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## Perceived project transition support and employees' assessments of entrepreneurial project performance



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### Executive summary

Successful corporate entrepreneurship requires firms to continuously start new entrepreneurial projects and, if unsuccessful, terminate them early to re-allocate employees to new projects or projects with more promising perspectives. While prior studies have investigated either how employees effectively exit terminated projects or enter newly started projects, they have neglected the possibility that the employees perceive these processes to be linked—that is, that employees experience a period of psychological project transition rather than separate psychological processes of project entry and exit. Taking a transition perspective on entrepreneurial projects is critical because employees' learning and application of new knowledge generated by their role in the *prior* project can impact the *new* project's performance. Further, the break up of the *prior* project team can diminish employees' affective commitment and engagement with their role on the *new* project.

The current study draws on organizational support theory to investigate how management can facilitate employees' transitions between entrepreneurial projects. Specifically, the current paper takes an individual-level perspective and defines **perceived project transition support** (PPTS) as an *employee's belief that the organization applies managerial practices to support his or her effective exit from one project and entry into another*. Investigating the relationship between PPTS and employees' feelings about, motivations for, and performance assessments of their subsequent project may challenge the prevailing view that employee support for a project can only start with their deployment to that project.

The analysis employs two studies. Study 1 develops a new psychometric scale—the PPTS scale—drawing on 49 interviews with employees who participate in industrial entrepreneurial projects, a survey of 274 employees who participate in entrepreneurial projects at a technical university, and a survey of 438 employees who participate in entrepreneurial projects at 42 R&D-intensive industrial organizations. Drawing on the PPTS scale and lagged data on 200 employees working on industrial entrepreneurial projects (out of the 438 employees in Study 1), Study 2 explores the consequences of PPTS for the employees' affective commitment, work stress, empowerment, and—ultimately—performance assessments of the next project. In doing so, the article provides the following key insights.

The first important insight from our study is that employees indeed perceive project exit and entry as part of one psychological transition process. Thus, our study challenges a central assumption of prior work on entrepreneurial projects—namely, that employees' experiences of prior project exit and subsequent project entry are independent of each other. We identify the following managerial practices that employees perceive as helpful during project transitions: (1) debriefing; (2) providing reflection time; (3) briefing; building a new project team employees (4) view as competent and (5) can relate to; and (6) organizing the transition process well. These practices influence employees' affective commitment to the organization, feelings of work stress, and psychological empowerment on the new project. Thus, the project transition phase is an important area for managing employees working on entrepreneurial projects.

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As a second insight, the study identifies novel antecedents of project performance in the corporate entrepreneurship context. While scholars have largely focused on critical success factors during the action phases of entrepreneurial projects and described project transition phases as “unproductive,” the study reveals that the perception of managerial support during prior project transitions can substantially influence an individual team member's feelings and attitudes about their current project and the firm and, in doing so, affect the subsequent project's performance. Thus, factors that influence project success in a corporate entrepreneurship setting are not limited to the beginning or action phase of the project but also include the termination phase of the previous project.

A third insight from the study is that the prevailing assumption that higher levels of perceived organizational support positively influence individual performance does not necessarily hold for the specific context of employees' transitions between entrepreneurial projects. The study finds that work stress mediates the relationship between PPTS and employees' performance assessments of their next completed project in a curvilinear manner and with a negative slope in the relevant PPTS value range. That is, more support diminishes stress so much that employees appear to be little motivated, which in turn diminishes project performance. The level of support employees receive from their organization should consider the specific support context in order to avoid the negative effects on employees of too much support.

## 1. Introduction

A key for successful corporate entrepreneurship in today's dynamic and global business environments is that firms continuously start new entrepreneurial projects and, if unsuccessful, terminate them early to re-allocate employees to new projects or projects with more promising perspectives (Li and Chi, 2013; McGrath, 1999). The corporate entrepreneurship literature has studied employees' exits from entrepreneurial projects and has found that due to high investments of time, effort, and energy into their project (Cardon et al., 2009) and their strong psychological connection with it (Shepherd et al., 2009), employees often experience negative emotions over the loss of an exited project, which decreases motivation and obstructs learning (Shepherd et al., 2014; Shepherd et al., 2011). Work in the innovation literature, on the other hand, has focused on how employees can successfully enter new projects by accessing important information (Hoegl and Schulze, 2005) and socializing with other project team members (Nonaka, 1994).

An important theoretical limitation of studies in both literatures is that they investigate prior project exit and new project entry, respectively, as separate psychological processes for employees. However, the processes of project entry and exit are likely inter-related because employees experience a period of transition between different work roles, where *transition* refers to “the psychological (and, if necessary physical) movement between roles including disengagement from one role (role exit) and engagement in another role (role entry)” (Ashforth et al., 2000: 472). Applied to entrepreneurial projects, a transition *begins* when an employee perceives that he or she is no longer involved in a project or that his or her role in the project will be terminated in the near future, while a transition *ends* when the employee believes that he or she is fully engaged in the next project. It appears that in the context of moving from one entrepreneurial project to the next, developing a theoretical understanding of transitions rather than separate entry and exit processes is important because the extent to which employees learn and apply new knowledge generated by their role in the *prior* project (McGrath, 1999) can impact the *new* project's performance (Gardner et al., 2012). Moreover, a transition perspective is theoretically important because the break up and dispersion of the *prior* project team can diminish employees' affective commitment (Shepherd et al., 2011), which can reduce engagement with their role on the *new* project.

We build on organizational support theory (Eisenberger et al., 2001; Kurtessis et al., 2017) to theorize on how management can facilitate employees' transitions between entrepreneurial projects. According to organizational support theory an employee's perception of the support the organization and its managers provide during the transition process is likely to have important repercussions for his or her feelings and motivations on the role in the new project, and, ultimately, how he or she assesses the performance of this project. Specifically, the current paper takes an individual-level perspective and defines **perceived project transition support** (PPTS) as an *employee's belief that the organization applies managerial practices to support his or her effective exit from one project and entry into another*. Investigating the relationship between PPTS and employees' feelings about, motivations for, and performance assessments of their subsequent project may challenge the prevailing view that employee support for a project can only start with their deployment to that project.

To investigate empirically how management can facilitate entrepreneurial project transitions to enhance the performance of the new project, we employ two studies. In Study 1, we develop a new psychometric scale—the PPTS scale—drawing on 49 interviews with employees who participate in industrial entrepreneurial projects, a survey of 274 employees who participate in entrepreneurial projects at a technical university (Sample 1), and a survey of 438 employees who participate in entrepreneurial projects at 42 R&D-intensive industrial organizations (Sample 2). In Study 2, we explore the consequences of PPTS on the employee's affective commitment, work stress, empowerment, and—ultimately—performance assessment of the next project using the PPTS scale, lagged data on 200 employees working on industrial entrepreneurial projects (out of the 438 in Sample 2), and structural equation modeling. In doing so we make three primary contributions.

First, while the extant literature on entrepreneurial projects has either focused on explaining how to set up new projects (Hoegl and Schulze, 2005; Nonaka, 1994) or terminate previous projects (Behrens and Patzelt, 2016; Corbett et al., 2007; Shepherd and Cardon, 2009; Shepherd et al., 2009), the theoretical insight from our study is that employees perceive project exit and entry as part of one psychological transition process. Thus, our study challenges a central assumption of prior work on entrepreneurial projects—namely, that employees' experiences of prior project exit and subsequent project entry can be studied independently. Further, we identify key managerial activities that employees perceive as helpful during project transitions, and we illustrate that these activities influence employees' affective commitment to the organization, feelings of work stress, and psychological empowerment on the new project. The project transition phase is an important area for managing employees working on entrepreneurial projects.

Second, we advance the discussion about antecedents of project performance in the corporate entrepreneurship context. Existing research has largely focused on critical success factors during the action phases of entrepreneurial projects (Hornsby et al., 2009; Hornsby et al., 1993; Kuratko et al., 2005; Ling et al., 2008; Monsen et al., 2010). Indeed, scholars have described project transition phases as “unproductive” (Kolisch and Padman, 2001) and theorized that they should be minimized (e.g., Brown and Eisenhardt, 1997; McGrath, 1999). We challenge these studies by finding that the perception of managerial support during project transitions can substantially influence an individual team member's feelings and attitudes about their current project and the firm and, in doing so, affect their assessments of their project's success. Thus, theorizing about factors that influence project success in a corporate entrepreneurship setting should not only start with the beginning of the project but when the previous project is being terminated.

Finally, by contextualizing the concept of perceived organizational support to the specific setting of entrepreneurial project transitions, we extend the boundaries of organizational support theory. Specifically, our results suggest that the prevailing assumption that higher levels of perceived organizational support positively influence individual performance outcomes (Kurtessis et al., 2017; Rhoades and Eisenberger, 2002) does not necessarily hold for the specific context of employees' transitions between entrepreneurial projects. We find that work stress mediates the relationship between PPTS and employees' performance assessments of their next completed project in a curvilinear and negative manner. An important theoretical implication is that understanding the impact of the support employees perceive from their organization (and specifically when too much support has negative effects on employees) is facilitated by a more contextualized approach.

## 2. Theoretical foundations

### 2.1. Employee's transition between entrepreneurial projects

We follow Shane and Venkataraman (2000) and view entrepreneurship as the *process of identifying, evaluating, and exploiting new business opportunities* independently of whether it takes place through founding an independent venture or within an existing organization. Specifically, we define entrepreneurial projects as *endeavors related to an organization's identification, evaluation, and exploitation of potential opportunities*. Although some work in the project management literature has focused on the study of entrepreneurial projects (e.g., Frederiksen and Davies, 2008; Huff, 2016), understanding how these projects are managed in different contexts and the effects of these management practices on employees who participate in the projects represents a key topic in the literature on corporate entrepreneurship (Phan et al., 2009). For example, scholars have studied managers' corporate venturing decisions to start and terminate entrepreneurial projects in the mining industry (Bakker and Shepherd, 2017), the superyacht industry (Jennings et al., 2015), and various R&D-intensive sectors (Behrens et al., 2014; Behrens and Patzelt, 2016; Corbett, 2007). This literature has also tried to understand how project managers' networks impact innovative outputs (Kelley et al., 2009). Finally, from an employee's perspective, corporate entrepreneurship scholars have investigated the decision to join entrepreneurial projects (Monsen et al., 2010) and the way project termination affects an employee's motivation and emotions (Shepherd et al., 2009; Shepherd et al., 2013).

For the purpose of this paper, we focus on employees in corporate innovation and R&D. This context fits Sharma and Chrisman's (1999: 18) definition of corporate entrepreneurship as “the process whereby an individual or a group of individuals, in association with an existing organization, create a new organization or instigate renewal or innovation within that organization.” Specifically, we focus on projects reflecting internal corporate ventures that aim to introduce new products or services to the marketplace (Sharma and Chrisman, 1999: 21), such as the development of new medical drugs and devices, novel technologies for the generation and provision of energy, software and hardware for the automotive industry, new chemicals for industrial purposes, and so on. Central entrepreneurial characteristics of these projects that are important for our theorizing include: (1) project transitions are common in R&D intensive industries (e.g., Shepherd et al., 2014; Shepherd et al., 2016); (2) projects in these industries show high outcome uncertainty (DiMasi et al., 2003); (3) R&D and innovation is particularly important for firms acting in dynamic environments (Garg et al., 2003; Heeley et al., 2006); (4) R&D and innovation typically take place under high time pressure (Sheremata, 2000); (5) employees often report extreme positive emotions when projects succeed (Gratzer, 2002) and extreme negative emotions when they fail (Clute, 2005); (6) employees' high engagement in these projects is central to the projects' success (Wolpert and Richards, 1997); and (7) learning from past projects is a crucial job requirement for scientists and engineers involved in innovation and R&D (Hunter et al., 2007).<sup>1</sup>

To complete successfully a transition from one entrepreneurial project to the next, an employee must master both *prior project exit* and *current project entry*. Each of these tasks comprises various challenges for the transitioning employee. First, when a team is dissolved after an entrepreneurial project is terminated or an employee exits a continuing project, the employee's work tasks and social relationships cease to exist in their current form, which can lead to the loss of some aspects of his or her identity and diminish well-being. For example, a project exit can diminish an employee's identity by disrupting his or her social relationships with other members of the team (Shepherd et al., 2014) and preventing him or her from successfully competing against other teams (Tjosvold et al., 2003) within and outside the organization. This form of competition can reinforce an employee's sense of team membership,

<sup>1</sup> Although we focus on R&D and innovation projects, we acknowledge that transitions also take place between other types of projects. Yet, we believe that the specific characteristics of entrepreneurial projects make project transition support particularly crucial. For example, since consulting projects are usually considerably restricted in time and focus on improving the performance of “other” organizations (McKenna, 2006), consultants' identification with their projects is likely lower (or at least potentially different) than R&D projects are for team members, thus easing transitions. Future research can explore the nature and implications of these project transitions—perhaps using the scale developed in the current study.

strengthening his or her identity. Indeed, anecdotal evidence (Shepherd et al., 2016) demonstrates that employees who participate in entrepreneurial project teams often perceive their work as “defining” them (p. 9); describe their social relationships as creating a “great team” that is “important for a project;” and admit that after project termination, it is “a pity that [they have] to be separated” (p. 15). Furthermore, project exit can terminate an employee's current learning on a specific topic and result in the feeling that project-specific competences built up over time are no longer as useful (Butler, 1992), both of which can undermine elements of the employee's work-related identity (e.g., as “the data expert” on the project) and psychological well-being (i.e., reduced feelings of competence (Deci and Ryan, 2000)).

Additionally, recent work on entrepreneurial projects has emphasized that to the extent employees perceive their projects as highly important to them, the termination of these projects leads to feelings of loss and the experience of negative emotions (Shepherd et al., 2009; Shepherd et al., 2011). These negative emotions can obstruct learning from exited projects because they interfere with employees' ability to remember and/or process information about the events leading up to the loss (Shepherd et al., 2011). These studies have also provided evidence of some period of transition and the ways employees experience it. For example, a study by Shepherd et al. (2014) on terminated engineering projects within a large industrial corporation found that project transitions sometimes involve terminations over an extended period of time, which employees experience as “creeping death.” This creeping death refers to the period when an employee's current project is not yet formally terminated but is already in the process of ending—for example, as one engineer reported about the last months of his project: “We lost half a year, in the sense that no one knew the direction the unit was heading.. . We had requirements, but no one knew which ones we should implement. As a result, ... we messed around for half a year” (Shepherd et al., 2014: 529).

Second, while there is less research on the starting phases of entrepreneurial projects, studies on both entry into new work roles (Bauer et al., 1998; Nicholson and West, 1988) and early phases of innovation projects (Nonaka, 1994; Nonaka and Takeuchi, 1995) have emphasized the importance of socialization for resolving uncertainties associated with new project settings. Effective transitions typically require that an employee adjusts to the new entrepreneurial project by effectively reducing the ambiguity associated with his or her role in that project. The employee needs to gather and process information about how to technically execute new project tasks in the expected and desired way as well as how to develop new team routines, systems, and processes (Morrison, 1995). To develop new team routines, systems, and processes, the employee also needs to gather and process information about the members that make up the team and the ways the team is going to operate in terms of expected (and desired) social interactions (Chao et al., 1994). Through learning after project entry, an employee can begin to resolve ambiguities about new work practices and the team as well as make sense of the new project setting (Nonaka, 1994). This process of socialization, “through which individuals learn the values, beliefs, norms, skills, and so forth that are necessary to fulfill their roles and function effectively within the local context and wider organization,” (Ashforth, 2001: 162) facilitates sensemaking about the work practices of newly entered projects. For example, in the early concept phase of a project, socialization and informal interaction between new team members facilitate the integration of diverse knowledge and expertise and the development of a shared understanding of a product idea and its objectives (Schulze and Hoegl, 2006).

In sum, during project transitions, an employee faces a number of challenges related to exiting his or her previous entrepreneurial project and adjusting to a new project. However, it is important to note that because we are interested in an individual employee's “psychological transition,” this transition may be different for each employee, and the exact beginning and end of a transition is difficult to determine even for the transitioning individual (e.g., when the individual believes he or she is fully integrated into the current project). Building on organizational support theory (Eisenberger et al., 1986), we theorize that perceptions of organizational support can help employees master the psychological challenges of transitioning from one project to another.

## 2.2. Organizational support theory

Organizational support theory assumes that an individual employee perceives the activities and practices performed by supervisors and organizational managers as reflections of the organization's intent instead of the supervisors'/managers' personal motives, thus personifying the organization (Kurtessis et al., 2017; Levinson, 1965; Rhoades and Eisenberger, 2002). Based on this personification, the employee develops a belief about “the extent to which the organization values his or her contributions and cares about his or her well-being” (Eisenberger et al., 1986: 500). Eisenberger et al. (1986) named this belief “perceived organizational support.” Importantly, organizational support theory assumes that the personification of the organization represents “an employee's distillation of views concerning all the other members who control that individual's material and symbolic resources” (Eisenberger et al., 1986: 500). That is, in developing the perception of organizational support, the employee does not distinguish between whether the support is due to his or her direct supervisor's decisions; top management's decisions; or the organization's culture, norms, or legal responsibilities (Rhoades and Eisenberger, 2002).

Eisenberger et al. (1986) made three assumptions that are important for our theorizing. First, as the name indicates, perceived organizational support is perceptive. That is, there is considerable heterogeneity in how employees perceive their organization and even the same objective support practices within their organization. For example, some employees may perceive a particular incentive scheme as adequate for their efforts and thus feel that the organization supports them (Rhoades and Eisenberger, 2002), whereas others may perceive the same incentive scheme as inadequate and non-supportive. Organizational support theory does not refer to the objective characteristics or practices that prevail in an organization but to the employees' perceptions of these characteristics and practices. Second, since perceived organizational support is based on employees' beliefs that the organization is generally more or less supportive of them, employees hold assumptions about the organization's behavior in a specific situation even if that situation has never happened. For example, even if employees have never made a serious mistake with severe consequences at

work, the perception of organizational support includes the belief that the organization would forgive them if such a mistake was to occur (Eisenberger et al., 1986). Finally, perceived organizational support is based on employees' beliefs about both favorable and unfavorable treatment by the organization. For example, beliefs about unfavorable treatment that diminish the perception of organizational support include the belief that the organization (1) would take advantage of an employee if it had the opportunity to do so; (2) would ignore the employee's complaints; or (3) given the opportunity, would hire somebody for a lower salary to replace the employee (Eisenberger et al., 1986; Eisenberger et al., 2002).

While perceived organizational support represents employees' global beliefs about their organization's overall treatment of them, it has not been conceptualized to provide insights into specific work contexts, such as transitions between entrepreneurial projects. However, these contexts may entail particular organizational practices that are context specific and therefore are not adequately reflected in employees' global perceptions of organizational support. Indeed, the literatures on corporate entrepreneurship and innovation provide initial indications that an employee may perceive context-specific managerial practices as supportive of his or her effective transitioning between projects. For example, studies have described that during project entry, briefing sessions can be used as a means to help "experienced employees pass on their knowledge and experiences from prior projects to team members of the current project or the newly-begun project" (Hoegl and Schulze, 2005: 268). Participating in these briefing activities may help an employee resolve ambiguity associated with a new entrepreneurial project. In terms of unfavorable treatment that may diminish perceptions of project transition support, a study of research scientists in a university setting found that providing insufficient time for an individual to reflect on an exited project obstructs the employee's learning from the experience and commitment to the organization (Shepherd et al., 2011). Finally, the way organizational managers compose project teams is a critical factor influencing an employee's perception of organizational support (Bashshur et al., 2011; Kennedy et al., 2008) and may play a key role in shaping his or her perception of support during project transitions. Although these studies provide initial evidence of employees experiencing various types of support during their project transitions, there has not yet been an attempt to identify systematically the range of relevant factors that constitute an employee's perception of transition support.

### 3. Hypothesis development: Consequences of perceived project transition support for employees and project outcomes

Organizational support theory has invoked two key perspectives to explain how perceived organizational support impacts employee's feelings and attitudes at work: social exchange and self-enhancement (Kurtessis et al., 2017). Based on social exchange and self-enhancement perspectives, studies have illustrated that perceived organizational support enhances employees' attitudes towards their organization and improves their emotional well-being, which in turn leads to employee behaviors that benefit the organization (see reviews by Kurtessis et al., 2017; Rhoades and Eisenberger, 2002). While social exchange is reflected by employees' affective commitment to the organization, self-enhancement can either work through meeting employees' socioemotional needs or increasing their feelings of competence. We will now employ these perspectives of organizational support theory to develop hypotheses on the impact of perceived project transition support (PPTS) on employees of entrepreneurial projects and these projects' outcomes.

#### 3.1. PPTS, social exchange, and project performance

According to the social exchange perspective of organizational support theory employees trade effort and loyalty for the organization's provision of tangible and social benefits (Cropanzano and Mitchell, 2005). Based on this argument, the more employees perceive that their organization supports them by treating them favorably, the more they will contribute to the organization and help to reach its goals (Eisenberger et al., 1986; Rhoades and Eisenberger, 2002). This reciprocation is based on (1) the employees' felt obligation to reciprocate the organization's favorable treatment; (2) an increased incorporation of organizational membership into the employees' social identity due to the caring, respect, and approval they have experienced; and (3) an increased feeling that the organization recognizes and compensates the employees' efforts (Rhoades and Eisenberger, 2002).

Eisenberger et al. (1986) theorized that perceived organizational support reflects an organization's commitment to the employee, who then reciprocates this commitment to the organization. That is, a felt obligation from perceptions of organizational support should enhance employees' affective commitment (Eisenberger et al., 2001). Affective commitment refers to an employee's identification with, involvement in, and emotional attachment to his or her organization (Allen and Meyer, 1990). An employee who experiences challenges in transitioning from a previous entrepreneurial project to a new project is unlikely to develop or maintain high commitment. For example, when project exit disrupts an employee's work identity (e.g., as the "data expert" on the project) and he or she is unable to restore this identity via a new project, the employee is likely to experience a decrease in personal career commitment (e.g., as a scientist, Chemers et al., 2011) and reduced affective commitment to the organization (Mathieu and Zajac, 1990). Furthermore, ambiguity with a new entrepreneurial project represents a threat to a transitioning employee's affective commitment (Meyer et al., 2002). With perceptions of unclear task specifications and expectations, the employee is unable to understand how his or her work efforts are related to achieving organizational goals (Chao et al., 1994). Without understanding the value of their work for the organization, employees find it difficult to identify with and adopt organizational norms and values, which are a prerequisite for developing affective commitment (Klein and Weaver, 2000).

However, an employee who perceives support when transitioning to a new entrepreneurial project will likely increase or maintain his or her affective commitment to the organization based on social exchange and reciprocation. For example, an employee who is provided opportunities to learn from an exited project can increase both personal and organizational knowledge. Being provided these learning opportunities signals to the employee that the efforts he or she has invested into that exited project are valuable for both him or her personally and for the organization (even if the project has not been successful). That is, the employee perceives that

the organization recognizes his or her efforts and compensates for them by providing opportunities for learning (and thus personal growth). Based on reciprocity, this perception of recognition and reward enhances the employee's affective commitment (Rhoades and Eisenberger, 2002). Further, being allocated to a new team that the employee believes is competent and has relatable team members signals that the organization cares about the employee's work environment. Specifically, being allocated to a new team that the employee perceives as competent can serve as a signal to the employee that the organization respects his or her own competencies and skills, and being allocated to a team with members the employee can relate to signals that the organization cares about the employee's emotional well-being. To the extent the employee reciprocates this favorable treatment by his or her organization, affective commitment increases (consistent with Eisenberger et al., 1986). Thus, we propose the following:

**Hypothesis 1a.** There is a positive relationship between the PPTS an employee experiences when moving from a prior entrepreneurial project to a new entrepreneurial project and the employee's affective commitment to the organization.

Consistent with organizational support theory, we also expect that through affective commitment, PPTS will impact the success an employee ascribes to his or her subsequent entrepreneurial project after its completion (cf. Kurtessis et al., 2017). Committed employees represent a valuable resource for high project performance. Specifically, affective commitment, generated by PPTS, influences the employee's behavioral and work outcomes on the current project, and these behavioral and work outcomes can substantially contribute to the project's success. When reciprocating PPTS, affectively committed employees are willing to “give energy and loyalty to the organization” (Kanter, 1968: 499) and invest effort and knowledge to achieve organizational goals (O'Reilly and Chatman, 1986). That is, the reciprocation of PPTS triggers these personal investments, and with higher investments of affectively committed employees the likelihood that the project succeeds increases. Indeed, entrepreneurial projects will not only profit from affectively committed employees' amount of work invested, but also because the delivered work is likely of higher quality. For example, affectively committed employees tend to achieve higher ratings from their supervisors with respect to individual performance, task performance, promotability, and future potential (Meyer et al., 2002; Shore et al., 1995).

Project performance may also be increased by PPTS because by triggering greater affective commitment, the reciprocation of PPTS can motivate employees to invest extra effort beyond formal work tasks, including the support of other members on the project team (Belschak and Den Hartog, 2009). In an entrepreneurial project setting, these actions might include helping others with challenging project tasks, taking over responsibilities for coordinating and managing the new project or parts of it, and organizing social events that create an enjoyable social environment at work that motivates not only the focal employee but also other project team members to invest their effort and resources into the project. These activities enhance the likelihood that the overall project will reach important goals (Podsakoff et al., 1997). Thus, we propose the following:

**Hypothesis 1b.** Through affective commitment to the organization, the PPTS an employee experiences when moving from a prior entrepreneurial project to a new entrepreneurial project is indirectly and positively related to the employee's assessment of his or her new entrepreneurial project's performance after its completion.

### 3.2. PPTS, self-enhancement, and project performance

As a second perspective organizational support theory draws on self-enhancement to argue that employees who perceive organizational support contribute more to their organization (Kurtessis et al., 2017). In particular, the first important way perceived organizational support triggers self-enhancement is by helping employees meet their socioemotional needs (Kurtessis et al., 2017) when they face difficult and threatening situations at work (Armstrong-Stassen, 1998); that is, situations that cause high levels of work stress for the employee. Work stress refers to “a sense of time pressure, anxiety, and worry that is associated with job tasks” (Hunter and Thatcher, 2007: 954). High levels of work stress can emerge from “excessive or undesirable constraints that interfere with or hinder an individual's ability to achieve valued goals (demands that produce distress)” (Cavanaugh et al., 2000: 67). More specifically, uncertainty can create high stress (Lepine et al., 2005) and is typically experienced by individuals during work-related transitions (Ashforth, 2001), such as those between entrepreneurial projects. To the extent employees do not know or understand their role on a new project or within the organization during project transitions, they might be anxious and worried that they cannot live up to the expectations of other team members or of the organization. Second, because they often break up social relationships between members on entrepreneurial project teams, transitions diminish impacted employees' ability to manage their psychological and emotional needs (Lee and Robbins, 1998). In turn, without support from an established social environment, employees may feel stressed about their current project because they believe they do not have the psychological and social resources needed to meet expectations for that project.

PPTS likely reduces an employee's feelings of stress associated with entering a new entrepreneurial project by helping meet socioemotional needs during the transition. Specifically, approval is an important socioemotional need that organizational support can address (Rhoades et al., 2001). In the context of project transitions, the organization can, for example, communicate in a way that commends the employee's achievements on the exited project even if that project has been a failure. Feeling approval will diminish the anxiety and worry that the employee associates with the new project because it signals that he or she will also be able to perform well in the future. Further, perceived support during project transitions can address an employee's socioemotional needs by building confidence that the transition can be successfully mastered (Rhoades and Eisenberger, 2002). For example, learning from one's prior project as well as gaining access to information about one's new project and perceiving that one's new project team can successfully master upcoming challenges will reduce an employee's anxieties and worries that the new project goals cannot be met, thus diminishing feeling of stress. Finally, perceived organizational support can help to address the socioemotional needs for affiliation

(Rhoades et al., 2001) and social support (Kurtessis et al., 2017). When transition support enables an employee to build positive and supportive relationships with new team members, the employee is more likely to meet these needs. This employee is more likely to feel that he or she can manage the psychological and emotional challenges (Lee and Robbins, 1998) associated with project transition and is thus likely to perceive less stress. Thus, we put forth our next hypothesis:

**Hypothesis 2a.** There is a negative relationship between the PPTS an employee experiences when moving from a prior entrepreneurial project to a new entrepreneurial project and the employee's feelings of work stress.

An employee's feelings of stress are likely to mediate the relationship between PPTS and his or her assessments of the current project's performance once completed. However, we expect this mediating effect to be more complicated than the mediating effect of affective commitment, and in particular, we expect it to work in a curvilinear way. That is, our theorizing suggests that it is not employees with a minimum or maximum stress level who are the most valuable resource for an entrepreneurial project, but rather those with a medium level of stress.

First, an employee who enters a new entrepreneurial project often perceives ambiguity about his or her role and tasks on this project as well as the project's goals (Shepherd et al., 2014). With no (or minimal) transition support this employee is likely to have unmet socioemotional needs and feel high stress levels due to the belief that he or she cannot contribute to the project's ambiguous goals independent of the effort invested. Such employees are likely to be demotivated and invest minimal effort (Lepine et al., 2005), which decreases the probability that the new project will meet its goals. Further, high stress levels based on unmet socioemotional needs from very low PPTS can also negatively impact an employee's learning on his or her new project (Lepine et al., 2004). With slow and overall little learning on the new project due to high stress levels, employees are unlikely to be a valuable resource because they are unable to effectively perform their tasks on their new project, and therefore cannot substantially contribute to the project's performance. Given that PPTS can help resolve ambiguity on the new project and trigger learning from the prior project, we expect that PPTS will be positively associated with an employee's assessment of project performance by preventing stress levels from becoming too high.

From a certain point on, however, we also expect the positive relationship between PPTS and project performance as mediated by work stress to diminish and eventually to become negative. That is, we expect that beyond a certain point, higher levels of PPTS will indeed reduce the contribution employees make to their new project's success, thus rendering them an increasingly less valuable resource for the project. Specifically, when high PPTS largely fulfills employees' socioemotional needs already and stress levels become rather low as a result, these employees may lack the necessary motivation for high individual performance. When stress is diminished by the perception that the project's goals are easily met, employees are unlikely to initiate coping behaviors in the form of extra effort directed to make the project successful (consistent with Folkman and Moskowitz, 2004). This form of problem-focused coping seems to be particularly beneficial for work contexts where employees have high levels of autonomy (Karasek, 1979), which is typical of entrepreneurial projects (Burgelman, 1983; Zahra, 1993). That is, these employees are unlikely to perform well on their new entrepreneurial project, diminishing the likelihood of the project reaching important goals. Similarly, when employees feel quite low stress because they perceive an overly supportive organization (based on high PPTS), they may not contribute high effort to their project because they expect supporting others to compensate for their own lack of effort (Harkins and Petty, 1982). With less effort invested by the employees, their value for the project decreases, and the project's performance is likely to suffer. Finally, low stress can direct employees' attention away from the most urgent and central project tasks (Kahneman, 1973). That is, when PPTS reduces stress too much, employees may not perceive the necessity to focus their immediate attention on the most important aspects of the project; rather, these employees are likely to engage in tinkering that does not move the project forward. Thus, we hypothesize the following:

**Hypothesis 2b.** Through feelings of stress, the PPTS an employee experiences when moving from a prior entrepreneurial project to a new entrepreneurial project is indirectly and in a curvilinear (inverted U-shaped) manner related to the employee's assessment of his or her new entrepreneurial project's performance after its completion.

The second important way how PPTS can trigger employees' self-enhancement is by helping them meet their needs for competence through increasing the likelihood that they will master difficult tasks and situations (Rhoades and Eisenberger, 2002). For employees on entrepreneurial projects, met competence needs are reflected in their feeling of psychological empowerment, which refers to a "cognitive state characterized by a sense of perceived control, competence, and goal internalization" (Menon, 2001: 161). More generally, psychological empowerment has been conceptualized in terms of meaning (i.e., the value of a work goal or purpose judged in relation to an individual's own ideals or standards), competence (or self-efficacy—namely, the belief in one's ability to perform activities with skill), impact (i.e., the extent to which one can influence important work outcomes), and self-determination (i.e., autonomy in the initiation and continuation of work tasks) (Spreitzer, 1996). Unsuccessful project transitions can threaten employees' feelings of empowerment in their current entrepreneurial project. For example, if a transitioned employee has little understanding of why he or she was assigned to a new project with new tasks, the employee might believe that these tasks have an external locus of causality and thus he or she has little control over them (Gagné and Deci, 2005). Further, the employee can have difficulty deriving meaning from his or her new project when the expectations for that project are not clearly formulated (see Ashforth, 2001: 55). For example, if tasks on a new entrepreneurial project are ill specified, the employee will not be able to autonomously break them down into sub-tasks and perform them in ways he or she views as most effective and in line with his or her expertise and available resources. Such an employee is unlikely to meet his or her needs for competence on the new project and feel little empowerment.

Organizational support practices, however, can trigger feelings of empowerment on the new project. If an employee perceives that

the organization supports project transitions by communicating and explaining why he or she had to exit from the prior entrepreneurial project and why he or she was allocated to a new project (Hoegl and Schulze, 2005; Vashdi et al., 2007), the employee is likely to make sense of the transition and understand its role for achieving organizational goals. Through enhanced sensemaking, the employee's needs for competence are better addressed, and the employee will attribute more value and purpose (i.e., meaning) to his or her new project. Further, PPTS-facilitated learning from one's prior project as well as gaining access to information about one's new project and perceiving that one's project team is highly competent can help satisfy an employee's needs for competence because he or she feels that achieving the new project's goals is indeed possible. With higher perceptions of competence based on PPTS, the employee may also feel less uncertainty about how he or she can use their skills, experience, and knowledge to contribute to their new project's success. Indeed, Spreitzer (1995, 1996) found that access to information and low role ambiguity are important antecedents to developing feelings of empowerment. Further, with PPTS, an employee is likely to feel socially supported as he or she is enabled to effectively end social bonds from the previous project team and create new bonds in the current project. To the extent the employee perceives these social bonds as sources of information and capabilities that help him or her meet their competence needs, he or she will feel empowered in the new entrepreneurial project (Logan and Ganster, 2007). Thus, we propose the following:

**Hypothesis 3a.** There is a positive relationship between the PPTS an employee experiences when moving from a prior entrepreneurial project to a new entrepreneurial project and the employee's feelings of empowerment.

High levels of empowerment, as facilitated by high PPTS, affect how employees approach work on their current project and therefore the likelihood that this project will succeed. For example, when more PPTS enhances employees' empowerment, they are likely to be more willing to take risks and accept uncertainty (Spreitzer, 1995) related to an entrepreneurial project (McGrath, 1999) and thus increase the effort (Seibert et al., 2011) they put into these projects. With increased effort on behalf of the employees, the achievement of their new project's goals is more likely. Further, when transitioning into a new entrepreneurial project, employees often face ill-defined structures and complicated problems with no easy or established solution. Such problems require the employees to engage in creative behaviors to better specify the problem, search and encode novel information, and come up with solution ideas and alternatives (Reiter-Palmon and Illies, 2004). When PPTS addresses the employees' competence needs and they perceive the project to be more meaningful, the employees will invest more effort in acquiring diverse information and generating the multiple perspectives and alternative solutions (Gilson and Shalley, 2004) required for framing and solving the problems associated with their new project. These increased efforts will enhance the employees' value for making the project a success. In addition, when PPTS increases feelings of empowerment by triggering the perception of social support, a project's employees are more likely to persist with a problem or an idea (Spreitzer, 1995). Such employees are also more likely to think innovatively (Bhatnagar, 2012) and play with ideas (Amabile et al., 1996), both of which are important for addressing the complex problems of entrepreneurial projects (Perry-Smith and Coff, 2011) to achieving the projects' goals. This leads to our final hypothesis:

**Hypothesis 3b.** Through feelings of empowerment, the PPTS an employee experiences when moving from a prior entrepreneurial project to a new entrepreneurial project is indirectly and positively related to the employee's assessment of his or her new entrepreneurial project's performance after its completion.

To test our hypotheses, we employ two empirical studies. In the following Study 1, we develop and validate the perceived project transition support (PPTS) scale as a measure of employees' perceptions of an organization's support during project transitions. In the subsequent Study 2, we use the PPTS scale for hypotheses testing.

#### 4. Study 1: Development of the perceived project transition support scale

We develop the PPTS scale following a rigorous scale-development process (MacKenzie et al., 2011). We start out with a qualitative study based on interview narratives (Yin, 2008) to identify potential dimensions of project transition support that employees perceive. Using these interviews, we generate potential items for the PPTS scale. We then use statistical procedures to reduce the number of items. We validate our scale with different samples.

##### 4.1. Identification of project transition support dimensions

###### 4.1.1. Interview data and analysis

We obtained the qualitative data of this study from 49 semi-structured exploratory interviews with employees of project teams from 10 large corporations in R&D-intensive industries (i.e., mechanical engineering, electronics, automotive, transportation, defense and security, pharmaceuticals, energy, optics) in a German metropolitan area. We identified potential firms and interviewees based on personal relationships, convenience, and snowballing techniques (Miles and Huberman, 1994) under the premise that interviewees were located in sufficient proximity to the first author's location to allow for in-person interviews. The average interview lasted about 1 h (some were as long as 2 h). We recorded and then transcribed the interviews. Interview questions covered how project employees experienced exit from their prior project, entry into their new project, the transition period between the two projects, and the role of the organization and its managers in this transition process. The focus was on employees' perceptions of the transition and the type and level of perceived organizational support (if any) for the transition. The interviewees were 40.1 years old on average, 95% were male, and 43% had managerial responsibilities (the rest were at the employee level). The interviewees had substantial project experience: on average, they had worked on 15 projects.

Once the interviews were complete, we employed microanalysis (i.e., detailed line-by-line coding) to uncover key concepts

(Strauss and Corbin, 1998). We used a multi-stage coding process and approached the interview transcripts with an open mind. In a first step, we coded the transcripts into segments of potentially relevant categories. The specific focus of this initial coding was on identifying potential organizational support practices during the transition process as perceived by employees. Importantly, some employees reported only their personal experiences during their prior transition, but others also reported practices related to general policies within their organization or practices they had observed or heard about within their organization but did not experience personally. Since the purpose of the qualitative study was to gain a broad overview of employees' perceptions of potential transition support practices, all reported practices served as a basis for scale development. Our final construct included dimensions related to both favorable and unfavorable aspects of transition support, which we detail below. Two researchers independently coded the interviews to enhance reliability and ensure we captured all relevant perceived practices. If there was initial disagreement between the two coders, they discussed the coding until reaching agreement. In the second step, to refine the identified categories, we compared them to the existing literature on entrepreneurial project terminations, project starts, and work-related transitions and the literature on perceived organizational support. In the third step, we went back to the interviews, re-read them, and re-coded the data. We repeated this iterative process until it no longer yielded any new information.

#### 4.1.2. Interview results

Our interview data (in combination with the existing literature) yielded six distinct dimensions of PPTS. Two of these dimensions were related to exit from the prior entrepreneurial project (i.e., debriefing at project end and reflection time), three were related to entry into the new project (i.e., briefing before project entry, fostering the perception that the prospective project team has the competence to master the new project's tasks, and fostering the perception of high relatedness among members of the new project team), and one was related to the overall transition (i.e., process organization). Moreover, while four dimensions captured favorable aspects of transition support (i.e., debriefing, briefing, perceived prospective team competence, perceived prospective team relatedness), two dimensions (i.e., reflection time, process organization) reflect unfavorable aspects because employees complained they were missing from the transition. In what follows, we describe these different dimensions and illustrate them with exemplary quotes from the interviews.

First, debriefing sessions involve “sharing experience among project participants and enhancing the personal learning of each individual as the chief goals” (Von Krogh, 1998: 145). For example, one employee we interviewed from the R&D department of a defense and security company described the standards for terminating projects as follows:

In our company, there is a clearly defined process, namely, lessons learned. This includes all employees and means that a review will be held at the end of a project. Hereby, everyone has the chance to express where he or she sees opportunities for improvement and where there are things which have not gone well and which should be done differently.

Other interviewees reported various formats and processes to capture lessons learned, including module books, workshops, best-practice meetings, post-mortems, post-project reviews, databases, and checklists. These tools served to cover “a review of the project goals and whether they were met, the individuals' experiences with working relationships, the key lessons learned by the individuals and by the team as a whole, the new methods and tools resulting from the project, the quality of the leadership exercised, as well as the knowledge and best practice(s) to be transferred to other teams” (Von Krogh, 1998: 145). For the interviewees, debriefing provided a structured and supportive context for the purpose of raising issues and discussing “what ifs,” including potential solutions (Eddy et al., 2013; Vashdi et al., 2007).

Second, transitions can be organized to grant sufficient *reflection time*—namely, time employees may use to think about the previous project outside formal debriefing sessions in order to make sense of their experience. In our interviews, we found that reflection time was either used by exiting project employees on their own (i.e., self-reflection) or in informal group settings. When reflection time was limited, interviewees complained about this lack of time to reflect on their exited project. For example, an automotive engineer described the typical time for learning after project exit in his company: “Out of one project and into the next one. And then ‘sink or swim.’” Similarly, another engineer in the automotive industry noted the following:

Learning and reflection at the end of a project would not be bad and is discussed [in our organization] from time to time. However, it is not done in reality... When one project has ended, one does not look back anymore.

We found that various interviewees indicated a lack of sufficient time for reflection to make sense of their exited project and codify some of the lessons learned. Additionally, insufficient reflection time may diminish employees' propensity for “learning to learn” (Hayes and Allinson, 1998) and is consistent with less effective disengagement from one's previous project (Elsbach and Bhattacharya, 2001; Kramer, 1993).

Third, other interviewees described the use of briefing sessions upon project entry, in which management provided information about the project's goals and scope, introduced team members and highlighted their expected roles within the project, allocated tasks, and illustrated the role of the project within and for the organization as a whole. The contents of briefing session were often summarized in presentations, documents, and folders, which were available to the employees who were new to the team. For example, an employee of an electrical engineering company described a typical briefing session:

[My previous] projects have started usually with a kick-off meeting that the project leader invites future team members to and where he presents the project for the first time, including the project's scope. On the one hand, the team gets to know each other, and on the other hand, tasks are assigned. And then, it is about fulfilling all points according to the timeline.

Therefore, briefing sessions before a new project starts help facilitate employees' transfer of knowledge and experiences from prior projects to members of the current project (Hoegl and Schulze, 2005). Furthermore, briefing ensures that employees who are part of the team are all “on the same page” in terms of what needs to be done, how it will be done, and who needs to do it (Hoegl and Schulze, 2005; Vashdi et al., 2007), thus reducing uncertainty with respect to the entered project (Feldman and Brett, 1983).

Fourth, since transitions from one project to the next usually involve a change in team composition, employees make assessments about the attributes of their new team. Specifically, employees new to a project team form beliefs about *prospective team competence*, which refers to the degree to which an employee perceives that prospective team members have the “right” competencies to accomplish the assigned team tasks. In our interviews, this belief emerged as a factor contributing to employees' perceptions of organizational support during project transition. For example, the importance of prospective team competence was emphasized by an employee from the energy industry: “And if a new project starts, the expert is usually part of the [new] team.. . Topic fields and responsibilities are exactly defined.” Other interviewees defined prospective team competence in terms of having a set of different educational backgrounds or having more experienced colleagues for tasks that appear to be particularly difficult and critical upon project start. Perceptions that managers compose teams with high competence enables employees to better understand their role in a new project and to view the project as important for the organization, which is a prerequisite to effectively adjust to their new role and project. This finding is consistent with research showing that individuals' perceptions of their team's competence influence their emotions at work (Omorede et al., 2013), their work identity (Scott, 1997), the effort they invest at work (Plaks and Higgins, 2000), and their creativity (Levine et al., 2003).

Fifth, prospective relatedness with other members of one's new project team also emerged as a supportive element of project transitions. Specifically, we define prospective team relatedness during project transitions as employees' feelings of connection to their prospective project team and the expectation that there will be a reciprocal caring relationship among project team members. Interviewees explained that high levels of relatedness with other project team members upon project start facilitated regular meetings, enabled team members to handle difficult (project) phases together, and encouraged team members to attend lunch and social events together. For example, an employee we interviewed described the relatedness among his team as follows: “The everyday interaction within the team is really important... We have ties of friendship in the team; trust each other; and, once in a while, enjoy a drink together after work.” In a similar vein, Schulze and Hoegl (2006) stated that informal exchanges of information are important for (tacit) knowledge exchange in early project phases, and Spencer and Spencer (2008: 9) posited that relatedness between employees is “an underlying characteristic of an individual that is causally related to... effective and/or superior performance in a job.” Similarly, it is known that newcomers' social relationships with prospective teammates impact their integration into and acceptance by the new team (Levine et al., 2003), their performance in their new role (Chen and Klimoski, 2003), and the level of stress they experience during the integration period (Allen et al., 1998).

Sixth, our interviews also revealed substantial differences in how effectively transitions were organized. More specifically, employees frequently described low levels of organization and inadequate structure during the transition process, which they perceived as unfavorable treatment by their organization. For example, one interviewee from the mechanical engineering industry reported the following:

I transitioned to the new project out of necessity... At that time, there was no personnel [in the organization] available for the new project. Therefore, the management just assigned me to the project. My boss had asked me, though, whether I could imagine working for the new project. However, there was just a need for personnel. I asked for a training period and started to work immediately.

Other interviewees described transitions as “chaotic,” complained about a lack of control and planning, and emphasized the need for more “efficiency.” These perceptions generated beliefs among some interviewees that their organization does very little to support employees as they transition from one project to the next.

In sum, our interview study, supported by the existing literature, identified debriefing, reflection time, briefing, prospective team competence and relatedness, and process organization as conditions that employees perceive as support by their organization during project transitions.

#### 4.2. Scale item generation

Based on the insights of our interviews, we developed the PPTS scale, which is suited to assess the extent to which project employees perceive organizational support for their transitions from one project to the next. Our finding that the larger themes discovered within the interviews aligned with components of transition support previously described in the literature reinforced the face validity of the dimensions of our new construct. Furthermore, interview respondents' perspective that these dimensions are all thematically linked to a common underlying organizational factor helps substantiate our perspective that PPTS is a concept that manifests in the distinct sub-dimensions we detailed earlier. That is, while all six dimensions of PPTS are distinct, they represent manifestations of a larger underlying construct—employees' perceptions of how their organization (including the managers representing their organization) support their transition from one entrepreneurial project to the next. Thus, the dimensions together represent a superordinate construct (Edwards, 2001) in that each dimension serves as a reflective observation of the underlying construct. Therefore, for PPTS, we modeled both first-order and second-order relationships as reflective measures, with individual items loading on their relative first-order sub-dimension, and the six first-order sub-dimensions loading onto a single second-order latent construct. This approach is consistent with the perceived organizational support scale (Eisenberger et al., 1986; Rhoades et al., 2001), which is modeled as a reflective construct. Furthermore, recent research regarding organizational support has re-conceptualized the original survey measure as a multi-dimensional construct (Kraimer and Wayne, 2004), with all sub-dimensions modeled as reflective of a single underlying latent construct. This provides additional theoretical support for our conceptualization of PPTS as a reflective, rather than a formative, construct.

We discussed the potential items and the theoretical definitions of each construct with project management and entrepreneurship experts—namely, five industrial managers of entrepreneurial projects and six academics (i.e., three professors and three advanced PhD students who were all actively conducting research in the area of entrepreneurship and innovation). These discussions led to a

review and refinement of the original items. We instructed the experts to indicate the items they believed accurately and sufficiently tapped into only the core construct to which they had been tentatively assigned and were not contaminated or deficient in any way. We deleted the contaminated and deficient items from the survey instrument. In addition, we only used items when at least eight out of the 11 experts agreed that they accurately reflected the construct of interest. This process yielded 15 items for debriefing, seven items for reflection time, 13 items for briefing, 13 items for prospective team competence, 15 items for prospective team relatedness, and 16 items for process organization. We used a seven-point Likert-type response scale to capture the extent to which a respondent agreed with the item statements about the transition from their previous project to their current project.

#### 4.3. Samples and scale properties

To develop the PPTS scale, we followed Hinkin's (1998) recommendation and exposed the scale to multiple independent samples. First, we used a sample of 274 employees, who were members of entrepreneurial research projects at a university, to pretest and refine the scale. We then used a second sample of 438 employees who were members of entrepreneurial projects at firms in R&D-intensive industries for further item refinement and scale validation. We describe these samples in detail in Appendix A.

In further developing the PPTS scale, we followed established multi-step procedures with respect to (i) defining the measurement model and determining fit of the developed scale, (ii) testing for convergent validity, discriminant validity, and social desirability, (iii) examining the scale's nomological network, and (iv) testing for the possibility of transient error. We report the results of these analyses in Appendices B–E. The results illustrate that the PPTS scale shows acceptable item reliabilities and goodness-of-fit statistics for the measurement model. Further the PPTS scale shows sufficient reliability, convergent validity, and discriminant validity. Moreover, the PPTS scale fits within a nomological network, and shows acceptable transient error. Overall, the final, reflective PPTS scale consists of six factors and a total of 24 items: debriefing (five items), reflection time (three items), briefing (five items), prospective team competence (four items), prospective team relatedness (three items), and process organization (four items). Moreover, consistent with the perceived organizational support scale, the PPTS scale contains both favorable and unfavorable elements of perceived support. In Table 1, we present the final scale dimensions, items, and reliabilities.

### 5. Study 2: Hypotheses testing

In Study 2, we now explore the consequences of PPTS for employees and their assessment of their next completed project's performance. The purpose of Study 2 is to provide evidence that similar to perceived organizational support, PPTS yields benefits for both the individual employee and his or her organization as organizational support theory would predict.

**Table 1**  
PPTS scale dimensions, items, and reliabilities.

Construct	Item	Description	Alpha Scale
1 Debriefing	D1	There was an open discussion about what had happened with the previous project.	0.90
	D2	The organization took formal steps to debrief me.	
	D3	Managers requested that I provide them feedback on the previous project.	
	D4	Managers sought my opinion about how to improve a project's chance of success.	
	D5	Managers were interested in the "lessons learned" from my experience with the previous project.	
2 Reflection time	TL1	I wish I had time to document the mistakes that we made with the last project. (R)	0.89
	TL2	I wish I had time to document the things that we did well with the last project. (R)	
	TL3	I still have not had time to think about the last project in order to learn from it. (R)	
3 Briefing	B1	I had all the important information needed to prepare myself for the new project.	0.91
	B2	I felt that managers told me all I needed to know about my role in the new project.	
	B3	I felt that there was clear communication about the nature of the tasks required of me by the new project.	
	B4	After an exchange of ideas about the project with management (manager/supervisor), I felt I knew what was expected of me.	
4 Team competence	B5	Management gave me a good overview about the environment of the new project.	0.91
	TC1	Management assigned the "right" team members to the project to allow it to perform well.	
	TC2	I felt that we had a team with the necessary skills to perform well on this project.	
	TC3	I felt that we had a team with the necessary experience to perform well on this project.	
5 Team Relatedness	TC4	I felt that we had a team with the necessary knowledge to perform well on this project.	0.76
	TR1	I felt that I would be very much at ease with the other new team members.	
	TR2	I felt that I would become connected to the new project team.	
	TR3	I felt that I would become very comfortable with the other members of the new project team.	
6 Process Organization	E1	I felt that management gave little thought about how to effectively manage the transition. (R)	0.86
	E2	The transition process was unorganized. (R)	
	E3	This was a very haphazard transition. (R)	
	E4	The transition was wasteful. (R)	

## 5.1. Methodology

### 5.1.1. Sample

To capture employees' assessments of current entrepreneurial project performance once completed, we asked the 438 participants of Sample 2 (described in [Appendix A](#)) to indicate the expected end date of the project on which they were currently working. After this date, we contacted each participant again and asked if his or her entrepreneurial project had ended. If the project had ended, we invited them to fill out a follow-up survey about their project's performance. If the project had not been finalized, we rescheduled the invitation for the day after the revised estimated project completion date. The final deadline for participation in this follow-up survey was January 1, 2014. In sum, 200 employees (out of the 438 original participants) nested in 42 organizations from the original survey participated in the follow-up survey, representing a response rate of 45.7% in terms of those who had participated in the original survey. Of the 238 employees who did not participate in the follow-up survey, 139 had not yet finalized the focal project. The remaining 99 either did not want to participate anymore or had left their firm. The composition of the final sample of 200 employees was highly similar to that of the 438 participants of the original survey. Second-round participants were on average 43.0 years old (first round: 41.3), 85.6% of them were male (first round: 86%), and they had worked for their current firm for 8.8 years (first round: 10.1 years). We did not find any significant differences between the 438 participants of the original sample only and the 200 that constitute the basis for this study.

### 5.1.2. Variables

Since the focus of our theorizing is on individual employees' PPTS, all variables in our model are at the individual level.

**5.1.2.1. Mediating variables.** We measured *affective commitment* to an organization in the original survey (i.e., after the focal transition) using [Allen and Meyer's \(1990\)](#) eight-item scale. We asked participants the extent to which they agreed (on a seven-point response scale) with statements like "I really feel as if this organization's problems are my own" ( $\alpha = 0.82$ ). Second, we used [Spreitzer's \(1995\)](#) 12-item scale to measure *empowerment* in the workplace during the original survey (i.e., after the focal transition). We asked participants about the extent to which they agreed (on a seven-point response scale) with statements like "The work I do is very important to me" ( $\alpha = 0.88$ ). Third, to measure *work stress*, we used [Hunter and Thatcher's \(2007\)](#) six-item scale during the original survey (again, after the focal transition). We asked participants the extent to which they agreed (on a seven-point response scale) with statements like "There are lots of times when my job drives me right up the wall" ( $\alpha = 0.88$ ).

**5.1.2.2. Assessed project performance.** Corporate entrepreneurship scholars ([Covin et al., 2015](#)) have argued for the use of subjective (rather than objective) indicators of project success because success exists in the "eye of the beholder." Indeed, [Covin et al. \(2015\)](#) argued that, particularly for early-stage entrepreneurial projects, subjective assessments are the only means available to capture performance; objective measures are rarely collected, available, or meaningful, and the goal of each entrepreneurial project varies a great deal from other projects and across organizations. Although there is the possibility that an individual's perceived project success may be somewhat biased, self-assessments and assessments from supervisors and peers are often similar (e.g., [Goffin and Gellatly, 2001](#)).

To reflect performance in terms of project outcomes from an individual employee's perspective, we adapted a subjective innovation performance scale ([Dyer and Song, 1997](#)) to create a measure of *assessed project performance*. In the follow-up survey, employees were asked to assess (on a seven-point scale) their recently completed project based on items like "The overall performance of my last project has met the objectives"; "Compared with most projects in our organization, my last project has been far more successful"; and "From an overall profitability standpoint, my last project has been successful" ( $\alpha = 0.79$ ).

**5.1.2.3. Control variables.** We controlled for members' assessments of their previous project's performance (captured in the original survey) based on the same project performance scale used to capture the dependent variable (detailed above). Additionally, we controlled for individual-level characteristics that might covary with study variables (all collected in the original survey). For example, age ([Mroczek and Kolarz, 1998](#)), gender ([Hankin and Abramson, 2001](#)), team size ([Haleblian and Finkelstein, 1993](#)), and project budget ([Bauer and Leker, 2013](#)) could impact work-related transitions. Further, since increased time on one's prior project may make role exit more difficult due to higher levels of identification, we also controlled for the amount of time individuals spent on their previous project. We also controlled for employees' time since the last transition since with time the effects of PPTS may become weaker. Finally, because the time one expects to serve on a new project can trigger identification with that project (and hence commitment, stress, and empowerment), we controlled for employees' expectations about when they would be done with their current entrepreneurial project.

### 5.1.3. SEM analysis

To test our hypotheses, we employed structural equation modeling (SEM). An alternative approach, considering the potential nested structure of our data, would be to use hierarchical or multi-level modeling. However, the results from both Hausman tests ([Hausman, 1978](#)) and Bruesch-Pagan Lagrange multiplier tests ([Breusch and Pagan, 1980](#)) indicate that there are negligible firm-level effects on the relationships and variables included in our model. These analyses suggest that the individual effects examined in our analyses are uncorrelated with other regressors and that the estimated betas are not meaningfully influenced by second-level effects. It is important to note that this does not imply that firm-level effects do not influence innovative projects but rather that the influence firm-level differences have on the relationships we examined is not significant. Because of the lack of potential firm effects on our

**Table 2**  
Descriptive statistics and correlations of the study variables.

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Perceived project transition support	4.57	0.93	1.00											
2. Affective commitment	4.62	1.02	0.52**	1.00										
3. Work stress	3.19	1.33	0.42**	0.43**	1.00									
4. Empowerment	5.62	0.74	-0.21**	0.04	0.08	1.00								
5. Current project R&D performance	4.99	1.13	0.35**	0.32**	0.25**	0.01	1.00							
6. Time since last transition (days)	294.42	370.52	-0.04	0.02	-0.12	-0.08	-0.19**	1.00						
7. Time on last project (days)	1034.47	2538.95	0.01	-0.05	0.01	0.09	0.02	0.06	1.00					
8. Expected time until leave (days)	235.73	583.94	-0.04	0.05	0.03	0.02	-0.03	0.14	-0.02	1.00				
9. Age (years)	42.84	9.82	-0.05	0.12	0.09	0.21**	0.09	0.20**	0.07	0.07	1.00			
10. Gender <sup>a</sup>	0.14	0.34	0.01	0.03	0.25**	0.06	0.14*	-0.10	0.05	0.00	0.03	1.00		
11. Team size	6.17	29.16	0.09	0.08	0.04	0.18*	0.10	0.13	0.02	0.05	0.21**	-0.20**	1.00	
12. Project budget (million euros)	2.72	5.93	-0.04	0.05	0.12	0.22**	0.14	0.14	0.10	0.01	0.38**	0.08	0.47**	1.00
13. Previous project R&D performance	5.54	0.99	0.31**	0.23**	-0.10	0.29**	0.49**	0.00	0.02	0.00	0.07	0.05	-0.11	-0.01

n = 200.

<sup>a</sup> 0 = male, 1 = female.

\* p < 0.05.

\*\* p < 0.01.

focal relationships and given the advantages that SEM offers with regards to examining the complete theoretical model simultaneously, we believe that the advantages of our chosen analyses outweigh those offered by alternative techniques.

## 5.2. Results

In [Table 2](#), we provide descriptive statistics and correlations for all the variables of the model. It is important to note that for the purposes of hypothesis testing, all multi-item measures were parceled to create single measures of the variables they were related to. We accomplished parceling by taking the mean of all items collected for a given construct, which is consistent with commonly accepted practices for this technique ([Yang et al., 2010](#)). For the PPTS construct, we first obtained the means for all six first-order sub-dimensions, and then averaged these first-order parcels to create a single PPTS measure. [Table 3](#) reports the results of the models used to test the hypothesized structural relationships. Model 1 of [Table 3](#) represents our hypothesized full-mediation model with all controls included. This model includes all aspects of the proposed model, including structural and control variables and relationships. This model fits the data well and demonstrates excellent fit with regard to standard goodness-of-fit indices ( $\chi^2 = 76.23$ ,  $df = 28$ ,  $CFI = 0.95$ ,  $TLI = 0.94$ ,  $RMSEA = 0.03$ ,  $SRMR = 0.06$ ). Model 2 of [Table 3](#) represents an alternative partial-mediation model. This model includes all aspects of Model 1 but with an additional direct relationship specified between PPTS and employees' assessments of project performance. While the partial mediation model does show acceptable fit with the data, it does not represent a significant improvement over the hypothesized fully mediated model ( $\chi^2 = 74.72$ ,  $df = 27$ ,  $CFI = 0.93$ ,  $TLI = 0.94$ ,  $RMSEA = 0.03$ ,  $SRMR = 0.06$ ,  $\Delta\chi^2 = 1.51$ ,  $p = 0.219$ ). Additionally, the direct relationship between PPTS and employees' assessments of project performance is not significant ( $\beta = 0.13$ ,  $p = 0.141$ ), which further reinforces the validity of our fully mediated model.

[Table 4](#) contains the standardized coefficients and standard errors of all relationships included in our model. The results indicate that PPTS has a positive relationship with affective commitment to the organization ( $\beta = 0.52$ ,  $p = 0.000$ ) and with members' feelings of empowerment ( $\beta = 0.42$ ,  $p = 0.000$ ), providing support for Hypotheses 1a and 3a, respectively. Additionally, the results show that PPTS has a negative relationship with work stress ( $\beta = -0.21$ ,  $p = 0.002$ ), providing support for [Hypothesis 2a](#). To test Hypotheses 1b, 2b, and 3b, we included members' affective commitment, work stress, and empowerment as antecedents of their assessments of their new project's performance after completion. The results in [Table 4](#) indicate a positive relationship between affective commitment and performance ( $\beta = 0.30$ ,  $p = 0.000$ ) of the new project after completion. These results, in combination with the results related to [Hypothesis 1a](#), indicate that affective commitment to the organization (partially) mediates the relationship

**Table 3**  
Hypothesis tests and model comparisons.

Models	$\chi^2$	df	CFI	TFI	RMSEA	SRMR	$\Delta\chi^2$	$\Delta df$	p-Value
Model 1: Proposed full-mediation model	76.23	28	0.95	0.94	0.03	0.06			
Model 2: Alternative partial-mediation model	74.72	27	0.93	0.94	0.03	0.06	1.51	1	0.219

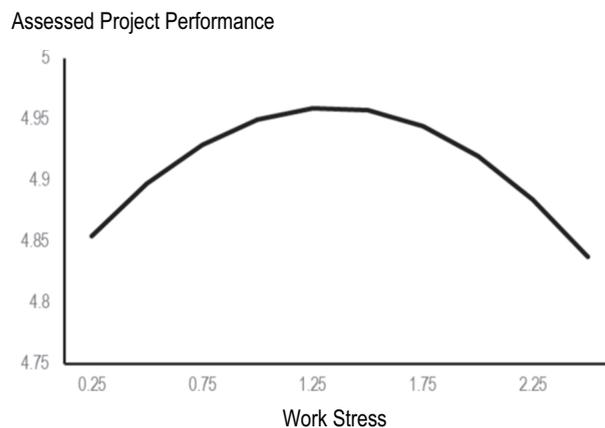
**Table 4**  
Model testing using SEM.

Relationship	$\beta$	se	p-Value
<b>Structural</b>			
PPTS → Affective COMMITMENT	0.52	0.05	0.000
PPTS → Empowerment	0.42	0.06	0.000
PPTS → Work stress	-0.21	0.07	0.002
Affective commitment → Current project performance	0.30	0.07	0.000
Empowerment → Current project performance	0.06	0.07	0.367
Work Stress → Current project performance	0.24	0.07	0.037
Work Stress <sup>2</sup> → Current project performance	-0.09	0.06	0.002
<b>Control</b>			
Age → Current project performance	0.07	0.07	0.340
Gender → Current project performance	0.10	0.07	0.139
Previous team size → Current project performance	0.06	0.07	0.438
Project budget → Current project performance	0.11	0.08	0.139
Time since last transition → Current project performance	-0.20	0.06	0.002
Time on last project → Current project performance	0.03	0.06	0.635
Expected time until leave → Current project performance	-0.02	0.05	0.781
Previous project performance → Current project performance	0.44	0.05	0.000

n = 200.

between PPTS and employees' assessments of their new project's performance once completed such that PPTS is positively related to affective commitment, which is in turn positively related to assessed project performance. These findings provide support for [Hypothesis 1b](#). Our results also indicate that work stress has a significant main ( $\beta_1 = 0.24, p = 0.037$ ) and curvilinear ( $\beta_2 = -0.09, p = 0.002$ ) relationship with assessed project performance for the completed new project. Because the linear coefficient ( $\beta_1$ ) is positive whereas the coefficient of the quadratic term ( $\beta_2$ ) is negative, work stress has an inverted U-shaped relationship with assessed project performance for the completed new project. [Fig. 1](#) presents a graphical depiction of this relationship. To further validate the curvilinear inverted U-shaped relationship between work stress and assessed project performance, we followed the three-stage criteria for validating curvilinear relationships ([Haans et al., 2016](#)). For the first stage, the coefficient of the squared term must be significant and of the expected sign, which we have shown in the results presented above. Second, the slope must be sufficiently steep at both ends of the data range. To examine this steepness, we determined the slope of the relationship at low ( $-2$  SD) and high ( $+2$  SD) ends of the range of values for work stress. Because our results indicate that the slope at the low end of work stress is positive and significant (slope = 0.135) and that the slope at the high end of work stress is negative and significant (slope =  $-0.734$ ), our results satisfy this criterion as well. Finally, the third criterion requires that the inflection point be well within the data range. In order to determine the inflection point of our relationship, we employed the equation provided by [Haans et al. \(2016\)](#) and found that the inflection point of our relationship is at a value of work stress equal to 1.33, which is well within our data range, further supporting the presence of a valid curvilinear relationship between work stress and assessed performance. These results, in combination with the results related to [Hypothesis 2a](#), indicate that work stress (partially) mediates the relationship between PPTS and employees' assessments of their new project's performance once completed in an inverted U-shaped manner such that PPTS is negatively related to work stress, which in turn has an inverted U-shaped relationship with assessed project performance.

To further test the curvilinear indirect effect of PPTS on new project performance, we followed current convention ([Lin et al., 2017](#)) and employed the method developed by [Hayes and Preacher \(2010\)](#). Based upon this method, the curvilinear immediate indirect effect of PPTS on new project performance, as mediated by work stress, is represented by the parameter  $\theta$ . Because  $\theta$  is not



**Fig. 1.** Work stress and assessed project performance.

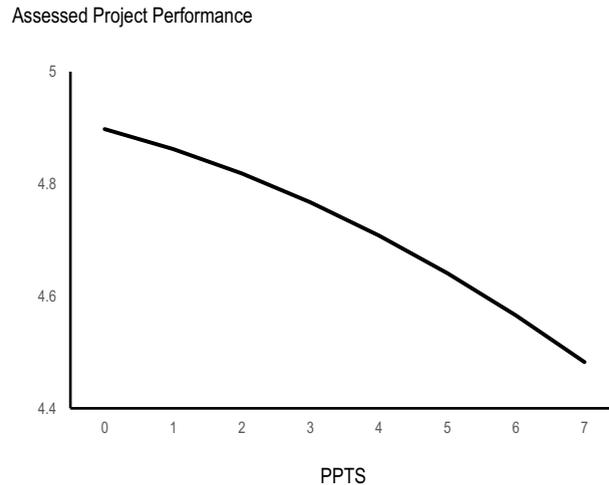


Fig. 2. Indirect effect of PPTS on performance via work stress.

constant, but rather a function of the value of work stress, the curvilinear effect size is displayed by the difference in  $\theta$  at high and low values (i.e. two standard deviations above and below the mean value) of work stress. The  $\theta$  for high and low values of work stress were 0.17 and  $-0.03$  respectively, and the difference between the two  $\theta$  estimates was 0.20 ( $p = 0.03$ ), indicating that work stress transmits the indirect effect of PPTS on new project performance in a curvilinear fashion. To better illustrate the indirect relationship between PPTS and assessed project performance, we include a graph of this relationship in Fig. 2. Interestingly, although the graph of the indirect effect of stress on assessed project performance is inverted U-shaped, Fig. 2 indicates that the overall shape of the PPTS-performance relationship over the range of potential PPTS scores is also curvilinear but negative. That is, the maximum of the inverted U-shaped relationship between PPTS and assessed performance is outside the range of relevant PPTS values. This finding is a result of the unique combination of a negative linear relationship between PPTS and work stress and the inverted U-shaped relationship between work stress and assessed project performance. These findings provide only partial support for Hypothesis 2b: the mediated relationship is curvilinear but not the full shape of the inverted U is within the relevant value range. Finally, our results show that empowerment does not have a significant relationship with assessed project performance ( $\beta = 0.06$ ,  $p = 0.367$ ). These results indicate that empowerment does not (partially) mediate the relationship between PPTS and employees' assessments of their new project once completed. Therefore, we did not find support for Hypothesis 3b.

### 5.3. Robustness checks

As a robustness check, we tested alternative models containing assessed *team* performance instead of assessed *project* performance as the ultimate dependent variable. In basic research and engineering, teams sometimes work very well from a task-oriented or scientific perspective, but due to unforeseeable circumstance, the technology might just not work in the end (e.g., pharmaceutical drug candidates might work well in curing mice but not humans). In these cases, employees might rate team performance high despite failure to produce a commercially viable project outcome. Therefore, in the follow-up survey, we used an adapted measure of team performance (Shaw et al., 2011) and asked participants about their perceptions (on a seven-point response scale) of their team's "quality of work," ability to get "work done efficiently," "flexibility in dealing with unexpected changes," and "overall performance" ( $\alpha = 0.88$ ). Analysis of this alternative model produced similar results when compared to our theoretical model with no statistical variations in the relationships reported, further supporting the validity of our results.

Additionally, to further examine the potential for reverse causality, we examined a model where the direction of the relationships between assessed project performance and affective commitment, empowerment, and work stress, as well as the relationship between these three mediators and PPTS, were reversed. The results of our hypothesized model (vis-à-vis the reversed model) were substantially stronger both in terms of effect size and overall model goodness-of-fit. While this does not absolutely rule out the potential for some reciprocal effects between the model's variables, it does further substantiate the validity of the theoretical direction of our hypothesized model.

Finally, to assess the effects of common method and source variance, we included a latent method variable to examine what, if any, influence common method and source error might have had on our findings. The results of this analysis are consistent with those reported above, suggesting that these potential sources of error did not have a significant impact on our results.

## 6. Discussion

### 6.1. Theoretical implications

While the extant research on entrepreneurial projects has typically focused on understanding either project entry (Hoegl and Schulze, 2005; Nonaka, 1994) or exit (Shepherd et al., 2009; Shepherd et al., 2014; Shepherd et al., 2011), in this study we theorize and find that employees perceive exit and entry as intertwined psychological processes. Because the PPTS measure is best modeled as a first-order construct consisting of six second-order constructs rather than with separate first-order constructs, employees seem to believe that moving from one entrepreneurial project to the next is one transition process rather than separate entry and exit processes. A crucial theoretical insight from this finding is that prior studies focusing on employees' emotional recovery from project exit (e.g., Shepherd et al., 2009) may have missed an important part of the picture because employees' (emotional) experiences following exit are linked to how they enter their new project.

Indeed, our study not only suggests that a project transition phase exists from the employees' perspective, but also provides novel insights into managerial activities that help employees master this phase. Existing work in the corporate entrepreneurship literature has mainly focused on managerial support activities during the action phases of entrepreneurial projects such as the provision of appropriate financial resources for the project, monetary incentives contingent on project progress, and autonomy for important project decisions (Hornsby et al., 2009; Hornsby et al., 1993; Kuratko et al., 2005; Ling et al., 2008; Monsen et al., 2010). We illustrate that support activities during a project's transition phase are notably different and focus on the provision of information (briefing, debriefing, reflection time), the creation of an appropriate new team environment, and organizing the transition process. These findings suggest that models of managerial activities and support for promoting corporate entrepreneurship (Hornsby et al., 2002; Kuratko et al., 2005) need to be complemented with models to capture activities during transitions between entrepreneurial projects.

Another key contribution of our research emerges from our focus on how the transition phases between projects influence the next project's success. Prior studies have depicted these phases as being rather unproductive (Kolisch and Padman, 2001), the prevailing view being that project transitions should be characterized by rapid project termination, learning, and quick redeployment of employees to the next project (Brown and Eisenhardt, 1997; McGrath, 1999). However, such arguments do not consider the potential consequences of transitions for employees involved in the projects (Shepherd et al., 2014), and how those consequences influence the next project's performance. Our results suggest that to enable effective project transitions that enhance the success prospects of the following project, it is important that organizations provide employees the transition support required to generate the positive future attitudes and feelings that maximize their contributions to the next project. Therefore, future work on entrepreneurial projects needs to acknowledge that project success is not only influenced by factors following the beginning of the project (e.g., Corbett et al., 2007) or while the project is ongoing, but also by those related to the process of ending the previous project.

Additionally, we provide insights into employees' motivation for working on entrepreneurial projects, which corporate entrepreneurship studies have identified as a key factor for project participation and success (Hornsby et al., 2002; Kuratko et al., 2005; Marvel et al., 2007). Existing studies have mainly treated motivation as a rather general concept (e.g., reflected in employees' decisions to join entrepreneurial projects, Monsen et al., 2010), but a more detailed approach to studying the facets of feelings and attitudes at work that underlie employees' motivations is likely important. Our study illustrates the benefits of such an approach. Specifically, we find that PPTS affects employees' affective commitment to their organization, stress experienced at work, and feelings of empowerment. Although these constructs are well established in the literatures on organizational behavior and psychology and have been associated with multiple effects on employees and their organizations (Ganster and Rosen, 2013; Meyer et al., 2002; Seibert et al., 2011), with few exceptions (e.g., Shepherd et al., 2011) their relevance in the specific context of corporate entrepreneurship has yet to be explained. Our results indicate not only that corporate entrepreneurship managers can influence affective commitment, stress, and empowerment through specific support practices, but also that their relationship with project performance can be complex in the specific context of entrepreneurial projects. While the relationship between PPTS and project performance is positively mediated by affective commitment, it is mediated in curvilinear and negative manner by work stress. Therefore, while managerial transition support can enhance project performance via affective commitment, high levels of the same support practices could impede performance due to their influence on work stress. Future studies theorizing about support and motivation in the corporate entrepreneurship context can draw on a more comprehensive approach that considers multiple motivational concepts that might influence performance at different levels (individual, project, or organizational) in potentially different ways.

While prior studies have emphasized that the high demands of entrepreneurial work lead individuals to experience high stress levels (Buttner, 1992; Jamal, 1997), Baron et al. (2016) recently suggested that uncertainty and high workload can cause stress-resistant individuals to self-select into entrepreneurial endeavors. Indeed, our results show a negative relationship between PPTS and an employee's levels of work stress, but also a negative (curvilinear) relationship between work stress and his or her assessments of project performance after completion. That is, for the specific context of entrepreneurial projects, it appears that more transition support resulting in lower stress levels is detrimental to an employee's assessments of his or her next completed project's performance. Rather, employees seem to appreciate a transition process that is associated with some stress and uncertainty to generate the motivation and energy needed to effectively integrate into their new project. Such an employee might find it unnecessary to experience support during project transitions. Our findings resonate with Baron et al.'s (2016) arguments and indicate that self-selection may also play an important role in corporate entrepreneurship such that stress-resistant individuals are likely to participate in entrepreneurial projects.

Our finding that PPTS can have detrimental effects for employees and their assessments of project outcomes is also notable because existing studies and meta-analyses almost exclusively emphasize the benefits of perceived organizational support (Kurtessis et al., 2017; Rhoades and Eisenberger, 2002). However, a recent study suggested that there may be a dark side—or a “too-much-of-a-good-thing” effect (Pierce and Aguinis, 2013)—for perceived organizational support (POS) such that “greater than optimal levels of POS may be associated, ironically, with undesirable employee behaviors” (Burnett et al., 2015: 1806). Specifically, Burnett et al. (2015) found that when employees perceive very high levels of organizational support, they tend to reduce proactive behaviors and avoid taking charge at work. Our study suggests that this too-much-of-a-good-thing effect may also apply to the specific context of project transitions. Importantly, however, the conclusion that a “less supported transition is more” in terms of employees' project performance assessments only accounts for the path via work stress. Yet, the effect of PPTS on employees' project performance assessments mediated by affective commitment is positive. The important theoretical implication is that we can only gain a full picture of the relationship between perceived support and employees' behavioral outcomes and performance by considering how work stress and other employee feelings and attitudes (e.g., affective commitment) simultaneously—rather than independently—impact perceived organizational support.

## 6.2. Limitations and future research

As with any study, the current research has some limitations. First, we acknowledge limitations of our sample and data. We took both samples from a population within Germany, so we were unable to investigate and establish the generalizability of our results to different national or cultural settings. Further, although we chose to use a measure of project performance derived from an established scale to facilitate the comparability of results across studies, future research may use (or develop) measures that are more specific to the context of entrepreneurial projects within large organizations. In addition, our data is cross-sectional in nature, so we cannot provide strict empirical evidence of the causal direction of the relationships we propose. Future research employing longitudinal data or experiments will be necessary to determine the specific causal nature of these relationships. Although our results did not suggest significant effects from common source or method bias, further research employing alternative designs (e.g., experimental methods) as well as analytic techniques (e.g., CFA-marker models) could be used to further control for such potential effects. Finally, our dataset did not capture employees' perceptions of the length of their prior transition. Perhaps going forward, researchers can find a way to capture employees' project transitions while they are happening and can then determine the duration of these transitions and its effect.

Second, there are also some potential limitations of the PPTS construct. While we present substantial evidence in support of the validity of our PPTS measure, we did not examine what, if any, temporal effects might influence the interplay of the sub-dimensions of our new construct. While PPTS underlies each aspect, it is possible that there are temporal relationships and sequences between aspects of this form of support that could influence how PPTS affects key outcomes. It will be imperative that future research focuses on potential path dependent associations between the individual sub-dimensions of the PPTS construct and how these potential relationships influence the nature of PPTS as a construct, as well as the relationships it has with individual and organizational outcomes. Furthermore, future research into the reflective/formative nature of our construct will be critical, as determining the directionality of the relationships between a construct and a set of indicators can often be a complicated task (Hulland, 1999). Although the validity of formative conceptualizations of variables within the social sciences has been called into question recently (Bagozzi, 2007; Howell et al., 2007), it will nevertheless be important for future research to examine the potential formative nature of our PPTS construct. Finally, while we tried to capture all important facets of support through the interviews of Study 1 and our consultations with multiple experts on the scale items, we cannot guarantee that we captured all possible means by which organizations support project transitions. It will be important for future research to examine what, if any, additional aspects of potential support are important in facilitating an individual's transition from one project to the next.

Third, we acknowledge that the theoretical model presented in this paper is only a first step towards understanding the role of PPTS in supporting project transitions. While we examine the association between perceived individual support and project performance, it is possible that this relationship could vary as a function of the attributes of the individual's role within a given project. For example, it is possible that project managers, or those responsible for project outcomes, could experience stronger connections between the support they perceive during transitions and subsequent project performance, whereas subordinates might not experience as strong of a link between these two variables. We need future research into the factors that could moderate the association between perceived transition support and subsequent project performance to better understand the nuances of this relationship. Further, in drawing on organizational support theory as a theoretical narrative we emphasize the psychological aspects of project transitions but an economic perspective can yield additional insights. For example, a transaction cost economics perspective might provide alternative explanations why PPTS can be detrimental. That is, employees may perceive PPTS as a mechanism of hierarchical governance that diminishes their positive attitudes towards the organization and/or even motivates opportunistic behavior that counteracts effective transitioning.

## 6.3. Conclusion

In conclusion, transitions between entrepreneurial projects are frequent in innovation-driven organizations but are often difficult for the employees involved. Building on organizational support theory, we found that employees' PPTS can trigger affective commitment and empowerment while diminishing work stress in their subsequent project. Although the indirect path of PPTS through affective commitment was positive in terms of employees' assessments of their next completed project's performance, the indirect

path through work stress was curvilinear. We hope that the new measure of PPTS stimulates further conversation and research on entrepreneurial project transitions.

### Acknowledgement

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### Appendix A. Samples and data collection

**Sample 1: Employees who are members of entrepreneurial projects in a technical university setting.** We used a sample of scientific employees of technical departments (civil, geo, and environmental engineering; chemistry; electrical engineering and information technology; computer sciences; mechanical engineering; physics) at a German technical university. Projects at these departments have varying outcomes, making project transition a typical experience (e.g., Shepherd et al., 2011). Although immediate commercialization is not their primary goal, we include applied basic research projects because they are often the source of early opportunities for corporate entrepreneurship (Baum et al., 2000; Eckhardt and Shane, 2003; George et al., 2002; Haeussler et al., 2012). Indeed, scholars have emphasized that corporate entrepreneurship involves “extending the firm's domain of competence and corresponding opportunity set through internally generated new resource combinations extending the firm's domain of competence and corresponding opportunity set” (Burgelman, 1984: 154), which is consistent with the role of basic applied research. Moreover, these projects can be considered entrepreneurial because they are mostly exploratory in nature, face high outcome uncertainty, and can lead to new products. In particular, most of the departments generate the majority of their research income from industry collaborations aimed at developing novel technologies for the corporate partner(s). Many chairs at these departments are large (50 employees or more) and more operated like small and medium-sized enterprises than independent state-financed chairs, with the income being research funding from industry partners. Briefing and debriefing often takes the form of a one- or two-day workshop in which (in addition to the new university research team) engineers and managers from the corporate partner participate. Deliverables and milestones are based on the contract between the research group and the corporate partner, and when they are not met the corporate partner can stop financing the project. Industry collaboration projects from departments where we collected data included, for example, the identification of new catalytic chemical substances for a specific industrial purpose (chemistry), the development of a new opto-electronical device for a laser system (physics), the identification of a new drug for dementia (chemistry), the exploration of new small-scale power systems for decentralized electricity generation (electrical engineering and information technology), the development of algorithms for autonomous driving (mechanical engineering), and the development of a new carbon composite material for airplanes (mechanical engineering).

We identified 2158 employees from the webpages of the chairs at the technology-oriented departments. We randomly contacted employees from this list via either phone or email and asked them to participate. If they agreed, we used an online tool for survey administration, and if they did not respond within three weeks, we reminded them of the importance of their participation via email. To encourage participation, we offered the chance to win an Amazon gift voucher. Further, we guaranteed full anonymity and confidentiality to all participants. We originally developed the questionnaire in English and then followed an established back-translation procedure to generate a German version (Craig and Douglas, 2006). We invited 661 employees to our study and received 274 usable responses (a response rate of 41.4%). Most of these scientists were German (84.6%), male (82.4%), and held a master's degree (82.4%, the rest held PhD degrees). On average, they were 31.4 years old ( $SD = 5.8$  years), had 5.5 years ( $SD = 5.3$  years) of working experience, had worked on 5.6 projects ( $SD = 16.0$ ), and worked on teams with 4.9 members ( $SD = 6.6$ ).

**Sample 2: Employees who are members of entrepreneurial projects in an industrial setting.** For scale development and validation in an industry context, we surveyed members of mid- to large-sized multi-national corporations in Germany (with more than 500 employees) who were involved in entrepreneurial projects at the time of our study. In eight telephone interviews, we confirmed that the projects these employees pursue meet our study's definition of entrepreneurial projects from the employees' perspective. In the survey, we asked them to reflect on their previous and current project work experiences (including their previous project transition). Since managers operating at higher levels of the organization are often not actively engaged in day-to-day project administration nor in the activities of transitioning from one project to another, our sampling strategy was to approach middle-level managers involved in entrepreneurial projects and ask them to both participate in our study and provide contact information for other employees currently involved in entrepreneurial projects. To sample these managers, we first used the Hoppenstedt database of German firms to create a list of potential firms for the study. We focused on those with 500 employees or more because larger firms are likely to have more active entrepreneurial projects than smaller firms (Covin et al., 2015). Second, we contacted those organizations that specified management-level contacts and managers' responsibilities.

Of the 315 organizations on our list which had dedicated innovation or R&D departments, we randomly contacted 183 via telephone (58% of the initial list). We called the department heads and explained that the general purpose of our study was to better understanding employees' project transitions in the innovation and R&D context. We asked the department heads to identify several (preferably five to ten) employees who were working on such projects and to provide us with their email addresses. To boost the response rate, we offered to produce and deliver a benchmark report for each participating firm and invited every participating employee to a workshop about best practices in entrepreneurial management at the first author's institution after study completion. We used an online tool for survey administration, and we assured full anonymity and confidentiality to all participants. In total, we

invited 558 people by email to this first survey wave. Altogether, 438 employees from 49 organizations participated, representing a response rate of 78.5% in terms of individuals invited and a response rate of 27% in terms of contacted organizations. The firms had 55,000 employees (SD = 79,000) and annual revenues of 17.4 billion euros (SD = 25.5 billion euros) on average. The firms' industries included industrial goods (42.5%), chemicals and materials (17.6%), consumer goods and electronics (14.6%), automotive (7.5%), medical (5.9%), aerospace and defense (4.1%), and a few others (i.e., logistics, utilities, and telecommunications or related services). Most participants were male (85.6%) and had at least some management responsibilities (57.3%), and on average, they were 41.3 years old (SD = 9.2 years) and had worked for 10.1 years (SD = 8.7 years) for their firm. Typical projects these employees pursued included, for example, the development of sensors for optimizing energy yield from wind rotors, the exploration of three-dimensional printing technology for the production of snack foods, the optimization of smart grid algorithms for distributed energy supply, the development of a new imaging software for medical purposes, and the development of fast-loading batteries for automobiles. To test for potential selection bias, we conducted post hoc analyses for our proposed model relationships using the Heckman selection-correction technique. The results of this analysis indicated that there were no significant issues regarding potential selection bias for our analyses.

## Appendix B. Measurement model and fit of developed scale

Item refinement is an important step during the scale-development process. First, we ran an initial confirmatory factor analysis (CFA) to reduce the number of items and explore validity. While internal consistency reliabilities can be obtained with as few as three items (Cook, 1981), in his seminal work regarding scale development, Hinkin (1998) stated that “it should be anticipated that approximately one half of the created items will be retained for use in the final scales, so at least twice as many items as will be needed in the final scale should be generated” (p.109). Furthermore, Hinkin noted that “the eventual goal will be the retention of four to six items for most constructs” (p.109). Therefore, we decided to retain six items per construct for further analyses. Second, we split Sample 2 into two sub-samples to replicate the results obtained from Sample 1 (cf. Hinkin, 1998). The first sub-sample contained 152 project employees and was used to further refine the item pool. We used the second sub-sample, which consisted of the remaining 286 employees from Sample 2, for validation and robustness checks. Consistent with MacKenzie et al. (2011), we removed problematic indicators with squared completely standardized loadings below 0.5 (equivalent to recommendations of factor loadings < 0.7, [Fornell and Larcker, 1981]), cross-loadings with other constructs, or large measurement error covariances. Skewness from -2 to 2 and kurtosis from 1 to 5 indicate that data in all three samples is approximately normal. The final scale consisted of 24 items reflecting six different constructs. All items loaded significantly on their intended construct in each sample. Additionally, as presented in Table A1, factor analysis using varimax rotation resulted in six factors associated with our final items, with all items loading on distinct factors and no significant cross-loadings present between factors. Overall, the item reliabilities were considerable, but a few items failed to reach the widely accepted cutoff value for factor loadings (0.7).

Table A1  
Factor analysis of PPTS items.

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
TR1	0.12	0.18	0.23	0.14	0.10	<b>0.73</b>
TR2	0.14	0.31	0.34	0.03	0.11	<b>0.77</b>
TR3	0.13	0.09	0.31	0.21	0.03	<b>0.69</b>
TC1	0.07	0.31	<b>0.69</b>	0.25	0.01	0.11
TC2	0.07	0.32	<b>0.68</b>	0.18	0.10	0.14
TC3	-0.01	0.17	<b>0.84</b>	0.16	0.03	0.14
TC4	0.01	0.21	<b>0.84</b>	0.14	0.14	0.15
E1	0.22	0.21	0.14	<b>0.78</b>	0.00	0.07
E2	0.11	0.24	0.23	<b>0.83</b>	0.11	0.06
E3	0.14	0.18	0.17	<b>0.57</b>	0.18	0.14
E4	0.17	0.23	0.15	<b>0.79</b>	0.11	0.14
D1	<b>0.73</b>	0.22	0.05	0.16	0.13	0.00
D2	<b>0.83</b>	0.13	0.05	0.17	0.05	0.18
D3	<b>0.84</b>	0.14	0.06	0.07	0.09	0.02
D4	<b>0.83</b>	0.11	-0.03	0.16	0.08	0.07
D5	<b>0.76</b>	0.08	0.03	0.06	0.11	0.00
B1	0.12	<b>0.62</b>	0.23	0.29	0.08	0.03
B2	0.17	<b>0.72</b>	0.26	0.27	0.14	0.11
B3	0.20	<b>0.71</b>	0.24	0.29	0.08	0.11
B4	0.18	<b>0.74</b>	0.26	0.17	0.10	0.13
B5	0.20	<b>0.74</b>	0.23	0.22	0.03	0.05
TL1	0.04	0.08	0.02	0.06	<b>0.89</b>	0.01

(continued on next page)

Table A1 (continued)

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
TL2	0.15	0.07	0.08	0.09	<b>0.88</b>	0.06
TL3	0.17	0.10	0.16	0.11	<b>0.70</b>	0.04

We also used two frequently used goodness-of-fit indices—the comparative fit index (CFI) and the Tucker Lewis index (TLI)—for which results between 0.90 (Steenkamp and Baumgartner, 1998) and 0.95 (Hu and Bentler, 1999) are deemed acceptable (MacKenzie et al., 2011). The vast majority of the goodness-of-fit findings reached or exceeded the stricter thresholds. In sum, the PPTS scale fits the data for both Sample 1 and Sample 2 well. Table A2 provides a summary of the goodness-of-fit statistics for the measurement model with each tested sub-sample and thresholds.

Table A2

Summary of goodness-of-fit statistics for the measurement model with each sample and thresholds, Cronbach's alpha.

	$\chi^2$	df	RMSEA	CFI	TLI	SRMR	Cronbach's Alpha
Scales in one model							
Sample 1 (n = 274)	459	284	0.047	0.96	0.95	0.049	
Sample 2, Wave 1 (n = 152)	432	284	0.059	0.95	0.94	0.063	
Sample 2, Wave 2 (n = 286)	381	284	0.035	0.98	0.98	0.043	
1. Debriefing							
Sample 1 (n = 274)	19	5	0.10	0.97	0.95	0.03	0.84
Sample 2, Wave 1 (n = 152)	4	5	0.00	1.0	1.0	0.01	0.90
Sample 2, Wave 2 (n = 286)	15	5	0.08	0.99	0.98	0.02	0.89
2. Reflection time							
Sample 1 (n = 274)	17	2	0.17	0.98	0.93	0.04	0.87
Sample 2, Wave 1 (n = 152)	5	2	0.11	0.99	0.97	0.02	0.86
Sample 2, Wave 2 (n = 286)	6	2	0.08	0.99	0.98	0.02	0.88
3. Briefing							
Sample 1 (n = 274)	9	5	0.05	1.0	0.99	0.01	0.90
Sample 2, Wave 1 (n = 152)	5	5	0.02	1.0	1.00	0.01	0.92
Sample 2, Wave 2 (n = 286)	11	5	0.07	0.99	0.99	0.02	0.90
4. Team competence							
Sample 1 (n = 274)	13	2	0.14	0.99	0.95	0.02	0.90
Sample 2, Wave 1 (n = 152)	12	2	0.18	0.98	0.94	0.03	0.92
Sample 2, Wave 2 (n = 286)	3	2	0.04	1.0	1.00	0.01	0.90
5. Team relatedness							
Sample 1 (n = 274)	1	2	0.00	1.0	1.0	0.01	0.83
Sample 2, Wave 1 (n = 152)	4	2	0.08	1.0	0.98	0.01	0.90
Sample 2, Wave 2 (n = 286)	5	2	0.07	1.0	0.99	0.01	0.89
6. Process organization							
Sample 1 (n = 274)	9	2	0.11	0.99	0.96	0.02	0.86
Sample 2, wave 1 (n = 152)	5	2	0.11	0.99	0.97	0.02	0.89
Sample 2, wave 2 (n = 286)	1	2	0.00	1.0	0.98	0.01	0.85

Additionally, we compared the fit of our proposed PPTS scale model to a number of alternative models to determine the appropriateness of our conceptualization of PPTS. The results of these analyses, which are reported in Table A3, indicate that none of the alternative models provided a better fit for our data, further supporting the validity of our new measure. To determine the reliability of our scales, we examined the Cronbach's alpha values for each scale in every round of data collection. Our analysis indicates that the scales were reliable for each of the six sub-constructs in every round, indicating that the items measure the same sub-construct reliably (Table A2).

Table A3  
Alternative nested factor structure analysis.

Factor structure	$\chi^2$	df	CFI	TLI	RMSEA	SRMR
Hypothesized structure	350.24	237	0.97	0.96	0.05	0.06
Alternative three-factor structures						
D/TL, B/TC/TR, E	1123.3	249	0.73	0.71	0.13	0.11
TC/TR, E/D, B/TL	1397.7	249	0.65	0.61	0.15	0.13
TC/E, TR/B, D/TL	1267.1	249	0.69	0.66	0.14	0.12
TC/D, TR/TL, E/B	1719.7	249	0.55	0.50	0.17	0.17
TC/B, TR/D, E/TL	1227.1	249	0.70	0.67	0.14	0.14
TC/TL, TR/E, D/B	1485.9	249	0.62	0.58	0.16	0.18
Alternative two-factor structures						
TC/TR/E, D/B/TL	1805.3	251	0.53	0.48	0.18	0.17
TC/B/TL, TR/E/D	1744.8	251	0.55	0.50	0.17	0.14
TC/D/B, TR/E/TL	1762.8	251	0.54	0.49	0.17	0.16
Alternative one-factor structure	2287.4	252	0.48	0.43	0.19	0.15

### Appendix C. Convergent validity, discriminant validity, and social desirability

For measures of a construct to possess convergent validity, it is necessary for the majority (>0.50) of the variance of the measurement items to be accounted for by the underlying latent construct they are hypothesized to represent (Fornell and Larcker, 1981). The values for the average variance extracted for the CFA of the first wave of Sample 2 range from 0.54 to 0.72, and the values for the average variance extracted for the CFA of the second wave of Sample 2 range from 0.51 to 0.69. These values all exceed the stated threshold of 0.50, thereby confirming convergent validity for all of the newly developed sub-scales. To establish discriminant validity, we examined whether the average variance extracted for each of the six sub-dimensions exceeds the squared correlation between each sub-dimension (Fornell and Larcker, 1981). Squaring each correlation between the six newly developed sub-dimension scales produced results ranging from 0.15 to 0.42. We found that the average variance extracted for each of the new scales exceeds the squared correlations between each of the new measures. This finding provides support for the scale's discriminant validity. Finally, social desirability bias can represent a threat to the validity of newly developed scales (Netemeyer et al., 2003: 83). We guaranteed anonymity for the respondents to reduce any potential social desirability bias, and we included a scale in the questionnaire to capture respondents' tendency to manage impressions (and therefore answer in a socially desirable manner). To avoid rejection of the questionnaire by study participants, we eliminated two items of the impression-management scale based on the pretest. Following the suggestions of Li and Bagger (2007), we used a continuous seven-point Likert scale rather than a dichotomous measurement. Table A4 provides further information about the correlations with the impression-management scale for Sample 2.

Table A4  
Correlations with adjusted impression-management scale.

	Wave 1 Sample 2 (n = 152)			Wave 2 Sample 2 (n = 286)		
	Coefficient	R <sup>2</sup>	Adj. R <sup>2</sup>	Coefficient	R <sup>2</sup>	Adj. R <sup>2</sup>
1. Debriefing	-0.07	0.01	-0.00	0.06	0.00	0.00
2. Reflection time	-0.04	0.00	-0.01	0.04	0.00	0.00
3. Briefing	0.00	0.00	-0.01	0.13	0.02	0.01
4. Team competence	0.19	0.003	0.03	0.015	0.02	0.02
5. Team relatedness	0.05	0.00	-0.00	0.14	0.02	0.02
6. Process organization	0.10	0.01	0.00	0.15	0.02	0.02

Note: Standardized regression coefficients are displayed.

## Appendix D. Nomological network

To address how the sub-dimensions of our scale work within a system of related constructs (i.e., nomological net) (Nunnally and Bernstein, 1994), we examined several potential antecedents, correlates, and outcomes that could be related to specific aspects of PPTS. To identify potential variables of interest for our nomological network, we examined the bivariate correlations between likely antecedents, correlates, and outcomes of PPTS. Because organizational support can lead to increased positive emotions (Rhoades and Eisenberger, 2002), it is likely that the dimensions of PPTS are substantially related to employees' positive emotions. Indeed, our data indicates that the dimensions of debriefing ( $\rho = 0.32$ ,  $p = 0.001$ ), reflection time ( $\rho = 0.15$ ,  $p = 0.040$ ), briefing ( $\rho = 0.40$ ,  $p = 0.000$ ), prospective team competence ( $\rho = 0.27$ ,  $p = 0.000$ ), prospective team relatedness ( $\rho = 0.35$ ,  $p = 0.000$ ), and process organization ( $\rho = 0.31$ ,  $p = 0.000$ ) are all significantly associated with positive emotions (measured based on [Watson and Clark, 1994] on a five-point Likert-type scale,  $\alpha = 0.86$ ). Similarly, since organizational support can result in increased employee satisfaction (Yoon and Thye, 2002), we predicted that the dimensions of PPTS would also be related to individuals' satisfaction with their teams. Again, our data indicates that the dimensions of debriefing ( $\rho = 0.16$ ,  $p = 0.012$ ), reflection time ( $\rho = 0.16$ ,  $p = 0.020$ ), briefing ( $\rho = 0.28$ ,  $p = 0.000$ ), prospective team competence ( $\rho = 0.49$ ,  $p = 0.000$ ), prospective team relatedness ( $\rho = 0.48$ ,  $p = 0.000$ ), and process organization ( $\rho = 0.23$ ,  $p = 0.000$ ) are all significantly associated with team satisfaction (measured following [Shaw et al., 2011] on a seven-point Likert-type scale,  $\alpha = 0.88$ ).

In terms of important antecedents and correlates to the dimensions of PPTS, we identified several variables that relate to specific aspects of employees' perceptions of transition support. Because organizations that engage in a larger number of research projects have most likely developed more formal systems and procedures to help employees share their experiences to enhance learning, we expected that the number of R&D projects an organization engages in each year on average is related to the extent to which the organization offers effective debriefing sessions. In our analysis, we found that debriefing is positively related to the number of R&D projects an organization engages in on average during a year ( $\rho = 0.21$ ,  $p = 0.003$ ). Furthermore, prior evidence suggests that prospective team competence and prospective team relatedness are associated with the extent to which individuals identify with their prospective teams (Cohen and Bailey, 1997). As such, we predicted that team identification will be associated with prospective team competence and relatedness. Again, we found that the level at which individuals identify with their teams (measured by an adapted 6-item scale from Mael and Ashforth, 1992 on a seven-point Likert-type scale,  $\alpha = 0.82$ ) is associated with prospective team competence ( $\rho = 0.24$ ,  $p = 0.001$ ) and prospective team relatedness ( $\rho = 0.21$ ,  $p = 0.002$ ). Finally, we assumed that employees' perceptions of having access to adequate information and resources during transition relate to both briefing activities and the overall level of organization (or lack thereof) in the transition process. When examining the correlation between access to adequate information (measured by the 3-item scale from Spreitzer, 1996 on a seven-point Likert-type scale,  $\alpha = 0.89$ ) and access to resources (measured by the 3-item scale from Spreitzer, 1996 on a seven-point Likert-type scale,  $\alpha = 0.86$ ) with the briefing and organization subdimensions of our new scale, we indeed find that access to resources is significantly related to both briefing and process organization ( $\rho = 0.40$ ,  $p = 0.000$  and  $\rho = 0.43$ ,  $p = 0.000$ , respectively) and that access to information is also significantly related to both briefing and process organization ( $\rho = 0.42$ ,  $p = 0.000$  and  $\rho = 0.45$ ,  $p = 0.000$ , respectively).

## Appendix E. Transient error

Transient errors are variations in responses to measures that are a result of random variations in participants' psychological states across time, and these fluctuations have been shown to have important effects on certain psychological constructs (Schmidt et al., 2003). To assess the magnitude of influence that transient error has on the reliability of our measures, we collected two additional rounds of data from a third sample, which is consistent with (but does not overlap) Sample 1 (i.e., research employees at the same university). This data included all of our measurement items separated by seven weeks. In the first round, 135 employees completed the survey, with 84 of them completing the second round as well. Using this sample of 84 participants, we followed Schmidt et al. (2003) to construct coefficient of equivalence and stability (CES) values for each sub-dimension of the new construct (Schmidt et al., 2003). The CES is a reliability coefficient that measures all three sources of measurement error—namely, specific factor error, random response error, and transient error (Schmidt et al., 2003)—and is determined by correlating two parallel forms of measurement that were administered at different times. Because other reliability coefficients only account for some sources of measurement error, constructing CES values is an ideal way to determine the reliability of new constructs. While our analysis indicates that these sources of measurement error do have some influence on our measures of debriefing (CES = 0.85), reflection time (CES = 0.77), briefing (CES = 0.84), team competence (CES = 0.88), team relatedness (CES = 0.83), and process organization (CES = 0.79), the overall reliability of all measures is still acceptable.

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