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Italian adaptation of the Calling and Vocation Questionnaire - Short Form

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ABSTRACT. Una delle misure di chiamata professionale più utilizzate in letteratura è il *Calling and Vocation Questionnaire (CVQ)*. In questo articolo si presenta la validazione di una versione breve in italiano dello strumento, svolta su un ampio campione di studenti universitari (*N* = 5886). Le analisi confermano la struttura fattoriale originale a sei fattori e supportano l'invarianza della scala nel tempo, fra i generi e fra le diverse discipline di studio. I punteggi presentano buona attendibilità e validità convergente. Il CVQ-I risulta quindi un valido strumento di misura della chiamata professionale, che può essere adottato per la conduzione di ricerche cross-culturali e longitudinali.

SUMMARY. The Calling and Vocation Questionnaire (CVQ) is one of the most widely used multidimensional scales of career calling. We developed a short version of the CVQ in Italian (CVQ-I) and investigated its validity in a large sample of college students (N = 5886). Confirmatory factor analyzes supported a six-factor structure, which was shown to be invariant over time, gender, and study domains using multi-group measurement invariance analyzes. Scale scores were found to possess adequate internal consistency and convergent validity. These results demonstrate validity for the use of the CVQ-I in cross-cultural and longitudinal research and interventions.

Keywords: *Calling, Scale validation, Italian college students*

INTRODUCTION

People may feel called to a particular profession, while others may see work as an instrument to gain power or money. Calling has been defined as an attitude toward work and as a consuming and meaningful passion (Thompson & Bunderson, 2019). According to the most cited definition, calling is a transcendent summons to approach a life role perceived as meaningful and oriented toward helping others (Dik & Duffy, 2009). Dik and Duffy (2009) suggested that people can perceive that they currently have a calling, whereas others may be actively looking for a calling but do not currently have one. Therefore, their conceptualization of calling distinguished between two states: the 'presence of' and the 'search for' a calling. Although agreement on its definition is still missing, research has been growing and studies have provided clear evidence that perceiving work as a calling contributes to improving the well-being of both individuals and organizations (Duffy, Dik, Douglass, England & Velez, 2018). Calling has been mainly studied with samples from the United States, and more intercultural research on calling has recently been advocated (Thompson & Bunderson, 2019).

This paper proposes a step forward in this direction by presenting the Italian validation of a short form of the most widely used multidimensional measure of calling: the *Calling and Vocation Questionnaire* (*CVQ*; Dik, Eldridge, Steger & Duffy, 2012). The CVQ is based on the definition of calling proposed by Dik and Duffy (2009). Although other measures of calling have been proposed, the CVQ possess the largest empirical evidence, distinguishes between having and searching for a calling, and its conceptual model is the basis of an influential theory on calling (WCT; Duffy et al., 2018). This paper also presents the first measurement invariance analysis of the CVQ scores across gender, domain, and time. Establishing measurement invariance allows researchers to interpret comparisons between groups as true differences in calling and not as a measurement artifact. Evidence of longitudinal invariance would support the utility of CVQ in monitoring changes in calling over time and across different stages of individuals' life and career.

The CVQ consists of 24 items divided into six subscales: Presence of - and the Search for - Transcendent summons ($\alpha_{presence}$ = .85, α_{search} = .86; test-rest: $r_{presence}$ = .67, r_{search} = .62), Presence of - and the Search for - Purposeful work ($\alpha_{presence}$ = .88, α_{search} = .88; test-rest: $r_{presence}$ = .63, r_{search} = .60), Presence of - and the Search for - Prosocial orientation ($\alpha_{presence}$ = .88, α_{search} = .92; test-rest: $r_{presence}$ = .66, r_{search} = .67). Dik et al. (2012) presented evidence of good overall reliability ($\alpha_{presence}$ = .89, α_{search} = .90; test-rest: $r_{presence}$ = .75, r_{search} = .67), convergent and discriminant validity. The presence and search scores correlated more strongly with each other than with less conceptually similar criterion variables (career decision self-efficacy, life satisfaction, intrinsic and extrinsic work motivation, work hope, prosocial work motivation, and meaning in life) suggesting convergent and discriminant validity (Dik et al., 2012).

METHODS

Participants and procedure

Data were collected by means of a non-experimental three-wave online survey with a 12-month time lag. The dataset is composed of 5886 Italian college students enrolled in 24 different programs; 1700 participated in the second data collection (T_2) and 881 in the third data collection (T_3). There were 36.2% males (1954 out of 5391) and 63.8% females, with a mean age of 23.37 (*SD* = 5.39). Participants' age at T_1 ranged between 18 and 69. The full list of items and their English translation is provided here: https://osf.io/5hdv3/?view_only=7316855961d240a5820882014e946c54

Measures

– *Calling and Vocation Questionnaire*. To develop a short version of the CVQ, we retained the items that cover the key facets of the construct and showed the highest loadings on their respective factors (Dik et al., 2012, p. 250). The scale examined in this study consists of 18 items (3 items per facet) rated on a scale of 1-4, with 1 being 'not at all true for me' and 4 being 'totally true for me'. The wording of the items was adapted for a sample of college students. We asked them to evaluate their calling towards their major (presence of a calling) and their future professional career (search for a calling). Examples of items include: "I am pursuing this line of study because I believe I have been called to do so" and "I'm searching for my career calling", respectively measuring presence of and search for a transcendent summons.

– *Calling as passion*. The scale developed by Dobrow and Tosti-Kharas (2011) was administered as an alternative measure of calling. This scale measures calling as "a consuming, meaningful passion people experience toward a domain" (Dobrow & Tosti-Kharas, 2011, p. 1005). Items were answered on a 7-point likert scale with 1 being 'strongly disagree' and 7 being 'strongly agree'. The original scale demonstrated high internal consistency (α>.88 across samples) and moderate stability in the short and long term (at 2 months, 3.5 and 7 years). The measure has good convergent and discriminant validity. Exploratory and confirmatory factor analyzes supported a one-dimensional structure that accounts for approximately 50% of the overall variance. The reliability of scale scores for the current study was α = .90. A single factor CFA model provided a good fit to the present data: χ^2 (*df* = 49) = 1972.73, *p*<.001, CFI = .95, RMSEA = .08, SRMR = .04.
– *Job, career, and calling work orientations*. To assess individuals' job, career, and calling work orientations we used three single items developed by Wrzesniewski, McCauley, Rozin and Schwartz (1997). Respondents were presented with three paragraphs describing three different workers: 1) a worker with a job orientation who was interested mainly in monetary compensation and was motivated by extrinsic incentives; 2) a worker with a career orientation who was interested in gaining power and achievement; 3) a worker with a calling orientation who works for the sense of fulfillment that job brings to him/her. Participants were asked to read the paragraphs and then rate the degree to which they identified with each of the three workers (exemplifying job, career, and calling work orientations). The three items were rated on a scale from 1, being 'not at all similar', to 4, being 'totally similar'. Validity of the three single items was established by Wrzesniewski et al. (1997) by correlating the scores at these three single items with the scores obtained at 18 true/false items that were developed to measure the three orientations. For instance, the single-item calling work orientation score correlated on average .41 with six true-false calling items and –.38 with seven true-false job items (Wrzesniewski et al., 1997). In addition, respondents who see their work as a calling ranked their job as relatively more important in comparison to hobbies and friends, and were more satisfied in job and life than respondents who see their work as a job or a career.
– *Single item measure of calling*. We assessed the presence of a calling with a yes-no question ("Do you have a calling?") and the extent to which participants perceive a calling in their life with the single item "How much do you feel a vocation for a specific line of study/work?" answered on a 4-point likert scale with 1 being 'not at all' and 4 being 'extremely'.
– The *Integrated Calling Scale* (*ICS*) developed by Dobrow and Tosti-Kharas (2011) was administered as an alternative measure of calling.

RESULTS

Confirmatory factor analysis

The factor structure of the scale was assessed using three nested CFA models estimated in MPlus 7.0. Fit statistics were evaluated as acceptable on the basis of the following criteria: CFI≥.90; RMSEA≤.08; SRMR≤.10 (Brown, 2015). In the first model, all items are loaded onto a single factor of calling. The second is a two-factor model in which the nine presences of calling items loaded on a global "presence of calling" factor, and the remaining nine items, measuring "search for a calling", loaded on a second latent factor. Finally, a six-factor model was estimated representing the presence of and search for the three dimensions of calling. Fit indexes are reported in Table 1.

Model comparisons suggest that the six-factor solution fits the data better than all other models. Item loadings were all above .53. See Figure 1 for a graphic representation of the final CFA model. The correlations between the presence and search components of calling are similar to those observed in Dik et al. (2012) and are reported in Table 2.

Measurement invariance

Configural (equivalence of model form), metric (equivalence of factor loadings), scalar (equivalence of item intercepts) and strict (equivalence of item residuals) measurement invariance were evaluated across time, gender, and study domain. A change between the more constraint and the less constraint models ≤–.010 in CFI, supplemented by a change ≥.015 in RMSEA or a change ≥.010 in SRMR were used as indicators of noninvariance (Chen, 2007). The results of the nested model comparisons are reported in Table 3.

Table 1 – Fit indexes of alternative first-order factor models

Number of factors	χ^2	*df*	CFI	RMSEA	95% CI	SRMR
1	21958.87	135	.50	.17	[.168; .17]	.13
2	20889.03	134	.53	.17	[.16; .17]	.13
6	3668.74	120	.92	.07	[.07; .08]	.07

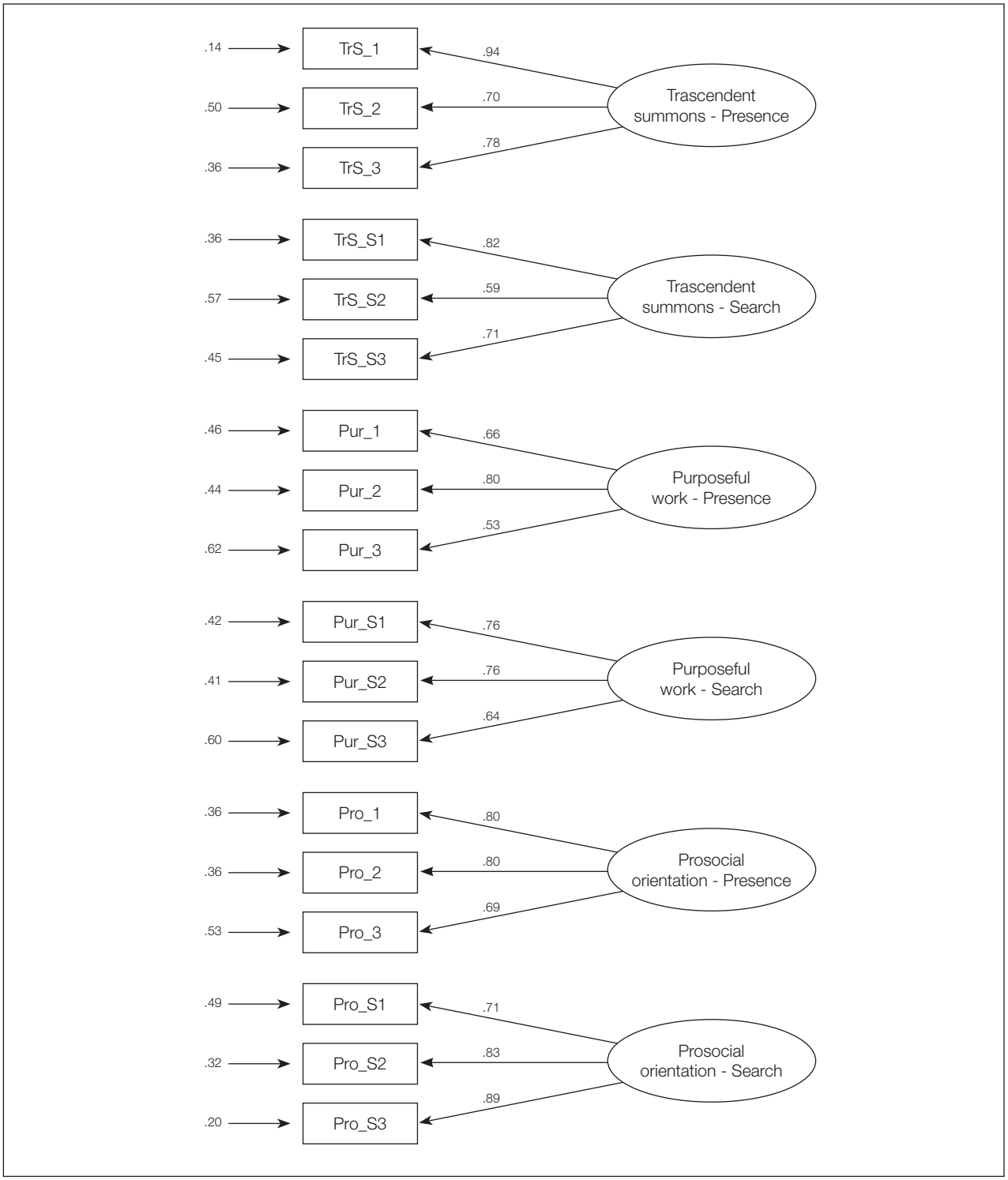
Legenda. df = degree of freedom; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.
Note. N = 5626.

The fit of the configural invariance model was adequate in T_1 (*N* = 5626), T_2 (*N* = 1699) and T_3 (*N* = 878), which means that the basic organization of the structure (the same loading pattern) is supported on all measurement occasions, $\chi^2_{(974)}$ = 5424.55, CFI = .94, RMSEA = .027, 95% CI [.027, .028], SRMR = .049. The model with constrained loadings (metric invariance) fit the data equally well than the configural model; hence each item contributes to its corresponding latent construct to a similar degree across waves. Models testing the invariance of item intercept (scalar invariance) fit the data equally well as the previous, less parsimonious, metric invariance model. Hence, we can assume that mean differences in the latent construct capture all mean differences in the shared variance of the items. Equity constraints on indicators error variances (strict invariance) produced a slight loss in fit in term of CFI, based on the highest modification index, the error variance of item TrS_Search2 ("I yearn for a sense of calling in my professional career") was found to be non-invariant (larger at Time 1 than at Time 2 and 3). Partial strict invariance was obtained by freely estimating the variance of the item. Hence, the variance of the items that are not shared with the factor and the error variance (measurement error) are similar over time for all items except one.

Using the same procedure, the model was evaluated for invariance between genders. Models estimated in the female (*N* = 3431) and male (*N* = 1947) subsamples at T_1 showed an acceptable fit to the data, which supported configural invariance, $\chi^2_{(240)}$ = 3597.06, CFI = .92, RMSEA = .072, 95% CI [.07, .07], SRMR = .07. Models testing the invariance of loadings, item intercepts, and error variances fit the data equally well as previous, less parsimonious models. Hence, we can assume that they are all invariant between men and women.

Finally, we tested the measurement invariance of the model across study domains composed of more than 300 participants, specifically: Economy (*N* = 475), Engineering (*N* = 702), Education (*N* = 410), Psychology (*N* = 644), Art (*N* = 331), and Medical Science (*N* = 595). The fit of the configural invariance model was acceptable: $\chi^2_{(720)}$ = 2817.43, CFI = .91, RMSEA = .07, 95% CI [.07, .08], SRMR = .07. Models testing the invariance of loadings fit the data equally well as the previous, less parsimonious model. The equality constraints on the indicator intercepts produced a slight loss of fit in terms of CFI. Based on the highest modification index, TrS_Search2 item ("I yearn for a sense of calling in my professional career") intercept was found to be non-invariant and the equality constraint was released. The intercept is slightly higher in the educational (2.71) and art (2.62) domains than in the engineering domain (2.35). Comparison of subgroup Search -Transcendent Summon means might be biased and should be interpreted considering the non-invariance of this item. The model with equality constraints on error variances (strict) fits the data equally well as the partial-scalar model. Loadings, intercept (except for one) and error variances are all invariant across study domains.

Figure 1 – The CFA measurement model



Note. Parameter estimates are standardized. The correlations between factors, reported in Table 2, are omitted for clarity. $\chi^2_{(120)} = 3668.74$, $p<.001$, CFI = .92, RMSEA = .07, 95% CI [.07, .08], SRMR = .07.

Table 2 – Estimates of relations among the six latent factors model from confirmatory factor analyses and internal reliabilities of scale scores

	1	2	3	4	5	6
1 Transcendent summons - Presence	.85, .86					
2 Transcendent summons - Search	.03	.75, .75				
3 Purposeful work - Presence	.38	.07	.71, .71			
4 Purposeful work - Search	.38	.43	.66	.76, .77		
5 Prosocial orientation - Presence	.39	.05	.36	.36	.81, .81	
6 Prosocial orientation - Search	.32	.14	.25	.39	.83	.85, .85

Note. $N = 5626$. All coefficients are statistically different from zero ($p<.001$). Cronbach's alpha and McDonald's omega (in this order) are reported on the main diagonal.

Internal consistency and convergent validity

Table 2 reports the internal consistencies of the six CVQ-I subscales and Table 4 their intercorrelations and correlations with two alternative measures of calling, career, and job orientations. Internal consistencies, evaluated with Cronbach's alpha and McDonald's omega, of the scale scores were higher than .71. The three presence of calling factors had stronger relations with the single item measure of having a calling and the ICS than the three search for a calling factors. The strongest relations were between alternative measures of calling with the presence of transcendent summons and purposeful work.

Calling orientation toward work was positively related to the six CVQ factors (except for the non-significant correlation with search for transcendent summons), whereas job and career orientation were negatively or weakly related to the CVQ scale scores.

To provide further evidence of validity, we compared the means of all dimensions of calling between students who reported having (vs. not) a calling in life. Students with a calling scored higher than students who declared they do not have a calling, in all dimensions of presence and search for a calling (t-tests were significant at $p<.001$, effect size greater than $d = .32$), except for search for transcendent summons, which was higher in students who declared not having a calling ($t = -5.80$, $d = -.22$).

CONCLUSIONS

This is the first study to examine the factor structure of an Italian version of the CVQ. The results of the CFA conducted on a sample of college students identified a six-factor model that was found to have good internal consistency. The high correlation between the search and presence of prosocial orientation (.83) and purposeful work (.66) indicates a potential overlap between the presence of and search for a calling components that might complicate the interpretation of the corresponding test scores. A similar overlap between those calling components was observed in the original validation study (Dik et al., 2012), in which the correlations between the presence of and search for purposeful work

Table 3 – Model fit comparisons for measurement invariance tests by time, gender and study domain

Model	$\Delta\chi^2$	Δdf	ΔCFI	ΔRMSEA	ΔSRMR
Time [a]					
Metric	270.99	20	−.004	−.001	.002
Scalar	303.42	20	−.004	.00	.00
Strict	1290.94	32	−.018	.00	.007
Partial Strict [b]	749.49	30	−.01	<.001	.005
Gender					
Metric	35.78	12	−.001	−.001	.001
Scalar	96.61	12	−.002	−.00	.00
Strict	136.97	18	−.002	−.001	.002
Study domain					
Metric	158.52	60	−.004	−.001	.006
Scalar	321.34	60	−.011	.002	.003
Partial scalar [c]	254.05	55	−.008	.001	.002
Strict	198.14	85	−.004	−.002	.005

Legenda. df = degree of freedom; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

Note. Models were compared with the previous and less parsimonious invariance model (Metric vs Configural, Scalar vs Metric, and Strict vs Scalar). All chi-square difference tests are significant at $p<.001$. The means of the latent factors were constrained to zero to achieve identification in the configural and metric invariance models. In the scalar invariance models, latent means were set at 0 at T_1, in the female subsample and in the psychology subsample.

[a] The two items were modified at T_2 and T_3 (TrS_2, Pro_3) and were set as missing in the longitudinal invariance analysis. Presence of transcendent summons and prosocial orientation at T_2 and T_3 were saturated by two items instead of three.

[b] Partial strict invariance was reached, releasing the equality constraint on the error variance of the TrS_Search2 observed variable.

[c] Partial scalar invariance was reached releasing the equality constraint on the intercept of the TrS_Search2 observed variable.

Table 4 – Correlations among CVQ-I scores and measures of calling, job, and career orientations

	Single item	ICS	Calling or.	Job or.	Career or.
Transcendent summons - Presence	.43**	.40**	.23**	–.13**	–.11**
Purposeful work - Presence	.34**	.51**	.33**	–.24**	–.03*
Prosocial orientation - Presence	.24**	.30**	.27**	–.18**	–.12**
Transcendent summons - Search	.01	–.02	–.02	.09**	.08**
Purposeful work - Search	.25**	.31**	.24**	–.14**	–.03*
Prosocial orientation - Search	.19**	.25**	.24**	–.13**	–.08**

Legenda. ICS = *Integrated Calling Scale* developed by Dobrow & Tosti-Kharas (2011).
Note. N = 5886.
** $p<.001$; * $p<.05$

ranged between .71 and .79, and the correlations between the presence of and search for prosocial orientation ranged between.78 and .84. College students are in the middle of their career self-exploration and discernment, and the development of their calling is an ongoing process. Students can have a calling and perceive a prosocial and meaningful purpose in their study domain, but they might also keep seeking for other meaning and value in their academic and professional career. The high correlations between the presence and search for these two components of calling might be a feature of our sample, perhaps generalizable to other people who are at the very beginning of the process of building a career.

In addition to examining the factor structure of the scale and the reliability of the scores, we examined its measurement invariance. The scale was found to be invariant across gender and partially invariant across time and study domain. The measurement and structural invariance of the model across gender and study domain is crucial for the study of calling because it indicates that the measurement model of the latent calling construct, the composite score of the six factors, and the correlations among them can be compared in both sexes and across study domains. These results strengthen the validity of CVQ in settings where the heterogeneity of the population is substantial. To precisely measure the true change and inter-individual differences in career calling, it is critical to examine if the CVQ consistently measures the same construct over time. To our knowledge, this is the first study to examine the longitudinal invariance of CVQ. In our study, we found support for the measurement and structural invariance of the CVQ over time. Therefore, changes in CVQ scores over time reflect true changes in the underlying latent constructs rather than changes in the measurement properties of the scale.

Finally, the scale was found to possess adequate convergent validity supported by positive and moderate to strong relations between CVQ scores with alternative measures of calling. Correlations between CVQ presence subscales and alternative measures of calling were stronger than with CVQ search subscales, which is reasonable given that the alternative measure of calling we adopted is conceptually more similar to the presence of calling rather

than the experience of searching for a calling. In addition, we observed mean differences at the level of the five dimensions of calling between people with internal summons compared to people who experience an external summons.

A limitation of the current study regards the use of a sample of college students. We cannot assume that adult workers approach the construct in the same way as college students do. Future researchers are encouraged to examine the validity of the CVQ-I in samples of Italian adult workers.

The current study suggests that CVQ is a reliable instrument that can be applied in the Italian student population. The multidimensional structure of the scale allows researchers and practitioners to analyze at a fine-grained level the relations between components of calling and other variables. For instance, practitioners can investigate whether individuals experience their calling more as a transcendent summons or as a purposeful work. Composite scores can be compared over time and across gender without specific adjustments.

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The authors would like to apply for the Open Data Badges. The dataset analyzed during the current study are available in the Open Science Framework repository at the following link: https://osf.io/v56du/?view_only=7316855961d240a5820882014e946c54.

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