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CAREER CALLING: SCALE VALIDATION AND MEDIATION EFFECTS ON WORK-RELATED OUTCOMES

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In this paper, we investigate the validity of Dobrow and Tosti-Kharas' (2011) Calling Scale (CS) and the generalizability of previous findings about calling and work-related outcomes in Italy. In the first study, the Italian version of the CS was validated. Exploratory and confirmatory factor analyses supported unidimensionality, and the measurement model was found to be invariant across gender and partially invariant across calling domains. Scale scores were found to possess adequate internal consistency and convergent validity. Study 2 supported the hypotheses that experiencing work as a calling relates to job satisfaction, life satisfaction, and turnover intention, and that these relations are mediated by career commitment. These results support the validity of inferences drawn from the Italian version of the CS and generalize some critical propositions of the work as calling theory to an Italian sample.

Keywords: Career calling; Career calling scale; Career commitment; Work-related outcomes.

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Interest in the concept of calling has been nurtured in recent years by promising empirical evidence that feeling a career calling may be a prelude to success and well-being at work (Dalla Rosa, Galliani, & Vianello, 2017). Since psychologists began to study calling, its definition has gradually changed from a strictly religious construct to one that is largely secular. One of the most widely used modern definitions of calling is that proposed by Dobrow and Tosti-Kharas (2011), according to whom a calling is "a consuming, meaningful passion people experience toward a domain" (p. 1005). Dobrow and Tosti-Kharas (2011) underscored the subjective nature of a calling, describing it as a person's profound passion for a domain that is extremely significant to a person and, is associated with a sense of inevitability and destiny. A sense of calling has an external object, which is not necessarily work-related but might include, for instance, education, volunteer work, and artistic and sports activities. Other common definitions are typically called neo-classical, and they underscore the dual significance of prosociality and a transcendent summons (Thompson & Bunderson, 2019; Vianello, Galliani, Dalla Rosa, & Anselmi, 2020). According to this approach, a calling is defined as a transcendent summons coming from outside or beyond the self to approach a life role that is beneficial to others or society (Dik, Eldridge, Steger, & Duffy, 2012).

Beyond the lack of agreement about the definition of calling, most scholars concur that a career calling might be the pathway for well-being and success in life (Goštautaitė, Bučiūnienė, Dalla Rosa, Duffy, & Kim, 2020; Thompson & Bunderson, 2019). To explain the relation between perceiving a calling and its outcomes, Duffy, Dik, Douglass, England, and Velez (2018) proposed the work as a calling theory (WCT). According to the WCT, a calling might be a predictor of job satisfaction through work meaning and career commitment. Individuals who perceive their work as a calling think that their work is significant and in line with the purpose of their life. These individuals are committed to their careers and to the organizations that allow them to express their calling at work. Therefore, they present a positive attitude toward their work, they enjoy what they do, and they are motivated to devote energy and time to work.

The majority of studies about calling have involved samples from the United States, and scholars have emphasized the need for more intercultural research on career calling (Dik, Canning, & Marsh, 2019; Duffy & Dik, 2013; Elangovan, Pinder, & McLean, 2010). In this paper, we propose a step forward in this direction by presenting the first validation of the Calling Scale (CS) developed by Dobrow and Tosti-Kharas (2011) with non-English-speaking college students and employed adults (Study 1) and the analysis of some propositions of the WCT among Italian employed adults (Study 2).

Based on their own definition, Dobrow and Tosti-Kharas (2011) developed the CS, which has been used successfully in various cross-sectional and longitudinal studies (Dobrow, 2013; Dobrow & Heller, 2014; Dobrow & Tosti-Kharas, 2012; Harzer & Ruch, 2016). The CS includes 12 items and was extensively validated across samples of students and employed adults. Scale scores were found to be consistent (Cronbach's alpha > .88) and moderately stable in the short and long term. Exploratory and confirmatory factor analyses supported a one-dimensional structure that accounted for 42% to 62% of the overall variance. Scale scores demonstrated a pattern of correlations in the expected direction with alternative measures of calling and conceptually different variables (Dobrow & Tosti-Kharas, 2011). To the best of our knowledge, the CS has been used twice with non-English-speaking participants (Guo et al., 2014; Harzer & Ruch, 2016). Unfortunately, the adapted versions of the scale have not been validated.

Using a sample of Italian college students and employed adults, we evaluated the factor structure of the Italian version of the scale, its reliability, and the convergent validity of the scale scores. We also evaluated measurement invariance across gender and study domains.

To evaluate convergent validity, we examined the relation between the measure of calling obtained with the CS, the presence of and search for a calling assessed with the Calling and Vocation Questionnaire (CVQ; Dik et al., 2012), and the calling orientation assessed with a single-item measure developed by Wrzesniewski, McCauley, Rozin, and Schwartz (1997). These alternative measures of calling were expected to be positively correlated but differentiable. According to Dik and colleagues (2012), some people perceive that they currently have a calling (*presence of calling*), and others might not currently have a calling, but they are looking for it (*search for a calling*). As the CS assesses the presence of a calling, we expected the correlation to be higher with the CVQ-Presence subscale than with the CVQ-Search subscale.

The second study focused on the relation between calling, job satisfaction, life satisfaction, and turnover intention. The aim of the second study was to test whether previous findings and theoretical assumptions derived from the WCT are generalizable to an Italian sample.

The associations between calling and job satisfaction, and between calling and life satisfaction are among the most studied in the literature on calling (Dalla Rosa et al., 2017). Correlations with job satisfaction range from .17 to .66 with a meta-analytic mean of .51, 95% confidence interval (CI) equal to [.50, .53], and correlations between calling and life satisfaction range from –.01 to .48 with a meta-analytic mean of .28, 95% CI = [.27, .30]. The relation of calling and job satisfaction, a measure of positive attitude towards the calling domain, was found to be stronger than the relation with general measures of a positive attitude, such as life satisfaction. The relations between calling, job satisfaction, and life satisfaction have never been investigated among Italian employed adults. We expected calling to be positively related to job and life satisfaction (Hypothesis 1), and we expected the correlation between calling and life satisfaction would be lower than the correlation between calling and job satisfaction (Hypothesis 2).

Several studies in United States have observed that people with a calling are less likely to harbor withdrawal attitudes, such as thoughts of quitting work (Cardador, Dane, & Pratt, 2011; Chen, May, Schwoerer, & Augelli, 2018; Duffy, Dik, & Steger, 2011). Turnover intentions capture the degree to which employed adults intend to quit their current job. If individuals perceive a strong passion for their work and believe that they are destined to do their job, then they should also have lower intentions to leave their job and be motivated to pursue their calling in their professional career. Therefore, we hypothesized that calling would be negatively related to turnover intention (Hypothesis 3).

The WCT suggests that calling is positively related to career commitment, and that the relation between calling and job satisfaction is mediated by career commitment (Duffy, Bott, Allan, Torrey, & Dik, 2012; Duffy et al., 2011; Duffy et al., 2018). A calling is expected to enhance job satisfaction by fostering attachment to one's career. In the second study, using a sample of Italian employed adults, we tested the hypothesis that career commitment mediates the relation between calling and job satisfaction. In addition, we extended the WCT proposition by including two outcomes of calling: life satisfaction and turnover intention. Specifically, we expected career commitment to mediate the relation between calling and life satisfaction and between calling and turnover intention (Hypothesis 4).

STUDY 1

Method

Participants and Procedure

The first sample was composed of 5,886 Italian college students enrolled in 24 different programs. These data corresponded to the first wave of data collected by Dalla Rosa, Vianello, and Anselmi (2019). Data and survey are available online (https://osf.io/v56du/) and described in Dalla Rosa, Vianello, Galliani et al. (2019). Participants were invited by e-mail to answer an electronic survey on a voluntary basis. Upon receiving the invitation message, they were informed that participation in the survey presented no risk, and that the data would be anonymized, and used exclusively in aggregated form for scientific purposes. They were also informed that they could withdraw from the study at any time without giving a reason, simply by closing their browser. Data protection followed regulation of the Italian country (Legislative Decree n. 196/2003) and of the European Union (regulation n. 2016/679). Participants were then informed that going further in the survey would be interpreted as their signature on the consent form. Their consent was electronically recorded. Of the sample, 36.2% were male and 63.8% female, and the mean age was 23.37 years (*SD* = 5.39).

The second sample was composed of 205 Italian working adults; 106 were public high school teachers, and 99 were public and private employees. The majority were females (67.3%), and the mean age was 46.81 (*SD* = 11.18), job seniority ranged between one to 48 years with an average of 19.09 years (*SD* = 11.72). Participants were invited to take part in the survey by two specifically trained master students. The first page of the questionnaire informed participants on their rights, that participation in the survey presented no risk, and that their data would be recorded anonymously. The data collection and protection processes followed Italian regulations (Legislative Decree n. 196/2003) and the European Union (EU) regulation n. 2016/679.

Measures

Measures that were not available in Italian were translated and back-translated by three independent experts. The internal consistency scores (Cronbach's alpha) for the scales are reported in Tables 3 and 4.

Calling Scale. This scale was derived from Dobrow and Tosti-Kharas (2011) and consists of 12 items on a 7-point scale with 1 meaning *strongly disagree* and 7 *strongly agree*. For the purposes of this study, we developed student and employed adult versions of the scale by replacing domain-specific segments in the original items with a general reference to the study domain or to work. For instance, the item "I am passionate about playing my instrument/singing/engaging in my artistic specialty/business/being a manager" was modified as follows: "I am passionate about what I am studying" in the student version of the scale, and "I am passionate about my work" in the employed adult version. Other example items are: "My existence would be much less meaningful if I was not involved in these studies/without my job" and "I would keep studying this subject/doing my job even in the face of severe obstacles."

Calling and Vocation Questionnaire. A short version (18 items) of the CVQ (Dik et al., 2012) was adopted to measure presence of calling (CVQ-Presence) and search for a calling (CVQ-Search) in the sample of college students. The presence of calling subscale from the long version of the CVQ (12 items) was used with the sample of employed adults. The CVQ shows strong evidence of test-retest reliability and internal consistency over a 1-month interval (Dik et al., 2012). Cronbach's alphas are .89 and .90 for CVQ-Presence and .87 and .90 for CVQ-Search. The scale possesses good convergent and discriminant validity as tested using a multitrait-multimethod analysis (Dik et al., 2012). Items are rated on a scale of 1–4, with 1 = *not at all true of me*, and 4 = *totally true of me*. Example of items include: "My academic and professional career is important to give meaning to my life" (Purpose, Presence) and "I'm searching for my career calling" (Transcendent Summons, Search). The short version of the scale was validated in a sample of college students (Dalla Rosa, Vianello, & Duffy, 2019).

Calling Work Orientation. Wrzesniewski et al. (1997) developed a single-item measure comprising a paragraph describing an employed adult with a calling orientation toward work. Respondents are asked to rate to what degree they identify with this profile on a scale from 1 (*not at all similar*) to 4 (*totally similar*). The description used is provided here: https://osf.io/2gn4d/.

Statistical Approach

The first half of the college student dataset was used for the exploratory factor analysis (n = 2,935), and the second half for the confirmatory factor analysis (n = 2,951). All analyses were performed using IBM SPSS 24 and MPlus 7.0. The chi-square test of close fit, the comparative fit index (CFI), the standardized root mean square of residuals (SRMR), and the root mean square error of approximation (RMSEA) were adopted to assess model fit according to the following criteria: CFI $\geq$ .90; RMSEA $\leq$ .08; SRMR $\leq$ .10 (Kline, 2015; Sharma, Mukherjee, Kumar, & Dillon, 2005; Vandenberg, & Lance, 2000).

Measurement Invariance

Measurement invariance across gender and study domains was tested by comparing four nested models (Meredith, 1993): *configural* (the same item must load on the same latent factor), *metric* (equal factor loadings), *strong* (equal item intercepts), and *strict* (equal error variances). When the test of close fit was statistically significant (alpha level set to .005), we looked at differences in fit indexes. For testing metric invariance (equal factor loading), a change ≤ –.010 in the CFI, supplemented by a change ≥ .015 in the RMSEA or a change ≥ .030 in the SRMR, would denote noninvariance. For testing strong and strict invariances (equal intercepts and error variances), a change ≤ –.010 in the CFI, supplemented by a change ≥ .015 in the RMSEA or a change ≥ .010 in the SRMR would denote noninvariance (Chen, 2007).

Testing Convergent Validity

Convergent validity was assessed by examining the pattern of correlations between the CS and alternative measures of calling. Correlations higher than .50 were further inspected to examine whether the variables were convergent to the point of redundancy. A Wald test was used to assess whether the correlation between the two latent factors differ significantly from 1. Evidence of redundancy was provided by a not statistically significant difference.

Results

Factorial Validity and Reliability

We performed an exploratory factor analysis (EFA) using principal axis factoring and oblique Promax rotation. The number of factors extracted with eigenvalues greater than or equal to one indicated that two factors accounted for 56.17% of the total variance. Scree plot and parallel analysis revealed a single factor accounting for 49.89% of the total variance in the measure. All items had a factor loading of .61 or higher. A comparison between the two- and one-factor solutions revealed that the one-factor model produced a considerably clearer pattern of factor loadings than the two-factor solution did.

We then performed a confirmatory factor analysis (CFA) testing a single factor model with a maximum likelihood estimator. The initial model showed a poor fit, χ^2 (df = 54) = 3,471.77, p < .001; CFI = .83; RMSEA = .15; SRMR = .06. The inadequate fit was due to covariances among errors being initially set to zero, so we decided to move on to an exploratory approach and to an attempt to modify this model in a sound and responsible manner. The model respecification is justified, as salient covariances in errors arise from items that covary for the use of similar wording or the reference to the same domain (Item 1 with Item 2; Item 2 with Item 3; Item 4 with Item 6; Item 7 with Item 8; Item 9 with Item 10). Specifically, Items 1, 2, and 3 refer to personal satisfaction, passion, and enjoyment and include the expression "what I study"; Items 4 and 6 refer to "severe sacrifice" and "severe obstacles" and contain the wording "continue studying"; Items 7 and 8 refer to calling as part of life and destiny and include the reference to "what I study"; both Item 9 and 10 refer to the presence of calling in individuals' conscientiousness and contain the expressions "often think" and "always in my thoughts." Freeing the correlations between the residuals increased the model fit, χ^2 (df = 49) = 1020.284, p < .001; CFI = .95; RMSEA = .08; SRMR = .04. All items significantly loaded on the calling latent variable (p < .001), and factor loadings were equal to or higher than .60.

The single-factor model was then evaluated in a sample of employed adults. After six correlations were included among the item residuals, the model fit was good: χ^2 (df = 48) = 114.28, p < .001; CFI = .94;

RMSEA = .08; SRMR = .05. All loadings were significant and higher than .57. See Figure 1 for a graphic depiction of the final model.

Cronbach's alpha and omega were .92 in both samples. The two Italian versions of the CS, hereafter ICS, the item means, and the standard deviations are provided in a web supplement at: https://osf.io/69723/.

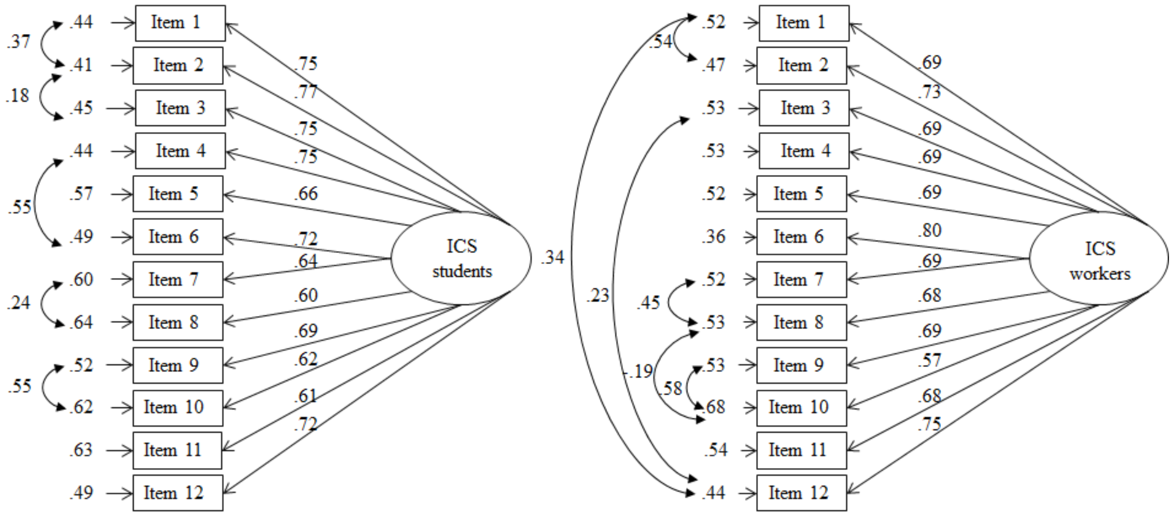

FIGURE 1
The CFA measurement model in the total sample of college students (left panel) and employed adults (right panel).
Note. Model fit in the total sample of students (N = 5,676) was $\chi^2(df = 49) = 1{,}972.734$, $p < .001$; CFI = .95; RMSEA = .08; SRMR = .04.

Measurement Invariance Across Gender

Multiple-group confirmatory factor analysis was estimated to evaluate the measurement invariance of the scale across male (n = 1,950) and female (n = 3,429) college students. The results are reported in Table 1. Models testing the invariance of factor structure, loadings, item intercepts, error variances, factor variances and means fit the data equally well than previous, less parsimonious, models (see Table 1). Hence, we can assume that factor loadings, item intercept, error variances, factor variances, and means are all invariant between males and females. The scale scores for men and women had the same measurement metric and the same origin. Male participants presented lower levels of calling than female participants: The standardized difference in the latent means was –.16, $p < .001$.

Measurement Invariance Across Study Domain

Domains with more than 300 participants were selected resulting in six groups: Economy (n = 475), Engineering (n = 702), Education (n = 410), Psychology (n = 644), Art (n = 331), and Medical Science (n = 595). Results are reported in Table 1.

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TABLE 1
Study 1. Measurement invariance tests by gender (first panel) and study domain (second panel)

Model (Gender)	χ^2	*df*	CFI	RMSEA	95% CI	SRMR	$\Delta\chi^2$	Δdf	ΔCFI	ΔRMSEA	ΔSRMR
Male (*n* = 1,950)	848	49	.93	.091	[.086, .097]	.045					
Female (*n* = 3,429)	109.13	49	.96	.079	[.075, .083]	.035					
Configural	1938	98	.95	.084	[.08, .087]	.039					
Weak	1951.49	109	.95	.079	[.076, .082]	.041	13.58	11	< .001	.005	–.002
Strong	2153.42	120	.945	.079	[.076, .082]	.045	201.93*	11	.005	< .001	–.004
Strict	2383.56	132	.939	.08	[.077, .082]	.057	23.14*	12	.006	–.001	–.012
Equal factor variance	2397.30	133	.939	.08	[.077, .082]	.062	13.73*	1	< .001	< .001	–.005
Equal latent mean	2427.30	134	.938	.08	[.077, .083]	.064	3.01*	1	.001	< .001	–.002
Model (Study domain)	χ^2	*df*	CFI	RMSEA	95% CI	SRMR	$\Delta\chi^2$	Δdf	ΔCFI	ΔRMSEA	ΔSRMR
Economy (*n* = 484)	217.86	49	.95	.08	[.073, .096]	.04					
Engineering (*n* = 702)	353.31	49	.92	.09	[.085,.103]	.05					
Education (*n* = 412)	136.63	49	.97	.07	[.053, .079]	.04					
Psychology (*n* = 643)	352.69	49	.93	.10	[.089, .108]	.05					
Art (*n* = 338)	181.79	49	.96	.09	[.076, .104]	.04					
Medical Science (*n* = 610)	273	49	.94	.09	[.077, .097]	.05					
Configural	1515.27	294	.94	.09	[.084, .093]	.05					
Weak	1612.58	349	.94	.08	[.078, .087]	.06	97.31*	55	.002	.005	–.014
Strong	222.81	404	.91	.09	[.088, .096]	.08	608.23*	55	.027	–.009	–.017
Partial strong	1829.23	379	.93	.09	[.081, .089]	.07	216.65*	30	.009	–.002	–.009
Strict	2189.21	439	.92	.09	[.083, .09]	.11	359.98*	60	.015	–.002	–.037
Partial strict	2062.47	429	.92	.09	[.081, .088]	.09	233.24*	50	.009	0	–.020

Note: *df* = degrees of freedom; CFI = comparative fit index; SRMR = standardized root mean square of residuals; RMSEA = root mean square error of approximation.
* $p < .01$.

Fitting the model for each group separately yielded acceptable fit indexes, as well as the configural and weak models. Item loadings can be assumed to be invariant across study domains. The equality constraints on indicator intercepts (strong invariance model) produced a significant loss of fit, $\Delta\chi^2$ (df = 55) = 608.23, p < .01; ΔCFI = .027; ΔRMSEA = –.009; ΔSRMR = –.017 (see Table 1). Item intercept constraints were released based on the highest modification index, and five item intercepts were found to be noninvariant. The equality constraints on item variances produced a statistically significant loss in fit. Partial strict invariance was obtained by freely estimating two item variances.

Two items out of 12 were found to be noninvariant at the mean and variance levels, and more than half the intercepts were found to be invariant (seven out of 12). The calling scale can be considered to be partially invariant over the study domain.

The presence of noninvariant indicator intercepts suggests that there might be bias in the estimated differences between subgroup means, which could lead to misinterpretation of true mean differences. To explore the differences between subgroups, we compared the item intercepts, estimated using a partially invariant model (imposing equality constraints on invariant items only), and the item intercepts estimated using a fully invariant model (imposing equality constraints on invariant and noninvariant items). Results are reported in Table 2. The differences between the item intercepts of the fully invariant model and those of the partially invariant models will provide an estimate of the impact that incorrectly assuming full invariance would have on the results. If the differences are small, we could conclude that noninvariance had little impact on the results.

TABLE 2
Study 1. Comparisons between means estimated with the fully invariant model
and the partial invariant model

	Fully invariant model	Partial invariant model					
		Economics (n = 484)	Engineering (n = 702)	Education (n = 412)	Psychology (n = 643)	Arts (n = 338)	Medicine (n = 610)
Item	Intercept (*SE*)	Intercept (*SE*)	Intercept (*SE*)	Intercept (*SE*)	Intercept (*SE*)	Intercept (*SE*)	Intercept (*SE*)
4	4.74 (.05)	4.85 (.07)	4.87 (.07)	4.51 (.08)	4.58 (.07)	4.25 (.08)	4.88 (.07)
6	4.56 (.06)	4.57 (.07)	4.81 (.07)	4.96 (.08)	4.42 (.07)	3.98 (.09)	4.75 (.07)
7	5.64 (.04)	5.62 (.06)	5.69 (.059)	5.44 (.07)	5.62 (.06)	5.52 (.07)	5.74 (.06)
8	4.57 (.06)	4.84 (.08)	4.48 (.086)	4.64 (.09)	4.34 (.09)	4.30 (.10)	4.57 (.09)
12	3.74 (.07)	3.57 (.08)	3.34 (.08)	4.05 (.09)	3.83 (.08)	3.91 (.09)	3.99 (.09)

Note. Fully standardized estimates are reported. *SE* = standard error.

The intercepts of Item 4 ranged between 4.25 (Art) and 4.88 (Medical Science), students from the medical science domain scored higher in Item 4, that regards willingness to sacrifice to continue studying, than students from the arts study domain.

The intercept of Item 7 ranged between 5.44 (Education) and 5.74 (Medical Science). Although the difference was small, medical students tended to score higher than students from other domains. The range of the intercept of Item 8 was between 4.29 (Art) and 4.84 (Economics). The differences were small across study domains also in this case. Finally, Item 12 had intercepts ranging from 3.34 (Engineering) to 4.05 (Education). The variances of Item 7 ranged between .54 (Arts) and .68 (Engineering). The variance of Item 8 ranged between .50 (Arts) and .72 (Engineering) when freely estimated. The medical student group scored higher than the other groups in Items 4 and 7; however, the other differences in item intercept and variances were not systematic across groups.

Convergent Validity

Correlations between the ICS and conceptually similar variables are reported in Table 3. The pattern of correlations was similar among college students and employed adults. Scale scores were statistically significantly and positively related with CVQ-Presence and calling orientation toward work. As expected, the correlation was stronger with CVQ-Presence than with CVQ-Search (asymptotic z-test of correlation coefficients converted into a z-score using Fisher's r-to-z transformation: $z = 26.56$, $p < .001$; Lee & Preacher, 2013; Steiger, 1980).

The correlation between ICS and calling orientation was stronger among employed adults than students. This difference was likely due to the common target of the two measures among employed adults: The ICS assessed calling to the study domain for students and to work for employed adults, but calling orientation measured calling to work in both samples.

TABLE 3
Study 1. Intercorrelations between ICS and alternative measures of calling, job, and career orientation

	College students (N = 5,886)		Employed adults (N = 205)	
Scale	r	α	r	α
CVQ-Presence	.53**	.82	.65**	.85
CVQ-Search	.23**	.79	–	–
Calling orientation	.42**	–	.53**	–

Note. CVQ = Calling and Vocation Questionnaire; CVQ-Search was not assessed in the sample of employed adults. * $p < .05$. ** $p < .001$.

We further examined the relation of the ICS to CVQ-Presence to control for redundancy. We estimated a two-factor model with a single first-order factor saturated by items from ICS and one second-order factor defined by three first-order factors (transcendent summons, purposeful work, and prosocial orientation) saturated by items from CVQ-Presence. The model presented a good fit to data: $\chi^2 = 3543.30$, $df = 176$, $p < .001$; CFI = .94; RMSEA = .058, 95% CI [.056, .06]; SRMR = .05. In order to test whether ICS and CVQ-Presence are distinct factors, we tested the hypothesis of the correlation between ICS and CVQ-Presence being equal to 1. The resulting Wald test, $\chi^2 = 3974.52$, $df = 1$, $p < .001$, indicated that the correlation significantly differs from 1. Thus, ICS and CVQ-Presence scores were positively related but not to the point of redundancy.

Discussion

The aim of the first study was to examine the validity of the Italian version of the CS for college students and employed adults. Exploratory and confirmatory factor analyses were conducted to analyze the factor structure of the Italian version of the CS. The relations between calling and alternative measures of the construct were examined to test the convergent validity of the scale score. In line with the original study, CFAs supported a single-factor structure. The student and employed adult versions of the scale showed strong internal consistency.

The scale was invariant across gender and partially invariant across study domains. The results highlighted that five item intercepts and two variances were noninvariant across six study domains. This result denoted that group differences in factor means might have been due to valid differences across groups, but the group differences also may have been due to differences in the item intercepts. The presence of noninvariant variances suggested that two items might not have measured calling with the same accuracy across groups. We recommend future researchers approach the comparison of groups with caution, for instance, by comparing results obtained by excluding and including the noninvariant items. Convergent validity was supported by positive and moderate-to-strong relations between the ICS, CVQ-Presence, CVQ-Search, and calling orientation measures.

STUDY 2

Method

Participants and Measures

The hypotheses were tested using the sample of employed adults from Study 1. Except for measures of job satisfaction and turnover intention which were created ad hoc in Italian, all other measures were translated and back-translated by three independent experts. The internal consistency scores (Cronbach's alpha) for the scales are reported in Table 4.

Calling was assessed with the ICS. A composite score was computed by averaging for each participant their responses to all items of the scale. In addition, we used the following measures.

Affective career commitment. Affective career commitment was assessed with the six-item scale developed by Meyer, Allen, and Smith (1993). Examples of items are "My profession is important to my self-image" and "I am proud to be in this profession." Items were evaluated on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Job satisfaction. Satisfaction with one's current job was assessed with a single item, "In general, I am satisfied with my work" on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Life satisfaction. Satisfaction with life was assessed with five items from the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). Examples of items are "In most ways my life is close to my ideal" and "The conditions of my life are excellent." Participants responded on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*).

Turnover intention. Intention to leave one's current position was assessed with two items ("I feel the desire to leave this job"; "I don't want to continue doing this job any longer. I hope to find another one or to retire soon"), evaluated on a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Statistical Approach

Mediation of career commitment in the relation between calling, job satisfaction, life satisfaction, and turnover intention was tested with two structural equation models. The first model is a saturated model in which the direct effects of calling on job satisfaction, life satisfaction and turnover intention were estimated without controlling for career commitment. Job satisfaction, life satisfaction, and turnover intention were allowed to correlate. In the second model the effect of calling on career commitment and the effects of career commitment on job satisfaction, life satisfaction, and turnover intention were included. These models were estimated with AMOS 20. A significant mediation is supported if the 95% bias-corrected confidence interval does not contain zero. Because the parametric bootstrap is unavailable with missing data, analyses were performed on a subsample of 200 participants obtained with listwise deletion.

Results

Table 4 reports the correlations between calling, career commitment, job satisfaction, life satisfaction, and turnover intention. We examined the relation of the ICS to career commitment to control for redundancy. We estimated a two-factor model that showed an adequate fit to data: $\chi^2 = 336.632$, $df = 126$, $p < .001$; CFI = .92; RMSEA = .09, 95% CI [.08, .10]; SRMR = .06. In order to test whether ICS and career commitment are distinct factors, we tested whether their correlation was equal to 1. The resulting Wald test, $\chi^2 = 6.725$, $df = 1$, $p < .01$, indicated that the correlation was different from 1. Thus, the ICS and career commitment were related but distinct constructs.

TABLE 4
Study 2. Correlations between the ICS, career commitment, job satisfaction, life satisfaction, and turnover intention

	1	2	3	4	5	6	7
1. Calling	*.92*						
2. Career commitment	.72**	*.91*					
3. Job satisfaction	.65**	.69**	–				
4. Life satisfaction	.31**	.39**	.43**	*.90*			
5. Turnover intention	–.43**	–.43**	–.54**	–.17*	*.86*		
6. Age	.03	–.09	.02	–.003	.20**	–	
7. Gender (0 = female)	–.07	–.10	.02	.08	.14	.11	–
8. Years of work	.10	–.03	.05	.05	.18*	.79**	.13

Note. $N = 205$; Cronbach's alpha is reported in italics on the main diagonal. ICS = Italian Calling Scale.
* $p < .05$. ** $p < .01$.

Results from the saturated model support our expectations: The relation between the ICS and the two measures of satisfaction was positive and statistically significant (job satisfaction: β = .65, $p < .001$; life satisfaction: β = .31, $p < .001$). The relation between calling and job satisfaction was larger than the relation between ICS and life satisfaction ($z = 5.46$, $p < .001$). The relation between calling and turnover intention was negative and significant, β = –.44, $p < .001$.

The correlation between job and life satisfaction was positive and significant, $r = .32$, $p < .001$. The correlation between job satisfaction and turnover intention was negative and significant, $r = –.37$, $p < .001$. The correlation between life satisfaction and turnover intention was not significant, $r = –.04$, $p = .60$. To obtain a more parsimonious solution, the correlation between life satisfaction and turnover intention was removed from the model. Model fit was: $\chi^2 = .28$, $df = 1$, $p = .60$; CFI = 1.00; RMSEA < .01.

To test the mediation hypothesis, the effect of calling on career commitment and the effects of career commitment on job satisfaction, life satisfaction, and turnover intention were included in the model. Results are reported in Figure 2. Model fit was good: $\chi^2 = .02$, $df = 1$, $p = .89$; CFI = 1.00; RMSEA < .01. Career commitment was positively related to job satisfaction and life satisfaction, and negatively related to turnover intention. The associations of calling with job satisfaction, B = .38, β = .31, $p = .006$, 95% CI [.12, .62], and turnover intention, B = –.40, β = –.25, $p = .02$, 95% CI [–.74, –.04], controlling for career commitment, were significant. The association of calling with life satisfaction controlling for career commitment was not statistically significant, B = .07, β = .07, $p = .45$, 95% CI [–.11, .29]. To test the significance of the mediated effects of calling on the three outcomes, 95% bias-corrected confidence intervals for the indirect effects were computed (based on 2,000 bootstrap resamples). Calling showed a statistically significant indirect effect on job satisfaction, B = .40, β = .33, $p = .001$, 95% CI [.20, .61], life satisfaction, B = .25, β = .24, $p = .001$, 95% CI = [.12, .43], and turnover intention, B = –.28, β = –.18, $p = .03$, 95% CI = [–.54, –.03], through career commitment. Thus, career commitment partially mediated the relations between calling and job satisfaction and calling and turnover intention, and completely mediated the relation between calling and life satisfaction. These results do not change when time of employment, age, and gender are included as covariates.

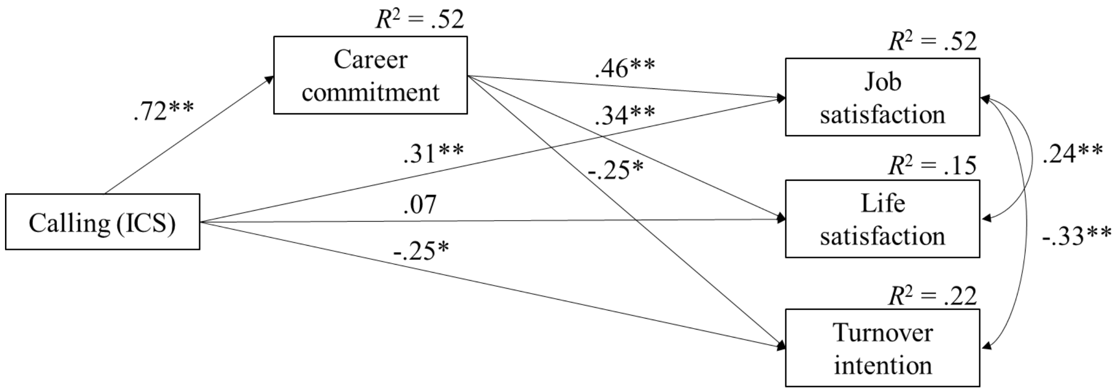

FIGURE 2
Mediation model explaining the relations between calling, job satisfaction, life satisfaction, and turnover intention through career commitment.
Note. Standardized estimates are displayed. $N = 200$. * $p > .01$. ** $p < .001$.

Discussion

The correlations between calling, job satisfaction, life satisfaction, and turnover intention were found to be in line with the hypotheses and higher than those observed in previous studies. Specifically, the relations between calling, job satisfaction, and life satisfaction were higher than the meta-analytic estimates, and the correlation between calling and turnover intention was negative and higher than previous results (*r*s ranged between –.22 and –.35). Thus, individuals who viewed their work as a calling were more likely to be satisfied with their life and their work, and less likely to want to leave their job.

Based on the WCT and previous empirical results, we analyzed whether career commitment mediated the association of calling with job satisfaction, life satisfaction, and turnover intention. Career commitment was found to partially mediate the relations between calling, job satisfaction, and turnover intention, and to completely mediate the relation between calling and life satisfaction. Thus, employed adults perceiving a calling were more satisfied with their work and life, and less likely to leave their job partially (or fully, in the case of life satisfaction), because they were more committed to their occupation. The significant mediation suggested the importance of experiencing high career commitment for working adults who perceive a calling to experience increased job satisfaction, life satisfaction, and less intention to leave.

These results are partially in line with those of previous studies. Specifically, Duffy et al. (2011, 2012) observed that career commitment fully mediates the relation between calling and job satisfaction. Cho and Lee (2017) found career commitment statistically significantly mediates the relationship between calling and life satisfaction. Afsar, Umrani, and Khan (2019) and Duffy et al. (2011) observed that career commitment partially mediates the relation between calling and withdrawal intentions. Duffy et al. (2011) also observed a suppression effect of career commitment; calling was found to be associated with greater withdrawal intentions (a positive direct effect) once the level of career commitment was considered. In the present study, instead, calling was related to a lower level of turnover intention even after controlling for career commitment. These small variations between effects might be due to differences in study design. For instance, previous studies measured calling with the Brief Calling Scale (Dik et al., 2012) and the CVQ (Afsar et al., 2019; Duffy et al., 2011), while in this study we adopted the Italian version of the CS. In addition, the strength of the relations between calling and career commitment ($r < .48$), between calling and job satisfaction ($r < .31$), and between calling and turnover intention ($r = –.22$) were smaller in studies by Afsar et al. (2019), Duffy and colleagues (2012), and Duffy et al. (2011) than in the present study.

General Discussion

The results of the first study suggested that the ICS is a valuable instrument that can assist researchers and career counselors in investigating the experience of having a calling, and the ICS might allow cross-cultural research involving English- and Italian-speaking individuals. Calling is linked to several career-related outcomes, and the assessment of an individual's level of calling can provide useful insights into the career decision process for career counselors and their clients. From a research perspective, studies on career calling could benefit from the use of a short and reliable scale that assesses calling as a single dimension and has been extensively validated.

The second study was the first to explore the mechanism explaining the outcomes of calling among Italian employed adults. The results suggest that career commitment plays an important role in connecting individuals' sense of calling to their job attitudes and subjective experiences at work. Therefore, it is crucial for employed adults to not only perceive a sense of calling but also to build career experiences that support their psychological and affective attachment to their careers. The findings suggest that results obtained in previous studies in the United States, Pakistan, and South Korea are generalizable to Italy, and that career commitment is one mechanism that explains the effects of having a calling on individuals' well-being and attitude toward work.

The first limitation of the two studies is the use of a cross-sectional design. Therefore, in the first study we did not evaluate the longitudinal invariance of the scale, and in the second study, we did not evaluate the temporal relations among the constructs. Establishing longitudinal invariance of the scale would support its utility as a tool for monitoring changes in calling and as a criterion for testing the effectiveness of interventions (Vianello, Dalla Rosa, Anselmi, & Galliani, 2018). Longitudinal data would allow us to analyze the relation between calling and the outcomes over time, and provide support for the causal relation between calling, career commitment, and the outcomes. Even if the idea of job satisfaction, life satisfaction, and career commitment and antecedents of career calling is not theoretically based, it deserves empirical attention. Thus, future researchers are encouraged to investigate longitudinal invariance of the ICS and to test the mediation effect of career commitment over time.

A second limitation of the first study is that we did not evaluate the measurement invariance of the ICS across different types of professions. Employed adults from different professional domains may approach the construct in different ways. Future researchers are encouraged to examine the validity of the ICS in diverse samples of employed adults.

Finally, all analyses were based on data collected with self-report surveys. In future studies, researchers should consider using informant reports or other methods to control for common-method bias, to provide further evidence of the validity of the ICS, and to investigate whether managers, colleagues, or customers can detect when people perceive their work as a calling and are committed to their career.

Despite the limitations described above, this study broadens the existing literature regarding calling and presents implications for research and practice. First, the study provides a valid instrument for assessing calling as a meaningful passion that can be used in cross-cultural research, and in interventions among Italian students and employed adults.

We observed that the effect of calling on positive and negative outcomes is explained, partially or totally, by career commitment, and this raises the question of how organizations and career counselors might help individuals find and follow their calling. The first step might be to help adults with low perception of a calling to discern a calling by identifying, for instance, tasks through which they experience personal meaning or fulfillment. When working with adults who already perceive their work as a calling, the suggestion might be to maximize their commitment to work, with a long-term aim of increasing their job and life satisfaction.

Research on the role of calling in career is limited in Italy (Dalla Rosa, Vianello, Galliani, & Duffy, 2020; Dalla Rosa & Vianello, 2020). Recognizing this need, the present research widened the research on calling by testing the validity of an Italian measure of calling and by investigating the relationships between calling and various work-related variables, generalizing to an Italian sample critical mediation effects that have been previously limited to the United States.

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