto lavorando non penso a nient'altro [When I am working, I think about nothing else]	.00	**.73**	–.03
i2	Mi faccio coinvolgere dal mio lavoro [I get carried away by my work]	.12	**.62**	.01
i13	La mia motivazione deriva dal lavoro in sé e non dalla retribuzione [I get my motivation from the work itself, and not from the reward for it]	–.12	.04	**.84**
i9	Farei ancora questo lavoro anche se pagato meno [I would still do this work, even if I received less pay]	–.00	.01	**.69**
i11	Lavoro perché mi piace [I work because I enjoy it]	.19	.04	**.59**
i12	Quando sto lavorando su qualcosa lo faccio per me stesso [When I am working on something, I am doing it for myself]	.11	–.03	**.51**
i10	Penso che vorrei lavorare anche nel mio tempo libero [I find that I also want to work in my free time]	.04	–.00	**.39**
Alpha		.95	.86	.79
M (item)		4.14	4.63	3.41
SD		1.44	1.28	1.26

Correlation between factors

	WE	ABS	IWM
WE	1		
ABS	.40	1	
IWM	.76	.51	1

Note. The table contains the Italian translation of items. The original items of the scale are shown between brackets.
WE = work enjoyment; ABS = absorption; IWM = intrinsic work motivation.

As shown in Table 2, the first factor, WE, presents high loading in relation to the four items of the dimension presented by Bakker. There are no cross-loadings and factor loadings ranged from .77 to .94. Also the second factor, ABS, presents high loading in relation to the original dimension by Bakker (2008) and shows no cross-loadings. As for factor loadings, they range from .62 to .88. The last factor, IWM, maintains all five items, and factor loadings range from .39 to .84. Also this factor shows no cross-loadings.

This three-factor solution absorbs 61% of the total variance: WE explains 44% of the variance, ABS explains 13% of the variance, and IWM explains 4% of the variance. All these results are in line with Bakker's solution that absorbed 65% of the total variance and obtained 46% of explained variance for WE, 10% for ABS and 9% for IWM. As for correlations between factors, they resulted significantly related: in particular, the highest correlation resulted between WE and IWM (r = .76), the second highest correlation resulted between ABS and IWM (r = .51), followed by the correlation between WE and ABS (r = .40).

Confirmatory Factor Analysis

Confirmatory factor analysis was conducted with Mplus 7 (Muthén & Muthén, 1998/2012), using data of respondents from the other five groups (2, 3, 4, 5, 6). In particular, a multigroup confirmatory factor analysis was conducted to test the possibility to validate the measurement model among different groups. To test the model's goodness of fit, the following indices were considered: the chi-square value (χ^2); the comparative fit index (CFI); the Tucker-Lewis index (TLI); the root mean square error of approximation (RMSEA); the standardized root mean square residual (SRMR).

As shown in Table 3, different factor models were tested, and the best fitting model resulted for the three-factor model, in line with Bakker's (2008) study. Within the three-factor model only the RMSEA (.08) presented a limiting value, but can still be considered acceptable (Browne & Cudeck, 1993). The CFI and the TLI, which are both considered less dependent on sample size, each exceeded the value of .90, indicating a good fit between the model and the five data sets (Hoyle, 1995).

Looking at the three-factor model, all items loaded only on the intended factors. In the five groups, the factor loadings for ABS ranged from .65 to .94; the factor loadings for WE ranged from .65 to .95; and the factor loadings for IWM ranged from .37 to .79. As in Bakker's study (2008), in this factor there is a loading value lower than .40, but it is present only in one group (4).

Looking at the other models and their fit indices, it is evident that the only acceptable model is the three-factor solution. Hypothesis 1 is therefore confirmed. Model 5 that proposes an overall flow-factor on which all items are loading is not adequate. This is evident from the model fit indices, and because the chi-square difference test between Model 5 and Model 1 shows a substantial increase of fit, $\Delta\chi^2(23) = 1886.670$, $p < .00$. Moreover, also Model 2 (combining ABS and WE), Model 3 (that combines ABS and IWM), and Model 4 (mixing WE and IWM) do not fit the data well, making these solutions not acceptable. The conclusion is that the three-factor solution with Italian items is in line with the original factor solution developed by Bakker (2008), who, in addition, stated that the three-factor solution "can be distinguished theoretically, as well as empirically" (p. 404).

TABLE 3
Results of multigroup confirmatory factor analysis for five groups (N = 977)

MODEL	χ^2	*df*	*p*	RMSEA	CFI	TLI	SRMR	Model comparison	$\Delta\chi^2$	*df*	*p*
Model 1: three-factor model	938.100	350	.00	.08	.93	.92	.06				
Model 2: two-factor model ABS+WE, IWM	2393.870	364	.00	.17	.76	.74	.14	M2-M1	1455.770	14	.00
Model 3: two-factor model ABS+IWM, WE	2130.171	364	.00	.16	.79	.78	.13	M3-M1	1192.071	14	.00
Model 4: two-factor model WE+IWM, ABS	1417.806	364	.00	.12	.88	.87	.11	M4-M1	479.706	14	.00
Model 5: one-factor model	2824.770	373	.00	.18	.71	.70	.15	M5-M1	1886.670	23	.00

Note. RMSEA = root mean square error of approximation; CFI = comparative fit index; TLI = Tucker-Lewis index; SRMR = standardized root mean square residual; $\Delta\chi^2$ = chi-square difference. ABS = absorption; WE = work enjoyment; IWM = intrinsic work motivation.

Reliability

Table 4 shows the intercorrelations and the reliability coefficients of the three flow dimensions which correlate weakly to moderately strongly with each other. In particular, the lowest correlation was found between ABS and IWM (r = .37; Group 5), whereas the highest correlation was found between WE and IWM (r = .71; Groups 1 and 5). These results are perfectly in line with the results by Bakker (2008) (who found the lowest correlation between ABS and IWM, r = .44; and the highest correlation between WE and IWM, r = .82) and, again, it is clear that WE and IWM present the highest positive correlations in each group, confirming Hypothesis 2.

As for reliabilities, all Cronbach's alphas are acceptable, demonstrating that each dimension, in each group, presented a good internal consistency. All Cronbach's alphas ranged between .78 and .96. In particular, Cronbach's alpha is high for WE (on average around .94); good for ABS (on average around .87), and acceptable for IWM (on average around .80) (cf. Nunnally, 1978). These ranges and this trend are in line with those found by Bakker (2008). It seems that the I-WOLF reflects the original scale (WOLF) not only in the factor structure, but also in correlations and reliabilities.

TABLE 4
Reliability and correlations between the three dimensions of FaW in the six groups

FaW dimensions	Group 1 Health professionals (N = 323)			Group 2 Heterogeneous group (N = 147)			Group 3 Heterogeneous group (N = 129)			Group 4 Nurses (N = 197)			Group 5 Academic precarious workers (N = 225)			Group 6 Journalists (N = 279)		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1. ABS	(.86)			(.90)			(.84)			(.86)			(.89)			(.85)		
2. WE	.41	(.95)		.57	(.95)		.41	(.94)		.43	(.94)		.47	(.93)		.47	(.96)	
3. IWM	.45	.71	(.79)	.51	.61	(.84)	.38	.68	(.79)	.40	.67	(.78)	.37	.71	(.81)	.40	.61	(.80)

Note. All correlations are significant at the $p < .01$ level. Cronbach's alpha on the diagonal (between brackets). ABS = absorption; WE = work enjoyment; IWM = intrinsic work motivation.

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STEP 2: RELATIONSHIPS BETWEEN THE DIMENSIONS OF THE I-WOLF AND OTHER CONSTRUCTS

The second step of the present study aimed to investigate more psychometric characteristics of the I-WOLF through the correlations between the three dimensions of the I-WOLF and other constructs that are generally expected to be correlated with these dimensions. Referring to the literature, the strongest antecedents of FaW are job resources (Bakker, 2005; Demerouti, 2006), but empirical evidences suggest that also personal resources (e.g., self-efficacy, coping, optimism, etc.) can lead to the optimal experience at work (Salanova, Bakker, & Llorens, 2006), since they can increase FaW and buffer the effect of job demands and decrease the level of distress, particularly exhaustion (Garrosa, Moreno-Jiménez, & Rodríguez-Muñoz, 2011). Considering the JD-R model (Bakker & Demerouti, 2014), and the study on the WOLF by Bakker (2008), the investigated correlations considered personal resources (internal locus of control; optimism), job resources (supervisors' support; job autonomy), and job demands (workload; emotional dissonance). In this study emotional dissonance was considered a demand because managing this experience, in the long term, exposes individuals to the risk of exhaustion (Colombo & Zito, 2012), decreasing the level of work pleasure (Bakker, 2008).

As hypothesized in H3a, it is expected that personal resources and job resources positively correlate with each of the flow dimensions and, as for H3b, job demands, and particularly workload, positively correlate with ABS and negatively correlate with WE and IWM. This expectation on the relationship between job demands and the flow dimensions are led both by empirical evidences (Bakker, 2008; Demerouti, 2006; Demerouti, Bakker, Nachreiner, & Schaufeli, 2000), and by theoretical propositions/arguments (Csikszentmihalyi, 1990), suggesting that job demands could both damage pleasure at work, and increase the ABS dimension because employees under pressure often lose their sense of time becoming immersed in their work.

Moreover, in this study, we also considered outcomes such as job satisfaction, life satisfaction, and positive and negative emotions at work. As hypothesized in H3c, FaW is expected to be positively related to job satisfaction (Bakker, 2008; Csikszentmihalyi, 1990), but also with life satisfaction and positive emotions at work as the contagion of emotion theory let to suppose (Salanova et al., 2006). Consequently, in line with H3d, negative emotions at work are expected to negatively correlate with the dimensions of FaW.

METHOD

Participants and Procedure

To test the correlations between the three dimensions of the I-WOLF and the job demands, personal and job resources and other outcomes that are expected to be related with FaW on the basis of literature, data from Groups 2, 3, 4, 6 presented before (see Table 1), were used. It was possible to use data from these groups since they share the variables to perform the correlation analyses showed below.

Measures

Personal Resources

Internal locus of control: five items on a 6-point Likert scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*) taken from Rotter (1966). Cronbach's alpha for the current study was .83.

Optimism: six items on a 6-point Likert scale ranging from 1 (*disagree*) to 6 (*agree*) taken from Scheier, Carver, and Bridges (1994). Cronbach's alpha was .70.

Job Resources

Supervisors' support: four items on a 6-point Likert scale ranging from 1 (*not at all*) to 6 (*completely*) taken from Caplan, Cobb, French, Harrison, and Pinneau (1975). Cronbach's alpha was .92.

Job autonomy: three items on a 5-point Likert scale ranging from 1 (*never*) to 5 (*always*) from Bakker, Demerouti, and Verbeke (2004). Cronbach's alpha was .71.

Job Demands

Workload: six items on a 6-point Likert scale ranging from 1 (*disagree*) to 6 (*agree*) taken from Karasek and Theorell (1990). Cronbach's alpha was .89.

Emotional dissonance: four items on a 6-point Likert scale ranging from 1 (*never*) to 6 (*always*) taken from Zapf, Vogt, Seifert, Mertini, and Isic (1999). Cronbach's alpha was .88.

Outcomes

Job satisfaction: four items on a 5-point Likert scale ranging from 1 (*very unsatisfied*) to 5 (*very satisfied*) taken from Pejtersen, Kristensen, Borg, and Bjorner (2010). Cronbach's alpha was .85.

Life satisfaction: five items on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) taken from Pavot and Diener (1993). Cronbach's alpha was.92.

Positive emotions at work: six items on a 6-point Likert scale ranging from 1 (*never*) to 6 (*always*) taken from Warr (1990). Cronbach's alpha was .81.

Negative emotions at work: six items on a 6-point Likert scale ranging from 1 (*never*) to 6 (*always*) taken from Warr (1990). Cronbach's alpha was .86.

Data Analyses

In this step data analyses performed, using SPSS21, correlations (Pearson's *r*) between the different detected variables and the three dimensions of the FaW scale.

RESULTS

Results of correlations between the three dimensions of FaW, personal resources, job resources, and job demands are showed in Table 5.

TABLE 5
Correlations between personal resources, job resources, job demands, other outcomes and the three dimensions of FaW in the considered groups

Variable	Group	ABS	WE	IWM
Personal resources				
Internal locus of control	2, 3, 4, 6 (N = 752)	.25**	.30**	.28**
Optimism	2, 3, 4, 6 (N = 752)	.06*	.26**	.16**
Job resources				
Supervisors' support	2, 3, 4, 6 (N = 752)	.12**	.29**	.18**
Job autonomy	2, 3, 4, 6 (N = 752)	.18**	.38**	.25**
Job demands				
Workload	2, 3, 4, 6 (N = 752)	.25**	.01	.09*
Emotional dissonance	2, 3, 4, 6 (N = 752)	–.06	–.28**	–.19**
Outcomes				
Job satisfaction	2, 3, 4, 6 (N = 752)	.10**	.42**	.25**
Life satisfaction	2, 3, 4 (N = 473)	.19**	.47**	.33**
Positive emotions at work	2, 3, 4 (N = 473)	.22**	.64**	.43**
Negative emotions at work	2, 3, 4 (N = 473)	.04	–.30**	–.10*

Note. ABS = absorption; WE = work enjoyment; IWM = intrinsic work motivation. Group 2 = heterogeneous; Group 3 = heterogeneous; Group 4 = nurses; Group 6 = journalists.
* $p < .05$. ** $p < .01$.

Referring to H3a and H3b, the relations between the three dimensions of FaW and the resources and demands are observed. In particular, ABS positively correlates with internal locus of control (r = .25) and workload (r = .25). This dimension correlates also with both job resources: more with job autonomy (r = .18) and less with supervisors' support (r = .12). As for the other

personal resource, optimism, the correlation is positive but very weak (r = .06). ABS does not correlate with emotional dissonance.

Referring to WE, this dimension is positively correlated with both personal and job resources. More specifically, WE presents a stronger correlation with job autonomy (r = .38), then with internal locus of control (r = .30), with supervisors' support (r = .29), and a weaker correlation with optimism (r = .26). As for job demands, WE shows a negative correlation with emotional dissonance (r = –.28) and no significant correlations with workload.

IWM presents significant correlations with all the constructs. In particular, the highest correlations are positive and resulted with internal locus of control (r = .28) and job autonomy (r = .25). The other two (personal and job) resources show a weaker correlation: first with supervisors' support (r = .18), then with optimism (r = .16). Within job demands, the highest correlation is negative and resulted with emotional dissonance (r = –.19); a weak and positive correlation resulted also with workload (r = .09). Generally, these results show that hypothesis H3a is confirmed, and hypothesis H3b is partially confirmed.

As for hypothesis H3c and H3d, referred to the correlations between the three dimensions of FaW and outcomes (three positive and one negative), it is not surprising that WE presents the highest positive relations. In particular this dimension is positively correlated with positive emotions at work (r = .64), with life satisfaction (r = .47), and with job satisfaction (r = .42). As expected, WE shows a negative correlation with negative emotions at work (r = –.30).

Other high correlations were found between IWM and the treated outcomes. Like WE, IWM shows highest positive correlations with positive emotions at work (r = .43), with life satisfaction (r = .33), and with job satisfaction (r = .25). Also in this case, IWM has a negative, but weak, correlation with negative emotions at work (r = –.10).

ABS presents the same trend as the other two flow dimensions, but with weaker correlations. ABS is more correlated with positive emotions at work (r = .22), with life satisfaction (r = .19), and with job satisfaction (r = .10). There is no significant correlation between ABS and negative emotions at work. Looking at these results it is possible to assume that H3c is confirmed, and H3d is partially confirmed.

In order to observe more psychometric characteristics of the scale, additional regression analyses were added, starting from correlations. It is interesting to highlight that the regression betas follow the trend of correlations. In particular, ABS (R^2 = .14) is more related with workload (ß = .24; t = 6.71, p < .000) and then with internal locus of control (ß = .20; t = 5.12, p < .000) and job autonomy (ß = .14; t = 3.61, p < .000). WE (R^2 = .26) is particularly related to job autonomy (ß = .22; t = 6.04, p < .000), internal locus of control (ß = .19; t = 5.36, p < .000), supervisors' support (ß = .17; t = 5.02, p < .000), less with optimism (ß = .09; t = 2.63, p < .001), and it is also negatively related to emotional dissonance (ß = –.17; t = –5.11, p < .000). IWM (R^2 = .14) is particularly related with internal locus of control (ß = .20; t = 5.22, p < .000), with workload (ß = .13; t = 3.43, p < .001), with job autonomy (ß = .12; t = 3.05, p < .001), less with supervisors' support (ß = .10; t = 2.55, p < .001), and it is also negatively related with emotional dissonance (ß = –.16; t = –4.24, p < .000).

Discussion

The aim of this study was to adapt the WOLF scale (Bakker, 2008) in the Italian language, in order to provide an instrument that allows Italian researchers to measure the optimal

experience at work. This is functional also as a contribution to positive psychology, by providing new evidence about the possibility of measuring the flow experience in a work context in a reliable way. It provides the possibility of a validated instrument that allows to carry out research aimed at promoting work motivation and well-being within the work environment.

The analyses of the I-WOLF demonstrated the validity of the factor structure, that respected the three-factor solution of the original scale (WOLF) and, moreover, the pertinence of the Italian version with constructs that literature suggests to be related with FaW.

The multigroup confirmatory factor analysis showed that the three-factor model fitted the data better than the other solutions with one factor and with two factors, created by mixing the different dimensions. Contrary to Bakker's (2008) study and despite the high correlations between factors in the exploratory factor analysis, the two-factor solution that considered WE and IWM as a unique factor (with ABS as the other factor), did not fit the data. Due to this evidence, in this case, the two dimensions cannot be considered as a single dimension. Considering literature and the correspondence of factors in the previous analysis, it may be possible that it depends on the type of group and profession (and thus, job characteristics) considered, and on the opportunities given by jobs in terms of balance between challenges and skills.

However, the confirmatory factor analysis resulted adequate also with the considered group, since it returned a three-factor solution that fitted the data well and respected the original factor structure developed by Bakker (2008). These results are important to highlight the motivation component of the flow experience. A study by Rodriguez-Sanchez, Cifre, Salanova, and Åborg (2008), which did not use the WOLF scale, but measured the flow experience at work operationalized by ABS, WE, and IWM, found comparable results.

As for the reliability of the scales, they resulted good (or very good) in each group. The average trend is in line with that found by Bakker (2008), highlighting the best internal consistency for WE (on average around .94), then for ABS (on average around .87), and finally for IWM (on average around .80). There are no coefficients under .70 and all scales could be considered with a good internal consistency, as suggested by Nunnally (1978). The conclusion of these results is that the I-WOLF can be considered reliable. Moreover, considering also the factorial validity, the I-WOLF presents good psychometric characteristics for the assessment of FaW in the Italian language and contexts as well.

In order to asses other psychometric characteristics of the I-WOLF, this study considered also the correlations between the three FaW dimensions and other constructs that are generally expected to be correlated with them. Consistent with Bakker's (2008) study (and the cited literature on FaW), job characteristics were considered, specifically job demands and job resources, but also personal resources which some studies defined as antecedents of FaW as well (Salanova et al., 2006). These results, with the three-factor structure found, contribute to the need to give a predictive validity to the construct of flow (Fullgar & Kelloway, 2013).

Referring to personal resources, they are significantly and positively correlated with each of the three flow dimensions. In particular, the internal locus of control shows good correlations with the three dimensions, indicating that this dispositional characteristic could enhance the optimal experience at work in all its forms. Contrary, optimism seems to have a weak relation with ABS which may be relatively affected by this dispositional variable. Optimism, however, is related first with WE and also with IWM. Therefore, following Bakker's (2008) suggestions, optimism could be a good predictor of FaW, particularly for pleasure and motivation at work.

As for job resources, they are all positively and significantly correlated with the FaW dimensions. In particular, the social support from supervisors showed a higher correlation with WE, and this leads to the hypothesis that this type of resource can have positive effects on the employees' quality of working life. Job autonomy showed a positive relationship with the three flow dimensions, particularly with WE and IWM, showing that employees who can decide how to do their work are related with the perception of optimal experience (and pleasure) at work (Bakker, 2005). These results are clearly in line with the assumptions on FaW and the JD-R model. According to it, people experience positive work-related well-being when job and personal resources are high (Bakker & Demerouti, 2014): both types of resources help to reach organizational goals, deal with job demands, and foster motivation. In fact, resources are antecedents of FaW, which occurs when goals are clear, and when high skills (or action opportunities) are balanced with high challenges of a particular situation (Csikszentmihalyi, 1990; Delle Fave & Bassi, 1998).

Within job demands, ABS showed the highest correlation with workload, and this is consistent with Csikszentmihalyi (1990) suggesting that this type of job characteristic makes employees absorbed and immersed in their work. Moreover, Bakker (2008) suggests that a high effort coming from outside encourages the onset of absorption.

Emotional dissonance is negatively correlated with WE and IWM, highlighting that to express emotions that do not correspond to reality undermines the pleasure and the motivation at work. ABS does not present any relationship with emotional dissonance and this could be a point to look further into in future studies, both regarding different types of jobs and the relationship between the individual and his/her job.

As for the other considered constructs, it is interesting to note how WE showed the highest positive correlations with job satisfaction, life satisfaction, and positive emotions at work and the highest negative correlation with negative emotions at work. This may mean that the core dimension of work pleasure could show a clear relationship between the optimal experience at work and other cognitive (job satisfaction) and emotional (emotions at work) indicators of organizational well-being in a congruent way that considers both the flow theory and empirical evidence. If FaW is an inner experience that people can control and live it as an optimal experience, it is worthwhile to expect that it is positively related to indicators of organizational well-being, and negatively with indicators of distress.

In this study the I-WOLF shows also a consistency in its relationship with other constructs. Moreover, the observed relations with positive emotions are consistent with the studies suggesting that flow is linked to positive moods (Bloch, 2002) and well-being (Delle Fave & Massimini, 1988). Other studies observed that workers experiencing enjoyment at work can experience flow during their work activity (Bryce & Haworth, 2002; Csikszentmihalyi & LeFevre, 1989). It has to be noted that in the present study job satisfaction, life satisfaction, and positive emotions at work present the highest correlations with WE.

Also IWM shows the same trend as WE with these outcome constructs, but with weaker correlations. ABS follows the same tendency, except for negative emotions at work that does not present any significant correlation with this dimension. Considering also the lack of correlation with emotional dissonance, it could be interesting to investigate, in the future, the role of ABS as a sort of protection from negative emotional states, or from those that may have negative outcomes. In this sense, the immersion in an activity could facilitate concentration and protect the

individual from negativity, leading to the optimal experience. In this regard, it is interesting to note that the variable positive emotions at work has the highest correlations with each of the three FaW dimensions.

CONCLUSIONS

This study offers an instrument to measure FaW also in the Italian research, both through exploratory and confirmatory factor analyses and by investigating other psychometric properties of the scale, offering a contribution to positive psychology. However, it has some limitations.

The first is the lack of the evaluation of opportunity for self-growth, a variable that can activate the flow experience (Bakker, 2005, 2008). Moreover, this study used questionnaires measuring FaW retrospectively and not by collecting data on flow experience, for instance using beepers that randomly, in the day, remind respondents to fill out their feelings and experiences, as Csikszentmihalyi's (1990) ESM procedure does. However, it must be said that for the construction of the WOLF by Bakker (2008) and other studies on FaW, questionnaires were used with good results.

Another limitation is the use of a cross-sectional design of the study that does not permit to establish definite causality relationships between variables. Measuring FaW day by day, as suggested by Bakker and Daniels (2013), could be functional to prevent bias and, moreover, observing the fluctuation of this experience during the day for a period could be very useful to understand the dynamics of the optimal experience.

Finally, this study could have considered also more homogeneous professional groups, rather than considering two heterogeneous groups, to assess the validity of the I-WOLF. Future research could consider this aspect in order to detect a correspondence between WE and IWM that the present confirmatory factor analysis has not revealed.

However, results of this study indicated a good three-factor structure, with good data fit, loadings and reliabilities, allowing the use of the I-WOLF in research on the flow experience conducted in Italy. For example, the instrument could also be used to deepen the role of job demands within the experience of FaW, that this study highlight depending from the specific considered job demands, in line with the study by Bakker and Sanz-Vergel (2013). This study underlines the distinction between challenging demands (obstacles to be overcome to learn and achieve) and hindrance demands (that impede personal growth and goal achievement).

Finally, it is worthwhile to consider the practical implications of the FaW because it can be useful not only for research, but also for human resources management practices. Measuring and evaluating the flow experience is, indeed, functional to assess the dynamics of organizational well-being and the level of employees' motivation. Moreover, understanding the dynamics that favor FaW could guide leaders/managers to express a more appropriate style of leadership. On the one hand, indeed, supportive leaders can represent a fundamental resource themselves, for instance, understanding their employees' needs, considering the organizational changes and redesigning the employees' activities. On the other hand, they could give additional resources, such as opportunities for training and for professional development, assessing the achieved learning outcomes and, therefore, favoring the establishment of the balance that leads to the flow experience.

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