

Employee Performance in Temporary Organizations: The Effects of Person-Environment Fit and Temporariness on Task Performance and Innovative Performance

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This study investigates individual employee performance, both task-oriented and innovation-generating, in temporary organizations (TOs) by applying the person-environment (P-E) fit concept. Prior research on work outcomes has revealed distinct differences between TOs and their surrounding permanent organizations (POs) but has not included a differentiated investigation of the antecedents of employee performance in TOs. Accordingly, we examine the influence of different P-E fit dimensions and the moderating role of the temporariness of the organizational unit on task performance and innovative performance using a cross-industry sample of 341 TO members and 20 of their supervisors. Our findings suggest that (i) both task and innovative performance in TOs are significantly increased by overall P-E fit, within which (ii) the dimension of Person-Job fit has the largest impact, and (iii) temporariness can increase the positive effect of P-E fit on task performance.

Keywords: employee performance; task performance; innovative performance; person-environment fit; temporary organization

Introduction

Employee performance is determined and influenced by manifold factors and may include personal, job-related and organizational components (Harrison *et al.*, 2002; Janssen and Van Yperen, 2004). Consequently, employee performance should be examined in a differentiated way (Goodman and Svyantek, 1999). Research on employee performance has increasingly sought to understand its antecedents (Janssen and Van Yperen, 2004; Griffin and Parker, 2007) and related concepts such as task performance (Harrison *et al.*, 2002) and innovative performance (Keller, 2012; Spanuth and Wald, 2017a). In addition, employee performance may differ between permanent organizations (POs) and temporary

organizations (TOs). ‘A temporary organization can be defined as an aggregate of individuals temporarily collaborating for a shared cause’ (Nuhn *et al.*, 2019, p. 255). TOs can take different forms, such as task forces or crews, but projects are the most prevalent form of TO. TOs exhibit certain characteristics that differentiate them from POs (Bakker, 2010; Lundin *et al.*, 2015; Henning and Wald, 2019), including leadership (Tyssen *et al.*, 2013), turnover intentions (Nuhn *et al.*, 2019), and organizational commitment (Spanuth and Wald, 2017b). An important role of TO characteristics in the antecedents of task-related and innovation-related work outcomes seems plausible but has not yet been considered in the literature. This gap is a notable shortcoming given the increasing use of TOs in all industry sectors (Bergman *et al.*, 2013; Burke and Morley, 2016; Schoper *et al.*, 2018).

A TO is usually embedded within a PO or may have several interfaces with it (Engwall *et al.*, 2003; Sydow

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and Windeler, 2020). Differences in the characteristics of TOs and their surrounding POs have been clearly established (Bakker, 2010; Hanisch and Wald, 2014), and thus the antecedents and underlying relationships of employee performance in TOs can be assumed to be different from those in POs as well. In this paper, we follow Henning and Wald (2019), who summarized earlier research and identified five characteristics/dimensions separating the organizational forms of POs and TOs from each other. First, in contrast to POs, TOs are determined by an *ex ante* limited duration, and the members of the TO are aware of this limited duration (Lundin and Söderholm, 1995; Jacobsson *et al.*, 2015). Second, working in TOs is often characterized by non-routine, unique tasks as well as greater complexity than working in POs (Bechky, 2006; Hanisch and Wald, 2014). Third, when assembling a TO team, importance is attached to selecting members from different disciplinary areas to ensure interdisciplinary team composition (Lundin and Söderholm, 1995; Nuhn and Wald, 2016). Fourth, the hierarchical configuration in TOs is usually characterized by a clash of participants' hierarchical roles; that is TO members can have different roles inside and outside the TO (Hanisch and Wald, 2014). Finally, the fifth dimension differentiating TOs from POs is coordination, which is often more informal and less process-based in TOs than in POs (Bechky, 2006; Hanisch and Wald, 2014). Henning and Wald (2019) explain that most real-world organizations cannot be classified as a 'pure' TO or PO but rather express these 5 dimensions on a continuum between the two poles.

In this paper, we present a differentiated performance analysis within this organizational continuum. We draw on person-environment (P-E) fit theory, which was first used in organizational and social psychology (Lauver and Kristof-Brown, 2001; Cable and DeRue, 2002) but is now also established in management research (Seong *et al.*, 2015; Follmer *et al.*, 2018). The fundamental assumption of P-E fit theory is that increased congruence between personal aspects and environmental elements leads to better work outcomes. Individuals interact with their environment within several P-E fit dimensions, such as Person-Organization (P-O) fit, Person-Group (P-G) fit and Person-Job (P-J) fit (Lauver and Kristof-Brown, 2001; Jansen and Kristof-Brown, 2006; Yu, 2016). While numerous studies have shown that fit is associated with greater organizational commitment and job satisfaction, reduced turnover intention, and greater role-prescribed employee performance in permanent organizational settings (e.g. Kristof-Brown *et al.*, 2005; Edwards, 2008; Hamstra *et al.*, 2019), previous work has not (i) differentiated between traditional in-role task performance and extra-role innovative performance and (ii) applied P-E fit in the context of temporary organizations (TOs).

The present study contributes to research on employee performance, TOs and P-E fit in five ways. First, we empirically examine how TO characteristics affect employee performance, including both task and innovative performance. Second, in doing so, we answer the call for research for a better understanding of the antecedents of innovation generation in TOs (Anderson *et al.*, 2004; Spanuth and Wald, 2017a) and enrich theoretical knowledge on the specificities of TOs. Third, we advance organizational research by developing a measurement of the 'temporariness' of an organizational unit as an operationalization of the PO-TO continuum. Fourth, by testing the moderating effect of temporariness, we tackle a further research gap by investigating the role of a manageable organizational characteristic in the P-E fit-outcome relationship (Kristof-Brown *et al.*, 2005; Erdogan and Enders, 2007; Weller *et al.*, 2019). Fifth, by applying the P-E fit concept to the context of TOs, we enrich the P-E fit literature with key new insights and introduce this concept to the field of innovation management.

Person-environment fit and employee performance in temporary organizations

P-E fit has been established as a complex antecedent of work-related outcomes (Werbel and Gilliland, 1999; Seong *et al.*, 2015; De Cooman *et al.*, 2019). It generally refers to some perceived degree of congruence, match or similarity between a person and their working environment (Edwards, 2008; Follmer *et al.*, 2018). Although P-E fit has previously been applied only to POs, it is a broad-based theory and therefore is also applicable to TOs (Edwards, 2008; Goetz *et al.*, 2020). Furthermore, the concept of P-E fit is appropriate for analyzing work outcomes in TOs because it can be used to examine not only the direct environment, that is, the TO, but also the more indirect environment, namely, the surrounding PO (Bakker *et al.*, 2016).

Given that POs and TOs exhibit different characteristics, a detailed consideration of the conceptual foundations of P-E fit theory is needed to apply it to TOs. One essential conceptualization is the differentiation of dimensions of P-E fit. The most frequently used dimensions constitute the fundamental levels of the working environment: Person-Organization (P-O) fit, Person-Group (P-G) fit and Person-Job (P-J) fit (Lauver and Kristof-Brown, 2001; Jansen and Kristof-Brown, 2006; Yu, 2016; Li *et al.*, 2019; Goetz *et al.*, 2020). P-O fit is defined as congruence between a person and an entire organization in terms of values and goals. P-G fit examines the compatibility between individuals and

their workgroups and therefore focuses on interpersonal skills (Shin and Choi, 2010; Li *et al.*, 2019). P-J fit refers to the congruence of personal skills, knowledge, and abilities (KSAs) with the demands of the job (Werbel and Gilliland, 1999; Kristof-Brown *et al.*, 2005). This paper adopts these three P-E fit dimensions to analyze TOs at the organizational, group, and personal levels (Nuhn and Wald, 2016). At the organizational level, a TO has its own structure, culture and coordination mechanisms that distinguish it from the surrounding PO (Lundin *et al.*, 2015; Turner and Mitrev, 2019). At the group level, the team is the decisive work unit and therefore also a unit of analysis of a TO. At the individual level within a TO, a team member performs a specific task and may depend on other individuals in different ways (Hanisch and Wald, 2014).

Based on these conceptual foundations, numerous empirical studies of P-E fit have demonstrated positive effects of several P-E fit dimensions on work outcomes such as organizational commitment, job satisfaction and turnover intention in POs. These studies focused on the influence of P-E fit on employee performance (Edwards, 2008; De Cooman *et al.*, 2019) but, due to the characteristics of POs, have never gone beyond repetitive task activities (Harrison *et al.*, 2002; Seong *et al.*, 2015). By applying P-E fit in the context of TOs, we make two presumptions due to the differences between POs and TOs. First, in line with other studies on organizational behavior in TOs (Tyssen *et al.*, 2013; Spanuth and Wald, 2017b; Nuhn *et al.*, 2019), we presume that it is an oversimplification to assume that the relationships established in POs apply to TOs as well. This was demonstrated by Goetz *et al.* (2020), who developed a P-E fit model for TOs that combines the three P-E fit dimensions with the TO characteristics of Henning and Wald (2019). Goetz *et al.* (2020) aimed to identify a set of person attributes that make individuals particularly well-suited to working in TOs. Second, the crucial innovative work component within TOs requires a differentiation of performance assessments between role-prescribed, namely, role-related, and extra-role, that is, innovation-related, job outcomes. Given the important role of TOs in innovative capacity at the firm and macroeconomic levels (Keegan and Turner, 2002; Spanuth and Wald, 2017a; Henning and Wald, 2019), TO members are expected to not only perform role-prescribed task activities in a PO-typical manner but also provide an innovation-related outcome (Goodman and Svyantek, 1999; Gemünden *et al.*, 2018). Consequently, assessing performance within TOs is not simple. In line with comparable performance studies (Janssen and Van Yperen, 2004; Keller, 2012), discussions of TO performance should therefore distinguish between task-oriented and innovative-oriented performance.

Task performance and P-E fit

In general, task performance refers to the degree to which an employee fulfills formalized role expectations and requirements as an individual (Griffin and Parker, 2007). High levels of P-O, P-G, and P-J fit can increase task performance in POs (Goodman and Svyantek, 1999; Lauver and Kristof-Brown, 2001; Hamstra *et al.*, 2019). However, task activities are role-prescribed and vary between different jobs, even within the same organization (Goodman and Svyantek, 1999). Given the distinct differences in the nature of tasks between the pure forms of POs and TOs, employee performance will vary between PO and TO tasks as well. Furthermore, within the symbiotic relationship between POs and TOs, employees often are assigned to both organizational forms simultaneously or have to switch between them (Bergman *et al.*, 2013), and thus the antecedents and effects of P-E fit on task performance in TOs must be reported separately.

Nevertheless, due to the generalizability of the P-E fit concept, the same underlying mechanisms may apply in POs and TOs (Goetz *et al.*, 2020). Higher fit in the dimensions of P-O, P-G, and P-J fit results in higher motivation through organizational value agreement (P-O), promotion of group cooperation and synergy (P-G) and the supply of required KSAs (P-J). High fit in all three dimensions therefore also results in higher overall P-E fit, which ultimately leads to increased task performance in TOs. For instance, based on the TO characteristics of temporal limitation, informal coordination and ambiguous hierarchy, employees who value a culture determined by autonomy and flexibility (Bakker *et al.*, 2016; Stjerne and Svejenova, 2016; Goetz *et al.*, 2020) are likely to perceive higher P-O fit in TOs and show higher motivation through value congruence (O'Reilly *et al.*, 1991; Edwards and Cable, 2009). Therefore, we hypothesize the following:

Hypothesis 1a. Higher overall P-E fit in TOs indicates higher task performance in TOs.

Innovative performance and P-E fit

In contrast to task performance, employee performance in terms of generating innovations is not defined consistently and encompasses several closely related concepts, such as innovative (work) behavior (Parker and Collins, 2010; Spanuth and Wald, 2017a) and employee innovativeness (Janssen and Van Yperen, 2004). Innovative performance typically includes the exploration of opportunities and generation of new ideas (Parker and Collins, 2010). In the context of POs, generating innovations is an extra-role rather than in-role activity (van Dyne and LePine, 1998; Ma Prieto and Pilar Pérez-Santana, 2014). Therefore, in POs, innovative performance is not an

aspect of individual task performance (Seibert *et al.*, 2001; Griffin and Parker, 2007) because POs are commonly used for more routine and less innovative tasks (Jacobsson *et al.*, 2015).

By contrast, TOs are widely recognized to promote innovation (Gemünden *et al.*, 2018), as their working conditions are characterized by non-routine tasks as well as complexity in terms of transdisciplinary and less-formal organizational coordination (Hanisch and Wald, 2014; Henning and Wald, 2019; Packendorff, 1995). Hence, work in TOs involves both traditional in-role and non-traditional extra-role activities, and innovative performance is a crucial component of overall job performance in TOs.

Like task performance in TOs, the mechanism proposed by the broad-based P-E fit theory can be adopted for innovative performance. Thus, higher fit in the three dimensions of P-O, P-G and P-J fit results in higher innovative performance of employees in TOs (Edwards, 2008). For instance, a high fit in values between employees and their organizations, that is, P-O fit, is supposed to increase the likelihood that extra-role activities will occur (Chatman, 1989). Consequently, P-O fit serves as a catalyst of extra-role activities to enable higher innovative performance in TOs. Furthermore, the literature indicates that the dimensions of P-J and P-G fit can positively influence employee innovativeness through appropriate, KSA-based employee selection (P-J fit) (Edwards, 2008), novel role changes within a working group, and subsequent tension creation within a workgroup (P-G fit) (Griffin and Parker, 2007; Bakker *et al.*, 2016). Thus, we predict the following:

Hypothesis 1b. Higher overall P-E fit in TOs indicates higher innovative performance in TOs.

Employee performance and the temporariness of the organizational unit

Prior studies based on the P-E fit concept have assumed that organizational characteristics are nearly static, that is, not changeable and therefore not relevant factors within fit-outcome-relationships (Chen *et al.*, 2016). However, outside P-E fit research, the crucial role of organizational framework conditions in work outcomes is undisputed. To take organizational characteristics into account and apply P-E fit consistent with the TO literature, we use the continuum between POs and TOs (Burke and Morley, 2016; Nuhn and Wald, 2016; Lenfle and Söderlund, 2019; Goetz *et al.*, 2020). The PO-TO continuum describes the interrelation of permanent and temporary organizations, rejecting the idea that the relationship between a TO and the PO is a binary distinction (Sieben *et al.*, 2016; Nuhn *et al.*, 2019). The

continuum is formed by the expression of the five characteristics distinguishing POs and TOs (Henning and Wald, 2019) such that the temporariness of an organizational unit is defined as the degree to which an organization adopts these characteristics in the direction of a 'pure' TO (Goetz *et al.*, 2020).

Task performance and the temporariness of the organizational unit. We argue that the greater the temporariness of an organization, the more important the attributes, skills, and relationships that lead to better work outcomes in TOs. Consequently, the fit-outcome relationships considered in the context of a TO also become more evident when the temporariness of an organization increases. This is particularly true for the effect of overall P-E fit on task performance, as this component of TO employee performance is an essential parameter of success in TOs, which are often more goal-oriented and task-oriented (Keegan *et al.*, 2012). For example, typical TO coordination structures, which have fewer boundaries and more ties between organizational units across different hierarchy levels, provide greater access to information and therefore increase performance (Cummings and Cross, 2004; Lindner and Wald, 2011; Hanisch and Wald, 2014). Thus, we posit the following hypothesis:

Hypothesis 2a. A high degree of temporariness positively moderates the relationship between P-E fit and task performance in TOs.

Innovative performance and the temporariness of the organizational unit. The characteristics of a 'pure' TO also indicate an increased effect of the hypothesized fit-outcome relationship on the second component of employee performance in TOs, innovative outcomes. A high degree of organizational formalization and control can inhibit the complex process of successful innovation (Troy *et al.*, 2001; Lill *et al.*, 2020), and innovation generation is reduced in such organizations (Pierce and Delbecq, 1977). Compared with POs, TOs are known for more informal coordination, which allows employees to innovate by identifying improved ways of working under their own initiative rather than under the direction of a supervisor (Griffin and Parker, 2007; Hanisch and Wald, 2014). Hence, through informal coordination and ambiguous hierarchies, TOs reduce the barriers to generating innovation caused by a high degree of formalization and promote innovation (Bakker, 2010; Gemünden *et al.*, 2018).

In addition, the diverse team composition of TOs is advantageous for fulfilling knowledge-intensive tasks (Blindenbach-Driessen and van den Ende, 2010), as successful innovation depends on the availability of

employees with capabilities and expertise from different backgrounds (Abra, 1994). Employees who can generate effective and useful ideas and transfer known approaches to unknown issues, referred to as ‘knowledge workers’, are essential for innovation (Lee and Maurer, 1997). In employee groups with above-average numbers of knowledge workers, such as engineers and scientists, a correlation between more temporary work settings and greater innovativeness has been found (Keller, 2012). This is one of the reasons why TOs are associated with a high percentage of knowledge workers, who identify strongly with their professions and stay with a firm if they perceive high fit (Benson *et al.*, 2004). Hence, we hypothesize the following:

Hypothesis 2b. A high degree of temporariness positively moderates the relationship between P-E fit and innovative performance in TOs.

Figure 1 integrates the four hypotheses in the research model.

Data and methods

Data and sample

To test the hypotheses empirically, we focused on respondents from Germany. Germany is an appropriate country context to study TOs because as of 2013, the share of project work among total work in the German economy was already 34.7%, and it is estimated that this share will increase further (Schoper *et al.*, 2018). Finding appropriate contact persons in TOs and gaining access to them is a challenge due to the lack of conventional databases. In line with sampling procedures in recent TO research (Hanisch and Wald, 2014; Spanuth and Wald, 2017b; Bjorvatn and Wald, 2018), we collaborated with project management associations and distributed our web-based questionnaire via e-mail by using contact lists of project members. This sampling approach may result in sample bias, as these project managers and

project-team members may be better trained in project management tools and methods than those who are not members of these associations. However, formal training in project management is not part of our research model, which may make this potential bias less of a concern. Compared to a less-targeted sampling strategy, our approach ensured that we reached a relevant population able to answer the questionnaire with a high knowledge base, thus enhancing the sample’s representativeness and outweighing the disadvantages of inviting an undeterminable population to participate in the study. The lack of a quantifiable population precludes statistical validation in relation to the population but allows external generalization and thus the determination of external validity in relation to similar temporarily organized environments (Bjorvatn and Wald, 2018). To control for intersubjective validity and reliability, the questionnaire was pre-tested with 17 project experts. The results of the pre-test indicated that no major changes were needed.

The link to our survey was clicked 1,971 times in total, and 807 respondents initiated participation in the self-administered online survey. After considering a filter question regarding the existence of project experience asked at the beginning and excluding invalid or incomplete answers, we obtained a total of 341 usable and qualified answers, corresponding to a response rate of 17%. The majority of the respondents included in the analysis were female (53.8%), and the average age of the respondents was 35. Eleven industries were covered, with a clear predominance of the broader field of (financial) services (48.1%), followed by manufacturing industries (20.9%), energy and chemical industries (11.1%), the education sector (7.8%), tourism (5.1%) and the health sector (2.7%). The remainder of the respondents, 4.7%, belonged to other industry sectors or did not indicate their industry. The respondents generally held operational positions within their project work (i.e., classic project staff, no project-leading or similar roles), with an average work experience of 10 years. Overall, the sectoral diversity of the sample supports the generalizability of our results. An overview of the descriptive statistics is provided in Appendix Table A1.

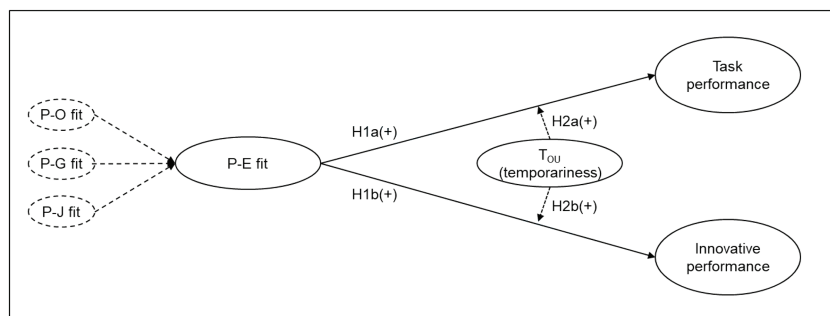


FIGURE 1 Research model

Furthermore, we conducted a dyadic study to prevent single or key informant bias (Phillips, 1981) regarding the respondents' task performance and innovative performance in the TO. For this purpose, each respondent was asked at the end of the questionnaire to indicate their TO. In a separate online questionnaire, the respondent's supervisor was subsequently asked to assess both performance components of the respondent in this project. In this way, we collected evaluations from 20 supervisors. We conducted a paired sample *t*-test including the items of employee task performance and innovative performance. The significance levels for the eight pairs (2-tailed) ranged between 0.055 and 0.9, indicating that there was no significant difference between the information provided by the employees and that provided by their supervisors. This finding is consistent with previous work showing that self-reported measures correlate with supervisor ratings of more innovative-related work outcomes (Abstein *et al.*, 2014) or in more proactively organized work environments (Parker *et al.*, 2006).

In addition, a combination of procedural and statistical remedies was used to control for common method bias (Podsakoff *et al.*, 2012). In terms of procedural remedies, the anonymity and confidentiality of all respondents were maintained. In addition, temporariness as a moderator should prevent common method variance caused by an overly simple structural model (Chang *et al.*, 2010). Regarding statistical remedies, we conducted three tests: Harman's single-factor test, the Lindell-Whitney marker variable test and Kock's collinearity test. The results of all three tests indicated that common method variance should not be a concern in our model, as all were below their respective thresholds.

Measures

Where possible, items from established scales were used to assess the constructs (see Table 1). Due to the use of a German-speaking questionnaire and to clarify the focus on TOs, the items were partially adapted. Each scale item was measured using a seven-point Likert scale ranging from 1 (totally disagree) to 7 (totally agree) (for an overview, see Appendix Tables A2, A3 and A4).

Since the temporariness of an organizational unit has not been measured previously, no established scales could be used or adapted. A Euclidean measure was sought as a distance from a 'pure' TO for each of the five TO dimensions and then aggregated to a numerical result to indicate the temporariness of an organization. In more detail, following the approach of Naman and Slevin (1993), the congruence between two variables can be determined by their absolute difference in several categories. Within each TO dimension, a reference is required as a base value for calculating the distance between the observed configuration and a target

configuration (Naman and Slevin, 1993). According to the designation of the five TO dimensions and the superordinate terminology of 'temporariness', the maximum value of an item in the direction of a "pure" TO is assumed as the respective reference value. Such a maximum evaluation in all dimensions represents the only theoretically existent ideal form of a TO.

Following comparable research on other forms of organizations (Shin, 2004), the temporariness of an organizational unit (T_{OU}) is the unweighted sum of the temporariness scores (TSs) of the five TO dimensions i ($i = 1, n$). To allow higher values to be synonymous with a higher degree of temporariness, the sum is inverted:

$$T_{OU} = (-1) \sum_{i=1}^5 TS_i. \quad (1)$$

To calculate TS_i , the sum of the values of the distances between the extreme value in the direction of a pure TO within the five TO dimensions i and the values of aspect j within TO dimension i is determined:

$$TS_i = \sum_{j=1}^4 e_j - v_{ij}. \quad (2)$$

To strengthen the validity of the hypotheses, we add four control variables that are commonly used in research on organizational behavior. In particular, the joint usage of age (c.f. Resick *et al.*, 2007; Chen *et al.*, 2016; Kim *et al.*, 2018) and gender (c.f. Mohammed and Nadkarni, 2011; Tak, 2011; Spanuth and Wald, 2017a) as controls is common in P-E fit and organizational research. Furthermore, individuals with previous work experience may have different attitudes or preferences towards different forms of organization, which in turn could affect fit perceptions, work behavior and results. Therefore, we also control for work experience (Resick *et al.*, 2007; Nuhn *et al.*, 2019). Lastly, since there is theoretical support for a general influence of industry but not its direction, we add the control variable industry to test for industry-specific effects (Tak, 2011; Spanuth and Wald, 2017a).

Analysis

We applied a variance-based structural equation modeling (SEM) approach, the partial least square method (PLS-SEM), to test our hypotheses. This allowed us to simultaneously assess and test the various cause-and-effect chains in our model and to investigate P-E fit as a predictor of task and innovative performance in TOs under varying degrees of temporariness (Hair *et al.*, 2013). To test the moderating role of the evaluated temporariness of an organizational unit, we applied procedures suggested within the product indicator approach by Chin *et al.* (2003) for calculating interaction effects.

TABLE 1 Used constructs

Construct	Type	Source
P-O fit	Reflective (4 items)	Lauver and Kristof-Brown (2001); Cable and DeRue (2002)
P-G fit	Reflective (4 items)	Seong <i>et al.</i> (2015); Shin and Choi (2010)
P-J fit	Reflective (4 items)	Lauver and Kristof-Brown (2001)
Temporariness of an organizational unit	Temporal duration	<i>No established scale available</i>
	Nature of task	Mohammed and Nadkarni (2011); Goodhue and Thompson (1995)
	Team composition	Campion and Medsker (1993)
	Hierarchy	Rizzo, House and Lirtzman (1970); Ragins, Singh and Cornwell (2007)
	Coordination	Tinsley (2001); Mohammed and Nadkarni (2011); Iacovou, Thompson and Smith (2009)
Task performance	Reflective (4 items)	Van Dyne and LePine (van Dyne and LePine, 1998)
Innovative performance	Reflective (4 items)	Janssen and Van Yperen (2004)

Results

Evaluation of the measurement model

We assess the quality of our reflective constructs by conducting several statistical tests (see Table A3). First, all values of Cronbach's alpha surpass the traditional threshold of > 0.7 (Hair *et al.*, 2013). Second, indicator reliability is confirmed according to the common threshold of > 0.7 (Chin, 2010) for all indicator loadings. Third and fourth, each construct reaches a composite reliability (CR) of at least 0.6 as well as an AVE of at least 0.5, indicating convergent validity. To test the discriminant validity of the reflective constructs, we use the heterotrait-monotrait ratio of correlations (HTMT) test (Henseler *et al.*, 2015). As expected, all HTMT values are below the common threshold of 0.9, thereby establishing discriminant validity between the reflective constructs. For a more detailed overview of the HTMT values, see Appendix Table A6.

In addition, we test the quality of our second-order formative construct 'Person-Environment Fit' by evaluating multicollinearity and indicator relevance. As shown in Appendix Table A4, the significance of all outer weights surpasses the threshold of $t > 1.96$ (Chin, 2010). Furthermore, the variance inflation factor (VIF) is 1.132, below the threshold of 5 (Hair *et al.*, 2013). Thus, multicollinearity should not be a concern at the second-order measurement model level.

Evaluation of the structural model

We check the appropriateness of our structural model by calculating all path coefficients, their respective significance levels, and the R^2 -values of the endogenous constructs. The determined R^2 -values indicate coherence of the model and the data, with values of .23 for innovative performance and .29 for task performance. Figure 2 illustrates these values, all path coefficients, and

their respective significance levels. Accordingly, almost all hypotheses are empirically supported.

More specifically, **H1a** and **H1b** are supported, as P-E fit is observed to have positive effects on both task performance ($\beta = .46$; $p < 0.01$) and innovative performance ($\beta = 0.28$; $p < 0.01$) in TOs. To obtain insights on the importance of the individual P-E fit dimensions for the complete structural model, a further analysis is conducted below (see subsection below). Due to the negative moderating effect of T_{OU} , that is, the temporariness of the organizational unit, on the relationship between P-E fit and task performance in TOs, **H2a** is not supported. This negative moderating effect is highly significant ($\beta = -0.18$; $p < 0.01$) and in fact opposite to **H2a**. Further analyses are therefore performed to investigate this surprising negative moderation effect (see subsection below). **H2b** cannot be empirically confirmed. No significant effects of the four control variables, i.e., age, experience, gender, industry, are observed.

Additional analyses

Due to the conceptualization of temporariness T_{OU} , a first interpretation of the negative moderation effect is that the organizational unit should be as permanent as possible, that is, it should be at the extreme edge of a PO in all five TO dimensions. Since this is not in line with the positive effect of high P-E fit on task performance in TOs (i.e., **H1a**), an additional analysis is appropriate.

Figure 3 presents an in-depth analysis of this negative moderating effect. In particular, two interrelated findings are revealed: First, the more permanent (and not temporary) the organizational unit is, the more positive the relationship between P-E fit and task performance within the TO. Second, however, up to a certain value of P-E fit within a TO, it is still advantageous in terms of task performance to choose a temporary configuration of the organizational unit.

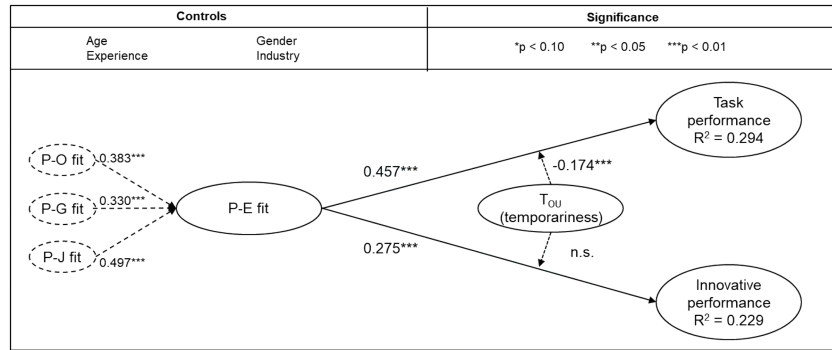


FIGURE 2 Structural model results

In addition, we conduct a so-called importance-performance map analysis (IPMA) to gain important insights into the roles of the work outcomes antecedent constructs and their relevance for managerial actions. In so doing, we extend our results by contrasting the structural model total effects (importance) and the average values of the latent variable scores (performance), measured on a scale from 0 to 100 (Ringle and Sarstedt, 2016). IPMA is a useful approach to identify determinants of relatively high importance but relatively low performance as areas for major improvement via managerial actions (Schloderer *et al.*, 2014).

Although a more complete picture of the effects of occupational fit can be obtained by examining overall P-E fit, practical recommendations for exploiting P-E fit effects can be derived more easily based on the effects of individual fit dimensions. Different fit types have been revealed to have varying effects on employee outcomes (Chuang *et al.*, 2016), as limited attention resources are assumed to cause subjective perceptions of various attributes and their effects and result in different overall P-E fits (Jansen and Kristof-Brown, 2006). Given this ‘salience of fit dimension’ (Jansen and Kristof-Brown, 2006, p. 198), in a temporary work setting, P-O, P-G or P-J fit may have larger effects on not only overall

P-E fit but also the subsequent work outcomes of task and innovative performance. For each of the three target constructs, Figure 4 shows an importance-performance (I-P) map that graphically illustrates the relative values of the individual P-E fit dimensions for the complete structural model (see Figure 1; separate results for individual SEMs of the three P-E fit dimensions are provided in Appendix Table A5).

Discussion and conclusion

The purpose of this study was to develop our understanding of the antecedents of individual task performance and innovative performance in temporary organizations (TOs). Using person-environment (P-E) fit theory, we developed a fine-grained assessment of how congruence between an employee and the environment and the organizational framework conditions within which the employee is embedded contribute to employee performance. We set out to provide knowledge on the antecedents of innovative work outcomes in TOs (Anderson *et al.*, 2004) and on relevant organizational characteristics within the P-E fit literature (Kristof-Brown *et al.*, 2005; Erdogan and Enders, 2007; Weller *et al.*, 2019). To test our research model empirically, we

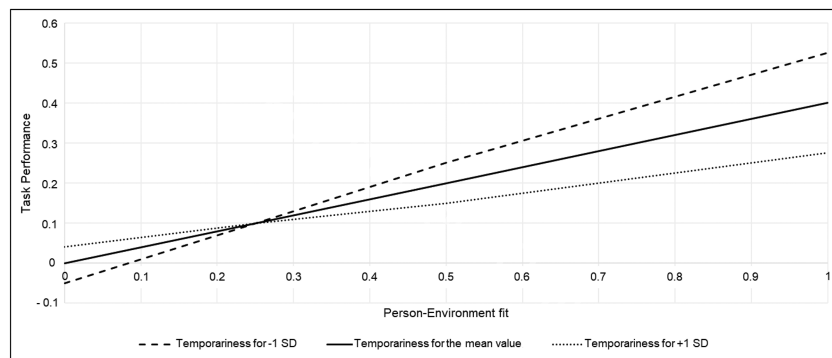


FIGURE 3 Moderating effect of T_{OU} on the effect of P-E fit on task performance in TOs

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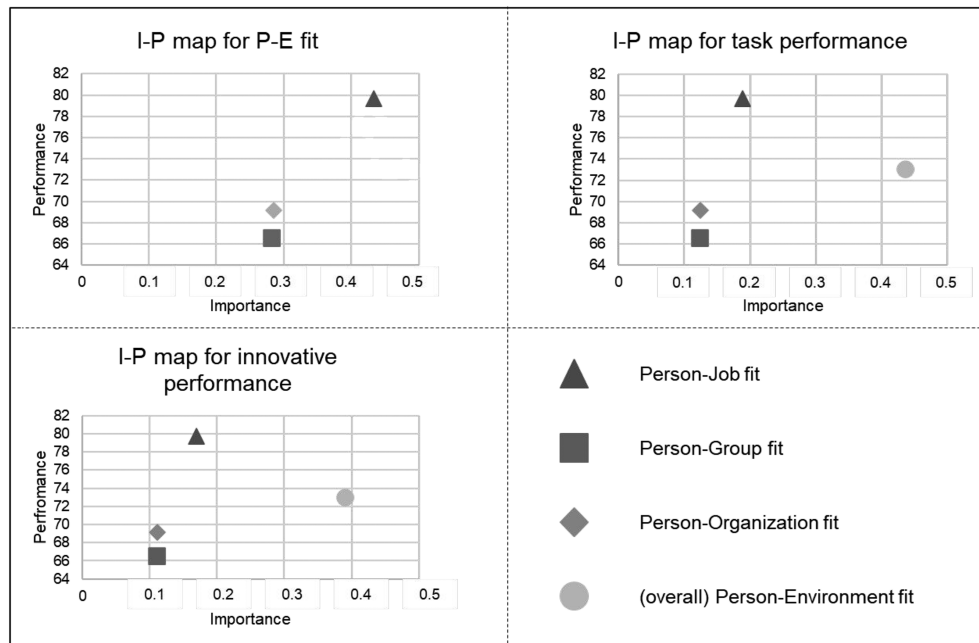


FIGURE 4 Importance-performance maps for P-E fit, task and innovative performance

used a cross-industry sample of 341 TO members, who had an average work experience of 10 years and occupied mostly operational positions in their projects, and 20 of their supervisors.

Theoretical contribution

In line with prior P-E fit research in POs, our findings show that several fit dimensions play important roles in individual performance in TOs (Lauver and Kristof-Brown, 2001; Kristof-Brown *et al.*, 2005). Employees who perceive high overall P-E fit will achieve better performance in terms of task accomplishment (Hypothesis 1a). However, our results add another facet to this established insight by suggesting that in temporary work environments, overall P-E fit also matters for more innovative work outcomes. That is, the total perceived congruence that an individual experiences with their TO is an important antecedent of the individual's innovative performance in the TO (Hypothesis 1b). Given that TOs are frequently designed to generate more innovations than POs (Grabher, 2004; Lenfle and Söderlund, 2019), this finding enriches the literature on TOs with key insights for future input–output cause-effect chains for innovations in TOs and thus answers the call for research for a better understanding of innovations in TOs (Anderson *et al.*, 2004; Gemünden *et al.*, 2018).

Although simultaneously considering more than two P-E fit dimensions has been theoretically recommended in the literature (Jansen and Kristof-Brown, 2006),

empirical applications have been limited. In contrast to findings in permanent work settings (Edwards and Billsberry, 2010), we show that overall P-E fit is beneficial in temporary working environments based on a multidimensional analysis. Moreover, the three layers considered here, namely, organizational, group, and individual, are in line with prior research on TOs (Nuhn and Wald, 2016; Nuhn *et al.*, 2019), thus enabling a simplified comparison with other TO studies. The support from the established P-E fit dimensions of P-O, P-G, and P-J also provides a more comprehensive view of fit-outcome relationships (Lauver and Kristof-Brown, 2001; Jansen and Kristof-Brown, 2006; Chuang *et al.*, 2016).

As an additional analysis, we examined the relative importance of the effects of the individual fit dimensions via importance-performance map analysis. In addition to the previously established crucial role of P-J fit for general performance in POs (Kristof-Brown *et al.*, 2005), our results indicate that the importance of P-J fit is highest among the individual fit dimensions within TOs. P-O and P-G fit lead to improved employee performance by ensuring that the individual and organization share the same values and attitudes, leading to a harmonized work culture (O'Reilly *et al.*, 1991; Edwards and Cable, 2009) and peer influence due to the correspondence between human relationships and proof of social skills (Werbel and Gilliland, 1999). However, KSAs are critical for fulfilling role-prescribed task activities (Goodman and Svyantek, 1999), and therefore achieving P-J fit directly

results in task completion and, in turn, higher job performance (Lauver and Kristof-Brown, 2001; Atkinson *et al.*, 2006).

The characteristics of TOs might further strengthen the importance of the gradient of P-E fit dimensions investigated in POs. Due to the potential for short-term changes in team member composition, tasks, working attitudes, or objectives (Hanisch and Wald, 2014), the more abstract levels of P-O and P-G fit might dissolve more easily in TOs. That is, the fit with organizational values and attitudes might lose importance in temporary work settings due to the greater nature of change in the work environment and the relative lack of development of organizational values compared with POs (Shin and Choi, 2010). Furthermore, group-related consistencies might dissolve because the time limitation makes it difficult to build trust within a workgroup. Trust needs time to develop and is built incrementally through prior experiences (Maurer, 2010). To perform in a group, individuals need to learn about each other's interests and competencies to develop perceptions and expectations of future behavior (Atkinson *et al.*, 2006).

By contrast, the importance of P-J fit for employee performance in TOs is maintained or possibly even increased compared with POs due to the specific conditions of TOs, especially the completion of non-routine, new, and often risky tasks (Hanisch and Wald, 2014). Within a TO, basic job requirements presumably play an outstanding role, as TOs are more goal- and task-oriented than POs (Keegan *et al.*, 2012). In addition, the Demand-Ability fit and complementary conceptualization of P-J fit reflect the need for specific KSAs to overcome the challenges to be faced in TOs at the job level (Kristof-Brown *et al.*, 2005). Furthermore, as employee performance in TOs comprises task performance and innovative performance, P-J fit also plays an outstanding role in the innovative character of an employee in a TO.

In addition, in contrast to prior research assuming a static organizational environment (Kristof-Brown *et al.*, 2005; Erdogan and Enders, 2007), we have considered the temporariness of the organizational unit to deepen the investigation of P-E fit by focusing on situational-individual elements, such as different fit dimensions or individual work outcomes. We add the temporariness of the organizational unit as a modifiable organizational configuration and thus provide a dynamic consideration of the organizational environment. Moreover, the incorporation of temporariness reflects the assumption of a continuum between the two ideal organizational forms of PO and TO (Sieben *et al.*, 2016; Nuhn *et al.*, 2019) based on the expression of the five characteristics distinguishing these poles (Henning and Wald, 2019). By developing an operationalization of this PO-TO continuum, we answer calls for a more detailed

description of this differentiation (Burke and Morley, 2016).

An empirical finding arising from this operationalization is a significant moderating effect of temporariness on the relationship between P-E fit and task performance in TOs (Hypothesis 2a). In-depth analyses of this negative moderation effect suggest that there is an optimum level of P-E fit in temporary work environments yielding the best possible task performance. Consequently, our study could provide evidence for similar assumptions that some degree of misfit is beneficial for individuals and organizations (Edwards, 2008; Follmer *et al.*, 2018). Extremely high levels of P-O fit could lead to ineffective behavior by limiting the adaptability of people and organizations to new environmental contingencies (Chatman, 1989). In fact, our study goes further by indicating that there are Pareto optimal distributions for overall fit and thus not only for P-O but also for P-G and P-J fit. Hence, there might be positive mechanisms for enhancing task performance in TOs based on some degree of misfit in interpersonal skills (P-G fit) as well as in supplied KSAs and job requirements (P-J fit).

Implications for management practice

In general, the literature implies that management practices that match a person's characteristics with those of the environment (Edwards and Cable, 2009) or fill a gap by adding a person's characteristics (Edwards, 2008) yield positive effects. The aim of such practices is to increase the (overall) fit of a person to increase the probability of a positive work result. In the context of TOs, our findings temper this conviction by suggesting that not all fit dimensions are equally important. P-J fit has significantly higher importance for improving employee performance within a temporary work environment. Therefore, executives and HR managers assembling TOs should prefer employees whose personal KSAs have high fit with job-role requirements. Particularly in large companies in which several TOs are embedded within a single PO, a reasoned selection of a PO employee for a job in a rather temporary organizational setting can be made based solely on their P-J fit.

Furthermore, our study provides evidence that although higher P-E fit leads to higher performance in more temporary organizations compared to permanent forms of organization, this relationship depends on how temporary the chosen form of organization is. If the organization is configured very temporarily, for example, with very informal coordination mechanisms and very heterogeneous team compositions, it must be assumed that a certain amount of misfit is conducive to performance. Therefore, employees should be chosen

who have a certain level of fit but who are also willing and able to work under conditions of pressure and competition.

Limitations and future research

This study has limitations that may also provide future research avenues. First, our results are based on a cross-sectional design, and thus we cannot determine whether the investigated effects change over time. One effective way to overcome this issue would be to choose a longitudinal design in future work. Second, further improvements in our measurement of the temporariness of an organizational unit based on the PO-TO continuum are needed. Additional empirical studies testing the characteristics that distinguish POs and TOs would be desirable to further develop these constructs if necessary. Such studies would not only further strengthen the assumption of a PO-TO continuum but also provide a better understanding of the current phenomenon of TOs itself. Third, other scholars could examine the suggested Pareto optimal distributions for P-O, P-G and P-J fit to obtain additional insights on whether some degree of misfit is beneficial for work outcomes in TOs. Finally, a large body of research suggests a positive effect of P-E fit for other work outcomes such as organizational commitment, turnover intention, or job satisfaction in POs (cf. Kristof-Brown *et al.*, 2005). It would be interesting to investigate whether these positive effects also hold for temporary organizations.

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Appendix

TABLE A1 Descriptive statistics

Category		Absolute	Percentage
Age	< 40 years	203	69.2
	≥ 40 years	138	30.8
Gender	Female	183	53.8
	Male	158	46.2
Industry	(Financial) Services	164	48.1
	Manufacturing	71	20.9
	Energy and Chemical	38	11.1
	Education	26	7.8
	Tourism	17	5.1
	Health	9	2.7
	Not indicated	16	4.7
	Project role	Project leader	114
	Project member	216	63.4
	Not indicated	11	3.2
Work experience	<20 years	297	87.1
	≥ 20 years	36	10.6
	Not indicated	8	2.3

TABLE A2 Constructs and items for temporariness measurement

TO dimension	Item
Temporal duration	I am aware that my project will dissolve as soon as its purpose is fulfilled.
	I am aware that my project is bound to a time-limited purpose.
	Already at the beginning of my activity I knew that my project will not exist in the long run.
Nature of task	Already at the beginning I knew that due to the temporal limitation of the project also my activity in this connection will end.
	I often feel very pressed for time when I perform my job.
	I frequently deal with unstructured business problems.
Team composition	I frequently deal with ad hoc, non-routine business problems.
	The business problems I work on involve answering questions that have never been asked in that way before.
	The members of my project team are from different areas of expertise.
	The members of my project team have skills that complemented each other.
Hierarchy	The members of my project team have a variety of different experiences.
	The members of my project team vary in functional backgrounds.
	I work under incompatible policies and guidelines.
Coordination	I work with two or more groups who operate quite differently.
	I do things that are accepted by one person over me and not accepted by others.
	I receive request from persons in equal rank and authority over me to do things which conflict.
	The members of my project team question the decisions made within the project, even if they were made by the project manager.
	The project manager consults the project team on the prioritization of tasks and the scheduled implementation time for each task.
	Project team members actively participated in the definition of project goals and schedules.
	Project team members were kept informed about major decisions concerning the project.

TABLE A3 First-order hierarchical measurement model results

<i>Construct level</i>		<i>Item</i>	<i>Loading</i>	<i>Sign.</i>
<i>2nd-order</i>	<i>1st-order</i>		(λ_i)	$(t\text{-value})$
	Task performance (Alpha = 0.855; CR = 0.902; AVE = 0.698)	I perform the tasks that are expected as part of my job.	0.823	21.479
		I fulfill the responsibilities specified in my job description.	0.744	17.430
		I meet performance expectations.	0.880	49.983
		I adequately complete my responsibilities.	0.889	53.940
	Innovative performance (Alpha = 0.875; CR = 0.915; AVE = 0.728)	I always create new ideas for improvement.	0.808	26.116
		I always mobilize support for innovative ideas.	0.890	64.197
		I always search out new working methods, techniques, or instruments.	0.841	41.184
		I always generate original solutions to problems.	0.875	52.260
<i>Construct level</i>		<i>Item</i>	<i>Loading</i>	<i>Sign.</i>
<i>2nd-order</i>	<i>1st-order</i>		(λ_i)	$(t\text{-value})$
(overall) Person-Environment fit	Person-Job fit (Alpha = 0.873; CR = 0.929; VIF = 1.109)	I have the right skills, abilities and knowledge for doing this job.	0.818	29.232
		There is a good match between the requirements of this job and my skills.	0.858	41.463
		My personality is a good match for this job.	0.861	44.335
		I am the right type of person for this type of work.	0.866	34.639
	Person-Group fit (Alpha = 0.789; CR = 0.929; VIF = 1.109)	The things our project team value in life are very similar.	0.752	19.623
		The things our project team value match my personal values and culture.	0.779	20.633
		The match is very good between the demands of the team tasks and my personal skills.	0.851	48.965
		My abilities and skills are a good fit with the requirements to perform within my project team.	0.738	28.704
	Person-Organization fit (Alpha = 0.853; CR = 0.929; VIF = 1.109)	My values match or fit the values of my project.	0.834	34.222
		I am able to maintain my values in my project.	0.837	43.115
		My personal values allow me to integrate into my project because they are in line with its values.	0.885	58.891
		My view of work culture corresponds to the work culture of my project.	0.775	29.836

TABLE A4 Second-order hierarchical measurement model results

<i>Construct level</i>		<i>Weight</i>	<i>Sign.</i>
<i>2nd-order construct</i>	<i>1st-order construct</i>	(λ_i)	$(t\text{-value})$
Person-Environment fit (VIF = 1.132)	Person-Job fit	0.497	20.253
	Person-Group fit	0.330	17.305
	Person-Organization fit	0.383	22.175

TABLE A5 Effects of separate SEM models for the individual P-E fit dimensions

	<i>P-O fit</i>	<i>P-G fit</i>	<i>P-J fit</i>
Task performance	0.327***	0.341***	0.581***
Innovative performance	0.196***	0.190***	0.337***

*** = significant at $p < 0.01$.

TABLE A6 Heterotrait-Monotrait ratio (HTMT) values for reflective constructs

	<i>P-E fit</i>	<i>P-G fit</i>	<i>P-J fit</i>	<i>P-J fit</i>	<i>Organizational temporariness</i>	<i>Task performance</i>	<i>Innovative performance</i>
P-E fit							
P-G fit	0.701						
P-J fit	0.858	0.115					
P-O fit	0.850	0.098	0.359				
Organizational temporariness	0.201	0.181	0.145	0.069			
Task performance	0.460	0.057	0.440	0.357	0.062		
Innovative performance	0.219	0.277	0.092	0.075	0.395	0.056	