

The causal relation between career calling and task performance: A three-wave panel study

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Abstract

Work as a calling theory predicts that perceiving and living out a calling lead to higher task performance, and empirical evidence supports the assumption that perceiving a calling is related to task performance. Yet, the longitudinal precedence between career calling and task performance has not been investigated. This study examines the temporal relationship between career calling and self-rated task performance using a three-wave longitudinal design with 285 US employees. Findings from a cross-lagged panel model analysis indicate that self-rated task performance predicts career calling more strongly than the reverse. These results suggest that self-rated task performance outcomes may drive the development of a career calling, challenging traditional assumptions. The study's implications highlight the importance of performance feedback in cultivating employees' sense of purpose and calling. Future research should explore the boundary conditions of this relationship and consider various performance metrics.

KEYWORDS

career calling, cross-lagged panel model, employees, longitudinal, task performance

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INTRODUCTION

The idea that people should choose jobs that let them exploit and develop their talents is pervasive in Western societies, to the point that some people who are able to choose well-fitting jobs often refer to them as a calling. Job-related talent and performance are typically intertwined. Yet, most theoretical accounts of career calling postulate that calling predicts performance, rather than the opposite. In the current study, we seek to provide clarity on whether perceived job performance comes before or after the perception of being called toward a job. Calling is a perception of a *passion* and a *transcendent force* toward involvement in a life role that *pervades* thoughts, provides a sense of *purpose* and *identity*, motivates *sacrifices*, and is believed to entail a *prosocial contribution* (Gerdel et al., 2022; Vianello et al., 2018). Although living a calling at work is hypothesized to increase job performance, only a few cross-sectional studies supported this prediction (Kim et al., 2018; Lee et al., 2018; Lobene & Meade, 2013; Park et al., 2016). Meta-analytic estimates on these handful of studies have shown the relation between calling and performance is small-to-moderate (Vianello et al., 2022).

Causal evidence linking these two constructs is completely lacking. The only longitudinal study that might be indirectly informative on the direction of causality between calling and performance investigated the longitudinal relation between calling, self-reported ability, and audition ratings on a sample of musicians (Dobrow & Heller, 2015). The authors found that calling predicted perceived ability after 3.5 years, while the reverse relationship was non-significant, but similar in size. In this study, measurement error was not considered, and the sample of musicians limits the generalization of results to other jobs. As long as the direction of causation between performance and calling will be unknown, theories on its development might be misguided by either the traditional notion (a priori discovery: once a calling is discerned, it guides career choices throughout life) or by the modern notion (a posteriori development: people perceive a calling as the ultimate subjective experience of career success).

In this longitudinal study, we provide the first test of the direction of causality between calling and task performance. Results could either provide the first causal evidence of the widely shared assumption that calling predicts success on the job (Duffy et al., 2018), or they could provide initial evidence that a calling might be best conceptualized as the ultimate subjective experience of career success (Hall & Chandler, 2005). Practically, the results of this study will indicate whether callings should be considered in the hiring and selection processes or utilized in evidence-based human resource management practices such as performance management and retention strategies.

THEORETICAL FRAMING AND STUDY AIMS

Work as calling theory (WCT; Duffy et al., 2018) postulates that individuals who possess and live out a strong sense of calling in their workplace will exhibit better job performance. The theory suggests that these individuals are inherently more motivated to perform well at work and contribute positively to their organization because they find greater meaning in their tasks, and, extending this reasoning, because their identity would benefit from excelling in their roles. Individuals who perceive their current job as a calling identify more strongly with their occupation (personal identity) and with their community (social identity; Dobrow et al., 2023; Elangovan et al., 2010). Achieving both personal and social positive identities is a fundamental need (Haslam et al., 2000) that could drive people with a strong calling to excel in their tasks to cultivate their self-worth (Dobrow et al., 2023).

Other scholars have argued that the “calling predicts performance” hypothesis might be explained by increased ability (Dobrow & Heller, 2015). To satisfy their need for competence in a domain that holds great meaning and contribute to their positive personal and social identity, individuals who perceive their work as a calling may actively seek opportunities to enhance their job-related skills (Dobrow & Heller, 2015; Esteves & Lopes, 2017; Praskova et al., 2014), which lead them to become more competent and more effective in their roles (Dobrow & Heller, 2015). It is likely that both these approaches are true to a different extent in people where learning goal orientations are higher compared to proving-performance goal orientations (Elliot & Dweck, 2005). According to traditional theoretical accounts, it is plausible to hypothesize that employees with higher calling will exhibit higher task performance (H1).

However, the hypothesis that task performance fosters a sense of calling is also plausible. The psychological success model (Hall & Chandler, 2005) proposes a causal cycle in which effort leads to task performance (goal attainment), which in turn triggers feelings of success, work identity growth, increased self-esteem, higher career commitment, and motivation. As a result, effective performance enhances positive job attitudes and career commitment, nurturing the endorsement of greater goals that lead to improved performance. Following repeated successes in the job, individuals develop enduring positive feelings about their accomplishments, cultivating an overall positive attitude toward their job as a source of future success opportunities. This is also in line with a narrative model of authoring an identity as a called professional (Bloom et al., 2021). Individuals who actively pursue professional legitimacy are involved in experiences that enhance their expertise and therefore increase the likelihood of cultivating a sense of calling (Bloom et al., 2021). By attaining mastery and showcasing their innate talents, individuals gain a realization of their proficiency in their work, which, in turn, contributes to the formation of their calling identity. According to this view, task performance can trigger positive experiences of success that can lead people to perceive their job as a calling. This view is also in line with the idea that a calling might be the consequence of positive experiences in a domain, such as perception of support, engagement, and clarity about one's identity (Dalla Rosa et al., 2019; Duffy et al., 2014). Hence, a competing hypothesis can be postulated according to which the higher employees' task performance, the higher they will feel called toward their job (H2).

METHOD

Design

We adopted a longitudinal design (Little, 2013) in which measures were taken at three different time points: May 2022 (T1), September 2022 (T2), and January 2023 (T3). The time interval between all three data collections was set to 4 months to reduce attrition, since previous studies adopting longer time lags had over 50% attrition rates (e.g., Dalla Rosa et al., 2024; Praskova et al., 2014; Vianello et al., 2020).

Participants and procedure

This study adhered to ethical guidelines established by the Institutional Review Board (IRB) at the University of Florida under protocol number IRB202200465. Recruitment occurred through the ResearchMatch participant pool, a national database for collecting data from adult

participants (Harris et al., 2012). The survey, hosted on Qualtrics, was introduced on ResearchMatch, and participants who agreed were emailed a survey link. Informed consent was obtained electronically on the first survey page, with an average survey completion time of 10 min.

Initially, 358 ResearchMatch volunteers participated in the first wave (T1). After excluding 98 participants for attention and quality check failures (Aust et al., 2013; Kung et al., 2018), the final T1 sample size was 260. In the second wave (T2), 202 participants completed the survey and 42 were excluded for attention and quality check failures, resulting in a final T2 sample size of 160. For the last wave (T3), 110 participants completed the survey and seven participants were excluded for attention and quality check failures, yielding a final sample size of 103 at T3. Analyses were based on a dataset of 285 participants who participated in at least one wave and passed attention and quality checks leading to a partial non-response rate of 39% across waves. All analysis in this manuscript will provide the exact number of valid cases.

Participants were predominantly highly educated (42.7% with a Bachelor's degree, 32% with a Master's degree), and mostly female (71.8%; male = 26.2%; other = 1.9%). We observed no significant gender differences on the calling and performance measures. At T1, participants averaged 44.66 years old, worked for an average of 6.74 years in their organization, and 3.40 years with their supervisor. The sample was heterogeneous, with participants at T1 primarily representing administration (14.4%), research and development (10.6%), management (8.7%), customer service (7.2%), sales and service (5.8%), and IT (5.8%). Participants worked slightly longer hours at T2 (39.53, $SD = 10.59$) than T1 (37.62, $SD = 11.58$) and T3 (36.84, $SD = 11.47$).

Measures

The survey was administered in English. All responses were collected using an agreement scale ($1 = strongly disagree$, $5 = strongly agree$). The mean of all items per scale was used as a compound score to measure its respective scale. Participants answered additional questions on their leader's career calling, leader's performance, and their relationship with the leader that are not of interest in the present study. A full list of variables collected is available here: <https://osf.io/568jx/>.

Employee's career calling

Employee's career calling was measured with the short version of the Unified Multidimensional Calling Scale-7 (UMCS-7; Gerdel et al., 2022; example items: "I am passionate about my work," "I believe that I have been called to pursue my current line of work," "My work helps me live out my life's purpose"). Each item represents a facet of calling: passion, prosociality, purpose, pervasiveness, sacrifice, transcendent summons, and identity. In this study, the reliability of the compound score was good ($\alpha T1 = .85$; $\alpha T2 = .81$; $\alpha T3 = .85$). We performed a confirmatory factor analysis (CFA) showing that a one factor model had a good fit across observations according to the following criteria (Weston & Gore, 2006): comparative fit index (CFI) $\geq .95$, root-mean-square error of approximation (RMSEA) $\leq .06$, and standardized root-mean-square residual (SRMR) $\leq .08$. The fit at T1 was $\chi^2(21) = 38.96$, CFI = .96, RMSEA = .09, 95% CI [.06, .13], SRMR = .04; at T2 $\chi^2(21) = 16.47$, CFI = .99, RMSEA = .04, 95% CI [.00, .11], SRMR = .04; and at T3 $\chi^2(21) = 21.48$, CFI = .96, RMSEA = .08, 95% CI [.00, .15], SRMR = .05.

Self-rated task performance

Task performance was self-rated by participants using four items from the in-role behavior scale by Williams and Anderson (1991). The four items were chosen because they had the highest factor loadings in their validation study (Williams & Anderson, 1991). Sample items are the following: “I adequately completed assigned duties” and “I performed the tasks that were expected of me”. Internal consistency of composite scores was high across observations ($\alpha_{T1} = .85$, $\alpha_{T2} = .88$, $\alpha_{T3} = .90$), which is in line with previous research that used the longer version of the scale ($\alpha = .91$, Williams & Anderson, 1991; $\alpha = .77$, Vianello et al., 2022). A one-factor CFA model had a good fit to the data (T1: $\chi^2(12) = 5.48$, CFI = .99, RMSEA = .08, 95% CI [.02, .15], SRMR = .02; T2: $\chi^2(12) = .45$, CFI = 1, RMSEA = 0, 95% CI [.00, 0], SRMR = .01; T3: $\chi^2(12) = 1.43$, CFI = 1, RMSEA = 0, 95% CI [.00, .23], SRMR = .01).

RESULTS

Descriptive statistics and correlations

Table 1 reports means, standard deviations, Cronbach's alpha, and correlations between variables at T1, T2, and T3. Group means of both variables were relatively stable across time points. The correlations between calling and self-rated task performance were statistically significant only between calling assessed at T2 and self-rated task performance assessed at T1 and T2.

Longitudinal relation between employee's calling and self-rated task performance

To analyze changes in individual differences and to examine the temporal precedence between self-rated task performance and calling controlling for temporal stability (i.e., autoregressive paths; Orth et al., 2021; Wu et al., 2013), we used cross-lagged panel models (CLPMs), using composite scores within the path analysis approach. The autoregressive paths represent the

TABLE 1 Means, standard deviations, correlations, and Cronbach's alpha between study variables at three different time points.

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Calling T1	3.73	.88	.85	135	87	260	135	87
2. Calling T2	3.7	.81	.66**	.81	103	135	160	103
3. Calling T3	3.68	.87	.74**	.71**	.85	87	103	103
4. Task Performance T1	4.6	.49	-.001	.19*	.12	.85	135	87
5. Task Performance T2	4.67	.50	.1	.17*	.14	.66**	.88	103
6. Task Performance T3	4.68	.51	.03	.01	.13	.49**	.43**	.90

Note: Cronbach alpha values are displayed in italics in the main diagonal. Sample size is presented above the diagonal.

T1 = time 1; T2 = time 2; T3 = time 3.

** $p < .01$. * $p < .05$.

stability of rank order of individuals from one occasion to the next (temporal stability; Mulder & Hamaker, 2021). The cross-lagged effects indicate that individuals with higher self-rated task performance (respectively, calling) would be more likely to develop a stronger calling (respectively, self-rated task performance) than those with lower self-rated task performance (respectively, calling).

Four nested and competing CLPMs were estimated and then compared. Specifically, we compared models that hypothesized (1) no relation between career calling and self-rated task performance (Model 1); (2) calling predicts self-rated task performance (H1, Model 2); (3) self-rated task performance predicts calling (H2, Model 3); (4) reciprocal causation between variables (Model 4). All models were estimated using the lavaan package in R (Rosseel, 2012). To account for missing values, full information maximum likelihood was used and maximum likelihood estimation with robust standard errors was used to estimate the path models. After inspecting estimates, we added an autoregression between calling at T1 and calling at T3 to achieve a better fit. We tested for longitudinal measurement invariance and reached scalar invariance for both scales (Leitgöb et al., 2023). A detailed description of the analysis can be found here: <https://osf.io/ypr2z/>. Additionally, a one-factor confirmatory analysis revealed that the items explained 26% of the variance in the latent factor, which is below the 50% threshold set by Podsakoff and Organ (1986) and suggests no risk of common method bias. Table 2 summarizes the fit indices for the CLPMs and their comparison.

We compared Model 2, Model 3, and Model 4 to the most parsimonious model (Model 1) to test whether a more complex model that postulates a longitudinal relationship between calling and self-rated task performance better describes the data than a model with no cross-lagged effects over time. The comparison was conducted by means of chi-square difference tests and, if statistically significant, supplemented by an analysis of the differences in goodness-of-fit indexes (Kline, 2011). To determine the best fitting models, differences in absolute terms greater than .01 in CFI (Chen, 2007; Cheung & Rensvold, 1999), greater than .015 in RMSEA (Chen, 2007), and greater than .01 in SRMR (Chen, 2007) were used.

As can be seen in Table 2, the only significant chi-square difference test regards the comparison between Model 3 and Model 1, providing support for H2. In addition, the changes in CFI, RMSEA, and SRMR suggest that Model 3, which estimates a cross-lagged effect from self-rated task performance at T1 and T2 to calling at T2 and T3, presents the best fit to the data. Therefore, self-rated task performance at T1 and T2 was better positioned as a predictor of calling at T2 and T3, and individuals with higher self-rated task performance were more likely to develop a stronger calling than those with lower self-rated task performance. Figure 1 shows the autoregressive paths and cross-lagged effects of the best-fitting model. The 95% confidence intervals around estimates of the regression path between calling and self-rated performance overlap across time lags suggesting that differences across lags can be interpreted as random fluctuations over an average lagged effect of .10.

To further investigate the intra-individual dynamics of the causal relation between self-rated task performance and calling, a random intercept cross-lagged model (RI-CLPM) could provide valuable insights. A power analysis indicated that a minimum of 600 participants would have been required to detect a cross-lagged effect of .2 with 80% power (Mulder, 2023). Hence, we decided to report the exploratory results of a RI-CLPM in a web supplement (<https://osf.io/ypr2z/>).

TABLE 2 Results of cross-lagged panel model analysis for employee's calling and self-rated task performance.

Variables	χ^2	df	χ^2/df	CFI	RMSEA	95% CI		SRMR	$\Delta\chi^2$	Δdf	ΔCFI	$\Delta RMSEA$	$\Delta SRMR$	Model comparison
						LL	UL							
Model 1—Autoregressive	15.11	7	2.16	.97	.06	.02	.11	.07						
Model 2—Calling as a predictor	13.84	5	2.77	.97	.08	.03	.13	.07	1.27	2	0	-.02	0	Model 1 vs Model 2
Model 3—Calling as an outcome	9.17	5	1.83	.98	.06	0	.11	.05	5.95*	2	-.01	0	.02	Model 1 vs Model 3
Model 4—Reciprocal	7.98	3	2.66	.98	.08	.09	.15	.05	7.13	4	-.01	-.02	.02	Model 1 vs Model 4

Note: $N = 260$ (T1); 160 (T2); 103 (T3). All differences were computed subtracting the less parsimonious model from the most parsimonious model (i.e., Model 1 – Model 2). Negative differences in CFI indicate that the less parsimonious model has a better fit than the more parsimonious model (Models 2, 3, and 4 have a greater and better CFI than Model 1). A negative difference in RMSEA and SRMR suggests a better fit for the more parsimonious model (Model 1 has a smaller and better RMSEA and SRMR than Models 2, 3, and 4).

Abbreviations: CFI, comparative fit index; CI, confidence interval; LL, lower limit; RMSEA, root-mean-square error of approximation; SRMR, standardized root-mean-square residual; UL, upper limit.

* $p < .05$.

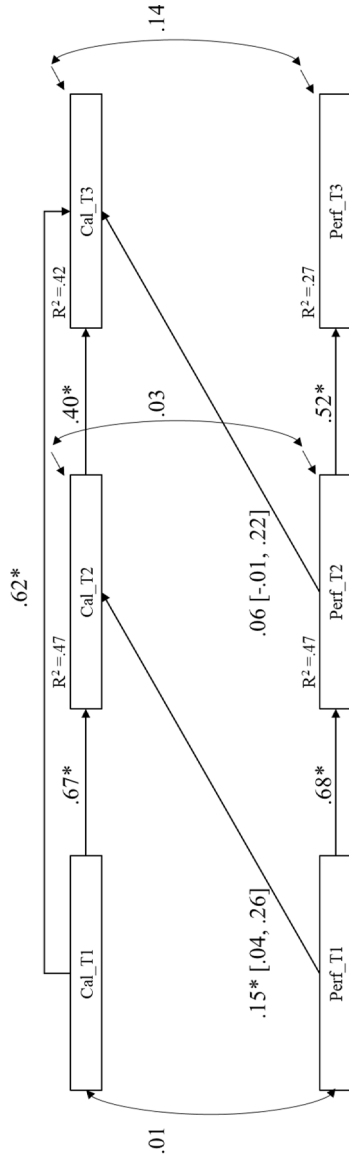


FIGURE 1 Autoregressive and cross-lagged paths for Model 3. Cal_T = Calling at Time 1, Time 2, and Time 3, respectively; Perf_T = Self-rated Task Performance at Time 1, Time 2, and Time 3, respectively. Squared brackets = 95% confidence interval. * $p < .05$.

DISCUSSION

The present study tested competing predictions on the temporal relation between calling and self-rated task performance. Comparisons of alternative cross-lagged panel models using a three-wave dataset from 285 US employees suggest that self-rated task performance is best seen as a predictor of career calling rather than the opposite.

These results contribute to the theoretical debate about the development of calling in two ways. First, they provide longitudinal support to the feedback loop suggested by the psychological success model (Hall & Chandler, 2005). Repeated success in the job fosters positive feelings and awareness of accomplishments, which can subsequently lead to discernment and reinforcement of a calling (proposition 6b; Hall & Chandler, 2005; Dalla Rosa et al., 2019). In this study, calling developed as a result of performing well on the job. High levels of task performance and achievement are likely to elicit positive feedback from the environment, helping people to raise their awareness on their talents and abilities, ultimately fostering a strong identification with their career path. Indeed, as individuals achieve professional legitimacy, they align their professional identity with their accomplishments (Bloom et al., 2021). Over time, continued achievement leads individuals to see themselves as meaningful contributors to their profession, ultimately translating into a sense of calling.

Second, this study promotes a reflection on the WCT. Empirical evidence supporting the causal effect of performance on calling might be interpreted as countering the prediction of the WCT, according to which performance is a positive consequence of calling. Yet, this study specifically investigated self-reported performance, which is likely to be a correlated but independent phenomenon from actual performance (Pransky et al.,).

Indeed, predictions of the WCT might still hold for actual performance. Our results suggest to challenge the prediction that calling predicts performance but do not directly fail to provide support to the WCT. Self-reported performance might be included in the theory as a retro-active mechanism that contributes to the development of a calling. It is possible that actual performance is indeed an outcome of calling that influences self-reported task performance through feedback from the environment, especially leaders, which in turn predicts calling. If this is true, then this dynamic might give rise to a virtuous cycle in which calling, actual and self-reported performance influence each other during person-environment interactions. We urge future research to test this speculation as it may lead to a clearer understanding of how callings develop.

The interplay between performance and a sense of calling may be affected by some boundary conditions. It has been observed that the positive relation between self-rated task performance and calling is null in highly demanding work environments (Vianello et al., 2022). Furthermore, Chang et al. (2020) observed that calling is linked with employees' crafting behaviors through career commitment only when job autonomy is high. It is possible that when demand is high or autonomy is low, task performance would be attributed to external causes rather than to individual mastery and accomplishment, thus limiting its impact on calling.

It could be also posited that lower levels of performance might act as a catalyst for identity dissonance among individuals, prompting a reevaluation of their vocational path. This potential link suggests that struggles in performance may delay or complicate the recognition of individuals' calling. For example, there could be a dissonance between sources of performance evaluations and feedback that individuals receive regarding the quality of their work. Research suggests a connection between career and job-related feedback and a sense of calling (Hu et al., 2018). Feedback regarding performance and career might work as one of the many mediators of the interaction between individuals and their environment. Unraveling these boundary conditions could provide valuable insights into the dynamic relations between performance and

calling, shedding light on the nuanced factors that influence the journey towards recognizing and embracing a sense of calling in the workplace. Such investigations have the potential to inform tailored interventions and support mechanisms for individuals navigating the intersection of performance, identity, and calling.

Practical implications

The results of this study may be particularly useful for human resource managers within organizations. Upon the assumption that calling predicts performance, and in the absence of longitudinal evidence, it has been previously suggested that calling should be taken into account in hiring and selection processes (Vianello et al., 2022). Yet these results suggest a radically different view, whose main implications are of interest to evidence-based performance management and retention strategies. This study shows that a calling could be developed in organizations through perceived performance, on which leaders and managers have (and should have) an influence. In the great resignation era, in which people all around the world re-evaluate their priorities and purpose in life (McKinsey, 2023), where organizations struggle to both hire and retain talents, providing high quality and constructive feedback aimed at shaping employees' sense of purpose and meaning may satisfy existential needs of both individuals and organizations.

Limitations

This study relies on a single method and source to assess calling and performance, potentially introducing common method bias (Podsakoff et al., 2003). Future studies are encouraged to combine different sources of information (i.e., leaders, peers, clients) and methods (i.e., archival information on actual productivity) within the same study. Additionally, the analysis model that we employed in this study does not take into account measurement error as in structural equation modeling. Hence, relations (regression weights and correlations) are not corrected for unreliability and standard errors may be less precise. Also, this study did not differentiate between perceiving and living out a calling. Given the strong relation that has been observed between the UMCS and living out a calling in past studies and the evidence that the perception of having a calling is fostered by the extent to which individuals live it out (Vianello et al., 2020), we might assume that these results can be generalized to living a calling. It might be that living out a calling at work predicts objective performance through enhanced motivation and increased ability; perception of competence and success might activate self-awareness about job enjoyment, increase positive job attitudes, followed by the development of a belief that they have a calling. Future studies are encouraged to investigate the temporal relation between different measures of calling and performance.

CONCLUSION

In conclusion, this study challenges conventional assumptions on the relationship between career calling and task performance. Self-rated task performance emerges as a stronger predictor of career calling than the opposite. These findings align with theories that conceive a calling as the ultimate subjective experience of career success.

AUTHOR CONTRIBUTIONS

Designed the study: Sophie Gerdel, Michelangelo Vianello. Developed the materials: Sophie Gerdel, Ryan Duffy. Collected the data: Sophie Gerdel. Performed and interpreted the statistical analyses: Sophie Gerdel, Anna Dalla Rosa, Michelangelo Vianello. Wrote the report: Sophie Gerdel, Anna Dalla Rosa, Ryan Duffy, Michelangelo Vianello.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data and materials that support the findings of this study are openly available in the Open Science Framework at <https://osf.io/568jx/>

ETHICS STATEMENT

No.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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