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Managing negative emotions from entrepreneurial project failure: When and how does supportive leadership help employees?

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ABSTRACT

Drawing on Affective Events Theory and a sample of 112 matched manager-employee dyads involved in failed corporate entrepreneurial projects, we develop and test a model of when and how managerial leadership can foster high employee performance in their subsequent endeavors. Through path analysis modeling, we show that perceptions of supportive managerial leadership behaviors can limit the detrimental effects of recalled negative emotions from prior project failures on employee job satisfaction, and through job satisfaction, on employee performance. However, the benefits of supportive managerial leadership behaviors dissipate with more time since the project has failed.

Executive summary

The failure of entrepreneurial projects can instill substantial, long-lasting negative emotions in the employees involved in them, which may decrease not only their motivation at work but also their affective commitment to their organizations. However, to date we know little how managerial leaders can help their subordinate employees recover from project failures. Therefore, we set out to answer the following research question: how can leadership behaviors help employees manage negative emotions in the aftermath of a major entrepreneurial project failure to enhance their job satisfaction and performance?

To address this question, we draw on affective events theory and the literatures on leadership in innovative environments and supportive leadership. We argue that perceptions of supportive leadership moderate the extent to which recalled negative emotions after the failure of their last major entrepreneurial project can damage employees' current job satisfaction and, through job satisfaction, their performance at work. Because employees' cognitive judgments of prior events change over time, we also explore the potential influence of the time elapsed since employees' last major project failure on the power of this moderating effect. Data from 112 matched manager-employee dyads involved in failed entrepreneurial projects reveal that the moderating effect of supportive leadership on the relationship between recalled negative emotions and job satisfaction is contingent on time such that the moderation is stronger when the time elapsed since the failure occurred is short than when it is long. Our analysis also shows that the effects of supportive leadership explain how recalled negative emotions stemming from a prior experience of project failure and the time elapsed since the failure occurred influence employee performance via job satisfaction.

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Our study offers three main insights. First, extant work on managing entrepreneurial projects emphasizes the importance of individuals in leadership roles creating psychologically safe climates that tolerate failure and are socially supportive of employees. By showing that employees' job satisfaction and performance critically depend on both the timing and the extent of perceived supportive leadership helping them manage their negative emotions after project failure, our study offers an important first step toward an understanding of leadership in project-failure contexts that accounts for varied timeframes since failure, managerial leadership behaviors, and employee reactions to failure.

Second, the corporate entrepreneurship literature suggests that the failure of entrepreneurial projects can have both negative and positive effects on employees and their organizations. By showing that the time elapsed since project failure and supportive leadership conjointly explain the extent to which recalled negative emotions after prior failure diminish employee performance, we identify critical conditions under which the negative (as opposed to positive) implications of project failure for employees (and, by extension, their organizations) are particularly severe.

Finally, a controversial debate endures about whether interpersonally oriented leadership behaviors, like supportive leadership, are appropriate when employees face high levels of uncertainty. Our study suggests that in the immediate (but not in the distant) aftermath of an entrepreneurial project failure, supportive leadership does indeed play an important role in overcoming the potential negative consequences of the failure.

1. Introduction

To successfully engage in corporate entrepreneurship—"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" (Sharma and Chrisman, 1999: 18)—firms must continuously evaluate their portfolios of corporate entrepreneurship projects and stop those projects that show low probability of success (Li and Chi, 2013; McGrath, 1999; Patzelt et al., 2020). Such project failure—"the termination of an initiative to create organizational value that has fallen short of its goals" (Shepherd et al., 2011: 1230)—can lead employees to identify possible roots of that failure, adjust their approaches to future projects accordingly (McGrath, 2001; Petrovski, 1985), and so potentially improve their individual performance. At the same time, the failure of entrepreneurial projects can instill substantial, long-lasting negative emotions in the employees involved in them, which may decrease not only their motivation at work but also their affective commitment to their organizations (Shepherd et al., 2009; Shepherd et al., 2011; for a review see Ucbasaran et al., 2013). Employees are better able to manage negative emotions from entrepreneurial project failure when their cognitive orientation oscillates between working through the failure experience and distracting themselves from this experience (Shepherd et al., 2011) and when they work in an organizational environment that accepts failure as a possible outcome of entrepreneurial projects (Edmondson, 2004; Farson and Keyes, 2002; Patzelt et al., 2020).

However, although existing work provides insights into the individual and organizational factors that can help employees manage their negative emotions after the failure of entrepreneurial projects, neither the corporate entrepreneurship nor the leadership literature acknowledges the potential role of supervising managers in the aftermath of entrepreneurial project failure. Ignoring supervisor-employee dyads in this context is a critical omission not only because supervisors "are formally responsible for monitoring and regulating the performance of others" (Sheridan and Ambrose, 2020: 2) but also because it is well known that supervisors shape their subordinate employees' attitudes toward their organizations (Bear et al., 2010; Wayne et al., 2002) and their behaviors at work (Judge et al., 2006; Settoon et al., 1996). Indeed, the success of entrepreneurial projects depends, in part, on managers leading employees such that they yield high individual performance (Reid et al., 2018; Simsek et al., 2015). Studying employee-leader dyads after entrepreneurial project failure may therefore provide major insights for scholarship on entrepreneurial project management and employee performance in innovative firms. In particular, this research could help corporate entrepreneurship managers learn how to best allocate their limited resources (Hornsby et al., 2002; Kuratko et al., 2005; Ren and Guo, 2011) to foster high employee performance. It may also yield a better understanding of how employees, in the wake of setbacks, can maintain, regain, or develop high job satisfaction to yield high performance (Weiss and Cropanzano, 1996). As such, we set out to answer the following research question: how can leadership behaviors help employees manage negative emotions in the aftermath of a major entrepreneurial project failure to enhance their job satisfaction and performance?

Specifically, we outline a model in which perceptions of supportive leadership moderate the extent to which recalled negative emotions after the failure of their last major entrepreneurial project can damage employees' current job satisfaction and, through job satisfaction, their performance at work. Because employees' cognitive judgments of prior events and thus these events' impact on their job satisfaction and performance change over time (Weiss and Cropanzano, 1996), we also explore the potential influence of the time elapsed since employees' last major project failure on the power of this moderating effect. To develop our hypotheses, we draw on affective events theory (AET, Weiss and Cropanzano, 1996) and the growing literatures on leadership in innovative environments (Ensley et al., 2006; Ling et al., 2008; Reid et al., 2018) and supportive leadership (House, 1981; Rooney and Gottlieb, 2007; Sharma and Pearsall, 2016). We test our conceptual model using structural equation modeling (SEM) on data from 112 matched manager-employee dyads involved in failed entrepreneurial projects. By doing so, we make the following contributions to the literatures on corporate entrepreneurship and leadership in entrepreneurial contexts.

First, extant research on managing entrepreneurial projects emphasizes the importance of individuals in leadership roles creating psychologically safe climates that tolerate failure (Edmondson, 2004; Farson and Keyes, 2002) and are socially supportive of employees (Patzelt et al., 2020; Shepherd, 2009). However, these studies do not explain *when* such leadership is particularly effective. By showing that employees' job satisfaction and performance critically depend on both the timing and the extent of perceived supportive leadership helping them manage their negative emotions after project failure, our study offers an important first step toward

developing a leadership model for project-failure contexts that accounts for varied timeframes since failure, managerial leadership behaviors, and employee reactions to failure.

Second, the extant corporate entrepreneurship literature suggests that the failure of entrepreneurial projects can have both negative (Shepherd, 2009; Shepherd et al., 2011) and positive (McGrath, 2001; Petrovski, 1985) effects on employees and their organizations, but this literature provides little insights under which conditions such effects are most likely to occur. By showing that the time elapsed since project failure and supportive leadership conjointly explain the extent to which recalled negative emotions after prior failure diminish employee performance, we identify critical conditions under which the negative (as opposed to positive) implications of project failure for employees (and, by extension, their organizations) are particularly severe.

Finally, while leadership research recognizes the importance of contextualizing leadership (for a review, see Avolio et al., 2009), a controversial debate endures about whether interpersonally oriented leadership behaviors, like supportive leadership, are appropriate when employees face high levels of uncertainty (Bedell-Avers et al., 2008; Shamir and Howell, 1999; Slatter et al., 2011). Our study suggests that in the immediate (but not in the distant) aftermath of an entrepreneurial project failure, supportive leadership does indeed play an important role in overcoming the potential negative consequences of failure. Therefore, the ongoing debate can be advanced by considering the timing of leadership behaviors in addition to what type of leadership is applied to bolster employee performance in uncertain contexts.

2. Theoretical development

We build on affective events theory (AET, Weiss and Cropanzano, 1996) and the leadership literature (House, 1981; Rooney and Gottlieb, 2007; Sharma and Pearsall, 2016) to develop our supportive leadership model of managing employees' negative emotions after entrepreneurial project failure. We illustrate this model in Fig. 1. Specifically, we explain how supportive leadership (from the employee's perspective) and time since project failure conjointly moderate the relationship between employees' recalled negative emotions after their last major project failure and their current job satisfaction, and through job satisfaction, their current job performance. We detail the nature of these relationships in the sections that follow.

2.1. Employees' negative emotions after entrepreneurial project failure

Entrepreneurial projects are "endeavors related to an organization's identification, evaluation, and exploitation of potential opportunities" (Patzelt et al., 2020: 3). Although these projects are related to the firm's opportunities, they are diverse in innovativeness, strategic importance, and structural autonomy (Sharma and Chrisman, 1999). Indeed, firms pursue entrepreneurial projects in different industries. For example, entrepreneurial projects have been studied in engineering, hardware, and software (Behrens and Patzelt, 2016; Corbett et al., 2007) as well as in mining (Bakker and Shepherd, 2017), the construction of superyachts (Jennings et al., 2015), and services (Salunke et al., 2013).

Corporate entrepreneurship studies pay particular attention to the negative emotions employees experience after the failure of entrepreneurial projects. Extant work has found that employees may experience varying levels of denial, anger, sadness, anxiety, frustration, and/or depression from failure (Dillon, 1998; Murray and Cox, 1989; Shepherd et al., 2016). The level of these negative emotions depends on the individual and work context. For example, employees who adopt a cognitive oscillation orientation and switch between working through the failure experience and distracting themselves from this experience can better manage negative emotions from failure (Shepherd et al., 2011). Further, those who work in environments that punish failure (Edmondson, 2004; Farson and Keyes, 2002) and provide little support for employees in the aftermath of a failure (Patzelt et al., 2020; Shepherd, 2009) show, on average, higher levels of negative emotions than employees in failure-tolerant and supportive work environments.

While some studies have found that negative emotions from entrepreneurial failure can stimulate search and thus learning (He et al., 2018; McGrath, 2001; Petrovski, 1985), various studies have documented how these negative emotions can decrease individuals' motivation on entrepreneurial projects, commitment to their firms, and learning. For example, Shepherd et al. (2011) found that R&D

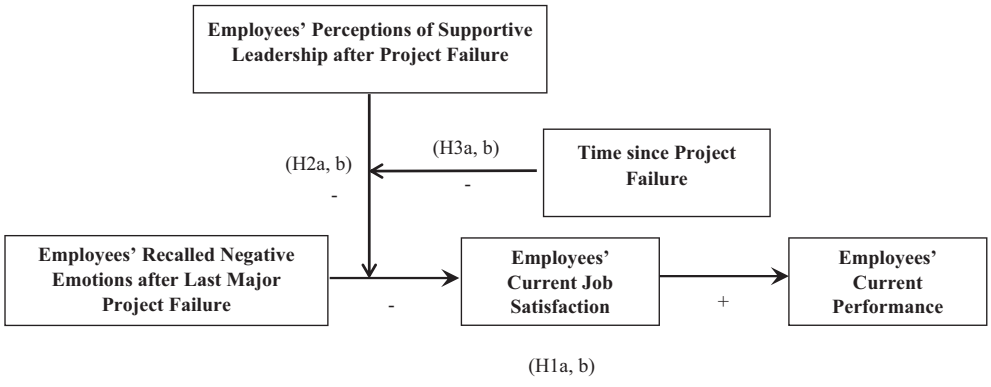

Fig. 1. Leadership model of employee performance after entrepreneurial project failure.

scientists involved in failed entrepreneurial projects reported disappointment and detachment from coworkers as a result of project failure, which was associated with diminished affective commitment to their organizations. In another study, He et al., 2018 reported that entrepreneurs who are unable to regulate their negative emotions after failure experience particularly low levels of learning when they fail repeatedly within a short time period. Finally, one study in the engineering industry documented that negative emotions from project failures can not only diminish employees' motivation at work, but also their psychological and physical well-being (Shepherd et al., 2014). These findings indicate that project failure may have substantial downsides for those involved.

Finally, time passed since an entrepreneurial project failure appears to impact employees' recovery from that failure. On the one hand, time allows employees to make sense of the failure and understand its often complex antecedents, thus facilitating learning (Daft and Weick, 1984; Thomas et al., 1993). Further, time can reduce employees' negative emotions from entrepreneurial project failure. Although there is variance across individuals in how long they experience negative emotions from failure, for some employees, these emotions and their effects may persist for months or even years (Shepherd et al., 2014; Shepherd et al., 2011). However, as "time heals all wounds," eventually, these negative emotions vanish over time. With more time passing since the failure, employees can break the emotional bonds to their projects and start engaging in new projects and activities that become important to them and help them re-gain motivation and build commitment to their organizations (Shepherd et al., 2011).

In sum, extant work shows that the failure of entrepreneurial projects can lead to substantial negative emotions for employees involved in these projects, which may positively and/or negatively impact the employees and their firms. Despite these insights, to date, there is a limited understanding of how and when employees' current job satisfaction and job performance are affected by the negative emotions from a past failure event. To explore these issues, we turn to AET.

2.2. Affective events theory: linking employees' recalled negative emotions after entrepreneurial project failure to their job satisfaction and performance

AET was developed as an alternative to traditional theoretical perspectives trying to explain individuals' performance based on their job satisfaction—"a positive or negative evaluative judgment of one's job or job situation" (Weiss and Cropanzano, 1996: 2). While traditional theories propose that employees' job satisfaction depends on a set of rather stable factors, such as their dispositions (Staw and Ross, 1985) and features of their organizational (Locke, 1976) and social (Adler et al., 1985) environments, AET emphasizes discrete events at work in explaining job satisfaction (Weiss and Cropanzano, 1996). Therefore, since entrepreneurial project failures are discrete work events for those involved in the project, AET appears as an appropriate theoretical lens for studying our research question.

Central assumptions of AET are that employees' affective experiences at work fluctuate over time, that discrete events are proximal causes of employees' affective reactions, and that these affective reactions influence employees' job satisfaction (Weiss and Cropanzano, 1996). More specifically, drawing on Wilson and Hodges (1992), Weiss and Cropanzano (1996) argue that employees form judgments about their job satisfaction "on demand"— that is, at the time they are asked (by themselves or others) for their judgments. To do so, they "consult a large 'database' of relevant information including, presumably, affective experiences" associated with prior events (p. 49). For example, employees asked about their job satisfaction may recall the emotions they experienced from past projects, and based on these memories inform their job satisfaction judgments. AET also acknowledges that individuals' recall of such events and associated emotional experiences may be incorrect or biased; however, it is employees' perceptions of past affective events at the time they are retrieved that constitute the "database" that informs their current judgments of job satisfaction.[1]

Finally, AET suggests that based on their current judgments of their jobs as reflected in their job satisfaction, employees adjust their performance-related behaviors at work. These performance-related behaviors result from deliberate decisions based on employees' job situations, for which their job evaluations (i.e., satisfaction) are an important decision cue (Judge et al., 2001). Thus, job satisfaction is an important link for explaining the relationship between employees' emotions from past work events and their performance (Weiss and Cropanzano, 1996).[2] That is, employees' recalled emotional experiences from past entrepreneurial projects are likely to influence their current job satisfaction judgments, which in turn affects their performance at work.

Contextualizing AET in the failure of entrepreneurial projects therefore provides a theoretical basis for understanding how such failure influences employees' current job satisfaction and performance. Specifically, the lower the negative emotions employees recall having experienced after prior project failure, the higher they judge their job satisfaction. Moreover, employee performance may be driven by employees' current job satisfaction based on their judgments of prior failure and the emotions they recall after such failure.[3] This argument is supported by extant research suggesting that more positive job attitudes are positively associated with various behaviors that contribute to employee performance in the context of entrepreneurial projects. For example, Hornsby et al. (2009) suggest that more positive job attitudes increase employees' generation of novel ideas. Moreover, employees' affective commitment to their

[1] For example, to facilitate the recall of events generating positive emotions at work and thus increase employees' job satisfaction, Weiss and Cropanzano (1996) suggest that managers should facilitate daily positive experiences (even if they are only minor) for employees rather than large recognition ceremonies or bonuses. Employees tend to forget the positive affective experiences of such one-time events, so the beneficial effect of these events for job-satisfaction judgments can diminish rather quickly.

[2] AET also acknowledges the possibility that emotions from a prior work event can directly impact employee performance. However, these affect-driven effects are expected to be more transient and short term in nature. Therefore, in this paper, we focus on judgment-driven behaviors resulting from employees' job satisfaction, which are expected to be more stable over time (Weiss and Cropanzano, 1996).

[3] We empirically test for a potential direct relationship between negative emotions and job performance.

organization is associated with entrepreneurial project success (Patzelt et al., 2020). In contrast, studies have also shown that low job satisfaction can interfere with employees' future attempts to produce and understand new and diverse information and generate solutions to problems when working on a new project (Gilson and Shalley, 2004; Reiter-Palmon and Illies, 2004). Therefore, we propose the following baseline hypotheses[4]:

Hypothesis 1a. There is a negative relationship between employees' recalled negative emotions after the failure of their last major entrepreneurial project and their current job satisfaction.

Hypothesis 1b. There is a negative indirect relationship between employees' recalled negative emotions after the failure of their last major entrepreneurial project and their current performance via job satisfaction.

While AET helps establish the link between employees' recalled negative emotions from a past project failure and their current job satisfaction and performance, AET also suggests that the organizational environment may play an important role in shaping the nature of these relationships (Weiss and Cropanzano, 1996). In this context, corporate managers who lead employees involved in failed entrepreneurial projects seem to play an important role. Corporate managers can influence employees' perceptions of their organization (Bear et al., 2010; Wayne et al., 2002) because they are, to a considerable extent, responsible for designing employees' work environments (Avolio et al., 2009; Judge et al., 2004). Indeed, AET studies suggest that managerial leadership is a key contextual variable that helps explain differences in the consequences of affective work events for employees (Pirola-Merlo et al., 2002; Reynolds Kueny et al., 2020; Wegge et al., 2006). Therefore, we theorize that managerial leadership is an important factor shaping the extent to which recalled negative emotions after the failure of their last major entrepreneurial project impact employees' job satisfaction and performance.

2.3. The role of perceived supportive leadership in managing employees' negative emotions after entrepreneurial project failure

While there are many different types of managerial leadership behaviors, for the context of managing employees' negative emotional responses to the failure of entrepreneurial projects, supportive leadership behaviors (e.g., Allen et al., 2004; Kahn and Byosiere, 1992) appear particularly relevant. Supportive leadership behaviors include being approachable and considerate (Greene and Schriesheim, 1980; House and Dessler, 1974) and providing feedback when employees have done a good job (e.g., Sharma and J. Pearsall, 2006). Supportive leadership behaviors also include broader conceptualizations, such as showing concern for employees and taking their needs and preferences into account, as well as sympathizing with, caring for, and listening to employees (House, 1981; Rafferty and Griffin, 2006). These conceptualizations ultimately underscore the relevance of managers being sensitive to their employees' needs to support them in specific organizational situations (Rooney and Gottlieb, 2007).

Extending these approaches to situations in which employees experience negative emotions following project failure and with a more specific focus on AET and emotional support (Weber and Patterson, 1996), we define supportive leadership as *behaviors through which leaders communicate emotionally supportive messages and nurturing expressions to employees*. This definition captures leaders' supportive messages that communicate caring and empathetic understanding and reduce employees' anxiety and uncertainty after project failure experiences. As a result, employees may perceive their managers to be respectful and sensitive regarding matters of importance to the employees (Bass, 1990). This perception is a manifestation of the "buffering hypothesis," which states that perceiving emotional support from others "buffers," or protects, individuals from the potentially negative effects of stressful events (Cohen and Wills, 1985), such as the failure of an entrepreneurial project.

From an AET perspective, perceptions of supportive leadership may buffer employees from their negative emotions after prior entrepreneurial project failure by diminishing the attitudinal consequences of these (recalled) emotions (Walter and Bruch, 2009). That is, employees whose leaders displayed supportive behaviors after prior project failure may be able to retain high job satisfaction and performance irrespective of their negative emotions after that failure. To better understand these effects, we draw on Cohen and Wills (1985: 311) who suggest that supportive leaders may help employees by (1) generating positive emotions in employees, (2) enhancing employees' recognition of their self-worth, and (3) fostering a sense of predictability and stability in employees' situations.

First, supportive managers may display positive emotions after entrepreneurial project failure. These positive emotions can be contagious (Hatfield et al., 1992), spilling over to their employees. Therefore, in addition to recalling the negative emotions after project failure, employees may also recall having experienced positive emotions from supervisor support (Weiss and Cropanzano, 1996). For example, in conversations after a failed project, a supportive leader may trigger positive emotional experiences in his or her subordinate employees (through emotional contagion) by expressing hope that the next project will be successful or confidence that the failure will not hurt employees career perspectives. This co-activation of positive emotions can help employees better make sense of their negative emotions (Larsen et al., 2003) as specific to the focal failed prior project but unrelated to other aspects of their work and careers. Thus, when forming judgments about their current job satisfaction, these employees will consider parts of their jobs and experiences at work that are unrelated to the prior project failure. Therefore, consistent with the "undoing" hypothesis (Fredrickson, 2001), recalling positive emotional experiences generated by supportive leadership after project failure can, at least partly, "undo" or

[4] Consistent with others (Patzelt et al., 2020; Zhang et al., 2014), we formulate separate hypotheses for the direct relationships between the independent and mediator variables and the mediated relationship between the independent and dependent variables, respectively. This allows us to explore a potential relationship between employees' emotions after project failure and job satisfaction independent of a potential mediating effect of job satisfaction on employees' job performance (consistent with AET's focus on the impact of affective work events on job satisfaction).

correct the impact of employees' recalled negative emotions after that failure on job satisfaction and, through job satisfaction, on employee performance.

Second, the relationship between recalled negative emotions after prior entrepreneurial project failure and employees' current job satisfaction may be weakened when employees' perceptions of supportive leadership have enhanced their sense of self-worth in the aftermath of the failure. After the failure of a project, a manager may reaffirm his or her employees' value and ability, for example, by emphasizing that employees did good work during their failed project and that the intermediate results and milestones achieved can be a valuable point of departure for future projects. Supportive managers can further highlight the important learning outcomes of failed projects in debriefing sessions (Von Krogh, 1998) and provide employees time and resources to reflect on these insights (Patzelt et al., 2020; for the lack of learning by insufficient time to reflect see Shepherd et al., 2014). To the extent these managerial behaviors enhanced employee self-worth in the aftermath of a prior project failure, supportive managers direct employees' attention toward the positive information and feedback (Wu and Griffin, 2012) that helped the employees accept and tolerate the negative emotions (Larsen et al., 2003) from the failure in such a way that these emotions have less impact on their current judgments. Therefore, employees' enhanced self-worth after prior project failure based on their perceptions of supportive leadership likely reduces the negative effect of their recalled negative emotions after this failure on their current job satisfaction. Following AET, we also expect through job satisfaction, a reduced detrimental effect of these recalled negative emotions on employee performance.

Finally, employees' current job satisfaction and performance are likely to be less influenced by recalled negative emotions when supportive leadership has enhanced employees' feelings of predictability and security after prior project failure. In the aftermath of a failure event, employees may feel uncertain as they move into a new team environment and onto a new project, especially about their own and their new co-workers' competencies and whether they can build positive working relationships with them (Patzelt et al., 2020). Supportive managers can provide a sense of predictability and stability for these employees, for example, by explaining each team member's skills and why they are important to the new project's success. Further, supportive managers can facilitate the development of interpersonal connections by instituting regular meetings, forming sub-teams, and convening social events in which team members get to know each other (Patzelt et al., 2020; Spencer and Spencer, 2008). Indeed, some employees may also feel uncertain about their incomes (e.g., bonuses) and even job security after project failure (Jones and Butler, 1992; Monsen et al., 2010), but supportive managers can provide information that mitigates these concerns. Therefore, perceptions of predictability and security created by supportive leaders can reduce secondary sources of stress emerging from entrepreneurial project failure, thereby helping employees "ride out" the negative emotions created by the failure. Thus, these employees' current job satisfaction and performance become less dependent on the negative emotions they recall having experienced. Based on the above reasoning, we posit the following:

Hypothesis 2a. Supportive leadership moderates the negative relationship between employees' recalled negative emotions after the failure of their last major entrepreneurial project and their current job satisfaction such that this relationship is less negative when perceived supportive leadership was high after the failure than when it was low.

Hypothesis 2b. Supportive leadership moderates the negative indirect relationship between employees' recalled negative emotions after the failure of their last major entrepreneurial project and their current performance via job satisfaction such that this indirect relationship is less negative when perceived supportive leadership was high after the failure than when it was low.

Although our hypotheses suggest that supportive leadership plays an important role in the aftermath of project failure, there is the possibility that employees vary in their memories of how important such leadership behaviors were for buffering them from the effects of the negative emotions after their last major project failure. Therefore, consistent with AET, the timeframe since failure may play a critical role in explaining the relationship between employees' recalled emotions and supportive leadership after a past failure event and their current job satisfaction and performance.

2.4. Time since failure as a contingency of the interaction between perceived supportive leadership and employees' recalled negative emotions from entrepreneurial project failure

AET acknowledges that employees' perceptions of past work events may change (Weiss and Cropanzano, 1996). In particular, AET suggests that employees' current job satisfaction judgments are formed by both recalled emotions from past work events and information employees accumulate about these events over time. However, individuals tend to accumulate information about past events in ways consistent with a positive self-image and enhanced self-worth (Wilson and Ross, 2003; Zhang et al., 2018). In particular, people often (unconsciously) form self-serving perceptions of past events partly based on changed or incomplete memories of these events. For example, when assessing the past, people can enhance their self-worth by evading (Gregg et al., 2011; Sedikides, 1993), repressing (Geraerts et al., 2012), or selectively forgetting information that might be detrimental to their self, thereby erasing the original information from their memory (Anderson and Green, 2001; Kim and Yi, 2013) and creating changed memories of past events (Weiss and Cropanzano, 1996).

Thus, employees' job-satisfaction judgments and performance may be (partly) based on self-serving perceptions regarding the role of supportive leadership for managing negative emotions in the aftermath of entrepreneurial project failure. In particular, individuals tend to attribute desired outcomes of past projects to their own abilities rather than to external causes, including the actions of others (Wagner and Gooding, 1997: 276). Being able to manage negative emotions in the failure's aftermath is an important part of employees' abilities in the entrepreneurial context (Shepherd et al., 2009; Shepherd et al., 2014; Shepherd et al., 2011) and is, therefore, likely to be a key component of employees' self-worth. For example, entrepreneurial failure is sometimes described as "the fire that tempers the steel" (Timmons, 1999: 1), and employees' ability to move on after failure is a key characteristic of successfully working on

entrepreneurial projects (Shepherd et al., 2009; Shepherd et al., 2011). Indeed, having successfully managed the consequences of failure may be a "badge of honor" for entrepreneurs (Cardon et al., 2011).

In contrast, needing help from others, such as from supportive leaders in managing one's negative emotions in the aftermath of an entrepreneurial project failure, may be seen as a weakness and inconsistent with the positive self-image of an employee working on entrepreneurial projects. While they may still remember that their leaders did engage in supportive behaviors in the aftermath of project failure, over time, employees may develop self-serving perceptions to enhance their self-worth and begin to recall these leadership behaviors as being rather unimportant for managing their negative emotions after the failure. These employees may become less likely to attribute their successful management of negative emotions after the failure to supportive leadership, instead attributing this success to their own abilities. To the extent such changing memories and emerging self-serving perceptions inform employees' current job-satisfaction judgments and thus their performance, the interaction effect between recalled negative emotions and perceived supportive leadership after a prior project failure on job satisfaction diminishes.

However, forming self-serving perceptions by re-interpreting past events can take time. As time elapses, new experiences accumulate, and memories of prior failure fade (Higgins, 1996), leaving room for updating those memories in a way that serves the self (Pronin and Ross, 2006). Therefore, the passage of time creates increasing opportunities for employees to draw on other work events and experiences to re-interpret the aftermath of a past failure event. For example, employees may have mastered challenges on their new projects without the help of their supportive supervisors, and when they form judgments of their current job satisfaction, these experiences on their new projects can color their memories in a way that diminishes their supportive supervisors' role in helping them manage the negative emotions they experienced in the aftermath of the last major project failure.

In contrast, when the time elapsed since prior entrepreneurial project failure is short, employees are likely to have more vivid memories about the role of their supervisors in helping them manage negative emotions in the aftermath of the failure. These employees will have collected only a limited number of other experiences and events since the failure that would have otherwise enabled them to re-interpret the role and importance of supportive leadership after the failure for managing their negative emotions. Therefore, these employees are less likely to develop self-serving perceptions to foster a positive self-image and promote their self-worth by derogating the role of their supportive leaders in managing negative emotions in the aftermath of the failure. Thus, we posit the following:

Hypothesis 3a. The moderating effect of perceived supportive leadership on the negative relationship between employees' recalled negative emotions after the failure of their last major entrepreneurial project and their current their job satisfaction is contingent on the time elapsed since that failure occurred. The moderating effect is stronger when the time elapsed since failure occurred is short than when it is long.

Hypothesis 3b. The moderating effect of perceived supportive leadership on the indirect negative relationship between employees' recalled negative emotions after the failure of their last major entrepreneurial project and their current performance via job satisfaction is contingent on the time elapsed since that failure occurred. The moderating effect is stronger when the time elapsed since failure occurred is short than when it is long.

3. Method

3.1. Sampling procedure and sample

Collecting our data posed some key challenges. First, firms are typically not willing to reveal any information about failed projects because such information could diminish the support of their stakeholders (Urbig et al., 2013). Therefore, identifying and accessing managers and employees involved in these projects is a difficult endeavor. Second, even if they can be identified, team members who have worked on failed projects are often reluctant to provide information about these negative experiences in order to protect their image as a competent employee. This is particularly true when such employees are approached by individuals (e.g., researchers) they do not know (e.g. Shepherd et al., 2014). Third, because employees may over-estimate their performance at work to bolster their positive self-image, self-assessments of job performance tend to be biased. Therefore, we aimed at collecting data on matched manager-employee dyads and draw on managers' ratings of employee performance. However, such ratings are typically highly confidential, so managers tend to avoid disseminating this information to others outside their firms' human resources departments. Navigating these challenges required us to use a multi-stage process, leveraging personal and professional connections for sampling.

We started with a list of 500 companies at which we had direct contacts through the second author's home university's alumni network in Spain. We sought to select key potential informants from among these contacts who could approach employees in their organizations who they knew had experienced entrepreneurial project failure. As such, we focused on individuals who worked in large companies' human resources departments or who sat on medium-sized companies' management teams. We further focused on individuals from organizations we believed pursued entrepreneurial projects based on their industry and business model. We ultimately identified 47 individuals on the list, all from different firms, who met our selection criteria.

We then emailed these potential key informants, explaining that we were conducting a study on entrepreneurial project failure. This email also asked whether the potential informants would be willing to distribute an email invitation to an online survey to employees who were working under the supervision of a direct manager, had been involved in a failed entrepreneurial project as part of their job functions, and would potentially be willing to confidentially respond to a 15- to 20-minute online survey. To encourage participation, we offered to hold a professional workshop after the study's completion to give the participants and their organizations extended information about our research results and recommendations on how to conduct entrepreneurial projects. Thirty-seven of the

47 individuals agreed to distribute the email survey link among employees who qualified as potential participants. We then sent another email to these key informants, which we asked them to distribute to the selected employee participants. This email contained the link to the online survey.

At this stage, we already anticipated that due to the difficulty of acquiring data on matched manager-employee pairs, our 37 key informants would not yield enough responses from employees who had experienced the failure of an entrepreneurial project. We accordingly also started to ask research assistants and students at the Spanish university mentioned above if they knew employees within the firms on our list who would meet our sampling criteria. We also sent an email containing the link to our online survey to these employees. After eliminating surveys with missing data, this sampling strategy yielded 288 usable responses from employees who had experienced entrepreneurial project failure. In their responses, employees provided the email contacts for their current supervising managers.

Finally, we sent an email to these identified supervising managers, asking them to complete a short questionnaire to appraise the matched employees' current performance at work. One week later, we reminded the managers who had not yet completed the questionnaire of the importance of the study and again asked them to complete the survey. We repeated this step again after another week. We interviewed six of these managers via telephone to confirm that the projects their subordinate employees had pursued met our study's definition of entrepreneurial projects. We ultimately received 112 complete and usable responses from matched manager-employee dyads, representing 38.8% of the total 288 usable responses from employees.[5]

Because we collected data in Spain, we administered the survey in Spanish. To ensure accuracy, we used back-translation (Craig and Douglas, 2006). For scales not previously developed in Spanish, a native speaker with expertise in the field of leadership research and an English literature researcher—a philologist—with a strong command of Spanish translated these scales into Spanish. An additional native speaker and philologist then translated the new versions of the scales from Spanish to English. These individuals all reviewed the original and the back-translated versions of the scales for equivalence and judged them to be equivalent, recommending only minor corrections, which we incorporated in the final version of the survey.

Our sample consisted of 71 female and 41 male employees with an average age of 47.0 (SD = 9.3) years, an average of 9.2 (SD = 7.9) years in their current jobs, and an average of 17.9 (SD = 10.8) years of total work experience. They reported that they had been supervised by their matched managers for an average of 5.8 years, with 92% also reporting that their current managers also managed them before and during their most recent project failure. Respondents estimated that around 18.0% (SD = 18.0%) of their organizations' projects failed.

Sixty-two sample employees were supervised by male managers, and 50 employees were supervised by female managers. These managers were 46.6 (SD = 9.5) years old on average. They reported that they had supervised their matched employees for an average of 6.6 years. Only 3.5% indicated that they were in low-level managerial positions, while 41.1% indicated they were in middle-level positions, and 55.4% indicated they were in high-level positions.

3.2. Measures from the employees

3.2.1. Recalled negative emotions after the last major project failure

We asked the employees to recall their most recent experience with a failed entrepreneurial project that was part of their regular job functions and that had a meaningful negative impact on them. Again, we explained project failure as the termination of a project because it had fallen short of its goals (Shepherd et al., 2011: 1230). To stimulate their memories, we asked the employees to describe this failure in detail. These descriptions showed that our participants were involved in a variety of failed entrepreneurial projects, including the creation of new products and services, the creation of an internationalization process involving exports and foreign direct investments in a new country, the launch of a marketing project to commercialize a new product, the procurement of funding for a social project in a developing region, and more. While we acknowledge that the nature of these projects varies, this heterogeneity was conducive to our study because it enhanced the variance in the employees' (recalled) negative emotions (Shepherd et al., 2011) required for testing our hypotheses.

After the employees described their project failure experiences, we asked them to recall the negative emotions they felt after them. We measured these emotions using 10 items from the Positive and Negative Affect Scale (PANAS, Sandín et al., 1999). These emotions are distressed, upset, guilty, scared, hostile, irritable, ashamed, nervous, jittery, and afraid. We asked the employees to indicate how intensely they felt these negative emotions on a seven-point Likert-type scale with the end points “Not at all” (1) and “Very much” (7). The Cronbach's alpha for the scale is 0.93. Consistent with AET theorizing on the in-situ formation of job-satisfaction judgments, this measurement is retrospective, capturing the employees' memories of their negative emotions following project failure but not necessarily the negative emotions they experienced at the time.

3.2.2. Job satisfaction

We used an established three-item scale to measure employees' current job satisfaction (Thau et al., 2013). The items include “I am satisfied with my job,” “I am happy with my current supervisor,” and “I am pleased to work for my organization.” We asked the employees to rate their agreement with these statements on a seven-point Likert-type scale with the end points “Strongly agree” (7) and “Strongly disagree” (1). The Cronbach's alpha is 0.82.

[5] While our sampling approach successfully acquired a sufficiently large dataset, we do not know how these employees/managers were affiliated with their firms and (failed) projects.

3.2.3. Perceived supportive leadership

We evaluated the employees' perceptions of their managers' supportiveness after project failure using 13 items taken from the communication based emotional support scale (Weber and Patterson, 1996). This scale measures the communication of support (cognitive and emotional) in relationships, and we adapted it to reflect supportive leadership in the aftermath of project failure. An example item is: "My supervisor helped me work through my thoughts and feelings about decisions concerning the failure event." We provide the full list of items in the adapted scale in Table A1 of the Appendix. We asked the employees to react to the statements on this scale using a seven-point Likert-type scale with the end points "Strongly agree" (7) and "Strongly disagree" (1). The Cronbach's alpha is 0.94.

3.2.4. Time since failure

Our survey asked employees to indicate how many months had passed since the failure of the major entrepreneurial project they had described. On average, time since failure was 12.52 month (standard deviation = 18.71 months).

3.3. Measure from the supervisors: employee performance

Our sampling approach aimed to acquire matched responses from employees who had previously experienced the failure of a major entrepreneurial project and their post-failure managers, who may or may not be the same as their pre-failure or failure-concurrent managers. We used a four-item measure of supervisors' current employee performance ratings developed by Podsakoff et al. (1982). These items include "How do you assess this employee's overall performance?", "How do you assess this employee's achievement of goals?", "How do you assess this employee's timely completion of tasks?", and "How do you assess this employee's quality of performance?" We asked the supervisors to react to these statements using a five-point Likert-type scale with the end points "Very good" (5) and "Very poor" (1). The Cronbach's alpha is 0.84.

3.4. Control variables

We included a number of control variables to reduce the likelihood of confounding relationships in our results. First, we controlled for the employees' age because emotional experiences vary across an individual's lifespan (Carstensen et al., 2011).

Second, because there are important differences in how men and women deal with emotional experiences on average (Joseph and Newman, 2010), we controlled for the employees' gender (coded as 1 for males and 0 for females).

Third, we controlled for the employees' *current* positive emotions because these may influence their current job satisfaction (Judge et al., 2001). We used 10 items from the PANAS (Sandín et al., 1999) and asked the employees to rate how much they currently felt the 10 positive emotions on a seven-point Likert-type scale with the end points "Not at all" (1) and "Very much" (7). These emotions are interested, excited, strong, enthusiastic, proud, alert, inspired, determined, attentive, and active. The Cronbach's alpha is 0.88.

Fourth, we controlled for the employees' oscillation-orientated coping (i.e., the switch between loss orientation and restoration orientation in the aftermath of a failure, Shepherd et al., 2011) because those who engage in such coping behaviors are better able to regulate their negative emotions from project failure (Shepherd et al., 2011) and might thus be less dependent on managers' help to do so. We used three items from Shepherd et al. (2011) to capture employees' oscillation-orientated coping behaviors. One item was, "After giving my emotions a rest, I confronted my negative feelings arising from the project failure." The employees assessed their agreement with the items using a seven-point Likert-type scale with the end points "Strongly agree" (7) and "Strongly disagree" (1). The Cronbach's alpha is 0.71.

Fifth, we controlled for the time the employees had spent on their last major failed project because higher time investments can lead to higher identification with a project and thus impact the levels of the resultant negative emotions. We asked the employees about how many weeks they had worked on their last failed project.

Sixth, we controlled for potential transformational changes that could have occurred within the participants' organizations because the emotional experiences related to these changes might overshadow those stemming from project failure. We captured employees' agreement with three items adapted from Rafferty and Griffin (2006) using a seven-point Likert-type scale with the end points "Strongly agree" (7) and "Strongly disagree" (1). One item was, "The company experienced big changes that significantly changed the aims of my department." The Cronbach's alpha is 0.91.

Seventh, we controlled for the number of projects the employees had worked on by the time of the failure relevant to our study because additional projects may have been further sources of the participants' occupational identities, making the focal project failure less influential to their negative emotions and job satisfaction.

Finally, we controlled for the time the employees had worked under their current supervising managers for two reasons: First, the longer the employees had been with their current managers, the better they would likely know each other, potentially influencing the effectiveness of the supervisors' leadership behaviors. Second, this variable controls for situations in which the employees' current managers had not supervised them at the time of their most recent failure (only a few instances in our dataset).

4. Results

4.1. Path analysis modeling

To test the hypothesized relationships, we used path analysis modeling utilizing Stata 16.0. We report the means, standard

Table 1
Descriptive statistics.

Variable	Mean	SD	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Employee performance	4.28	0.57	2.75	5.00	1.00												
2. Job satisfaction	5.61	1.16	2.33	7.00	0.22*	1.00											
3. Negative emotions from failure	2.97	1.35	1.00	6.30	−0.05	−0.15	1.00										
4. Supportive leadership	5.04	1.31	1.31	7.00	0.17	0.57**	−0.01	1.00									
5. Age[a]	40.86	11.23	20.00	62.00	0.08	0.16	−0.11	0.12	1.00								
6. Gender	0.36	0.48	0.00	1.00	−0.05	−0.03	−0.06	−0.04	−0.12	1.00							
7. Positive emotions	3.32	1.09	1.00	6.40	0.08	0.24*	0.05	0.31**	0.03	0.10	1.00						
8. Oscillation orientation	3.84	1.51	1.00	7.00	0.09	0.07	0.63*	0.17	−0.09	−0.01	0.37**	1.00					
9. Time spent on failure[b]	7.71	13.29	0.00	99.00	−0.10	0.04	0.02	0.02	−0.17	−0.09	0.07	0.01	1.00				
10. Time since failure[b]	12.52	18.71	0.00	84.00	−0.02	0.14	0.00	0.18	0.19*	−0.20*	0.24*	0.15	0.23*	1.00			
11. Transformational organization change	2.89	1.53	1.00	7.00	0.10	−0.07	0.21*	−0.09	−0.03	−0.04	0.12	0.24*	0.05	−0.01	1.00		
12. Number of projects worked on	20.07	26.73	0.00	99.00	0.10	0.02	−0.01	−0.02	0.18	−0.09	0.02	−0.06	−0.07	0.10	−0.06	1.00	
13. Time with current manager[a]	5.83	5.52	0.00	30.00	−0.02	0.28**	−0.20*	0.16	0.36**	−0.09	0.13	−0.18	−0.01	0.14	−0.17	0.27**	1.00

$N = 112$.

* $p < 0.05$.

** $p < 0.01$.

[a] In years.

[b] In months.

deviations, minimum and maximum values, and correlations among all the variables in Table 1.[6] We employed path analysis as recent methodological research has indicated that it has decided advantages over other techniques (i.e. ordinary least squares regression) when examining models with indirect relationships (Hayes, 2017; Hayes and Scharkow, 2013; Preacher and Hayes, 2004; Preacher and Selig, 2012). We parceled all of the variables that we assessed using multi-item instruments to create single measures, which we then included in subsequent analyses. Parceling enables greater reliability and commonality; larger ratios of common-to-unique factor variances; and a lower likelihood of distributional violations, particularly when analyzing smaller samples (Bagozzi and Heatherton, 1994; Little et al., 2002). Additionally, parceling improves the ratio of estimated model parameters to sample size, which is beneficial for our analysis (Bandalos and Finney, 2001). Moreover, it has been suggested that parceling is almost always a preferable choice (Coffman and MacCallum, 2005), and that parceling is particularly advantageous when using unidimensional, well-established, and validated measures (Little et al., 2013). Because we are interested in the structural relationships between our variables with less emphasis on validating the measurement models of our already established variables, we chose to parcel all our multi-item variables and used the constructed measures in all subsequent path analyses. Analysis of the goodness-of-fit indices for our model shows excellent fit ($\chi^2 = 22.22$, $df = 15$, CFI = 0.92, TLI = 0.91, RMSEA = 0.06, SRMR = 0.03). We display the results in Table 2.

Hypothesis 1a of our base model states that there is a negative relationship between employees' recalled negative emotions from a prior entrepreneurial project failure and their current job satisfaction. We find a significant negative relationship between recalled negative emotions and employees' job satisfaction ($\beta = -0.14$, $p = 0.03$), supporting Hypothesis 1a.

Hypothesis 1b of our base model states that there is a negative indirect relationship between employees' recalled negative emotions after the failure of their last major entrepreneurial project and their current performance via job satisfaction. Our model shows a significant positive relationship between job satisfaction and their current performance ($\beta = 0.16$, $p = 0.04$). When combined with the previously noted negative relationship between recalled negative emotions and employees' job satisfaction, these findings indicate the presence of a negative indirect relationship between employees' recalled negative emotions after the failure of their last major entrepreneurial project and their current performance via job satisfaction. To further examine the presence of indirect effects outlined in the base model of our study we used the bootstrapping method detailed by Preacher and Hayes (2008) with 5000 iterations. Our results indicate that these recalled negative emotions have a significant indirect effect on performance via job satisfaction ($\beta = -0.02$, $SE = 0.01$, 95% C.I. [−0.042, −0.002]), supporting Hypothesis 1b.

To test for the potential presence of a direct effect of negative emotions on performance, we analyzed an alternative model that included the direct main effect of negative emotions on performance. Although this model has acceptable fit with respect to the goodness-of-fit indices ($\chi^2 = 21.14$, $df = 14$, CFI = 0.91, TLI = 0.88, RMSEA = 0.06, SRMR = 0.03), the chi-squared difference test between our hypothesized base model and this alternative base model is not significant ($\Delta\chi^2 = 1.08$, $p = 0.30$), indicating that including a direct effect between recalled negative emotions and performance does not provide a better fit with the data than our hypothesized model. Additionally, the direct relationship between recalled negative emotions and performance is not significant ($\beta = -0.12$, $p = 0.29$), further supporting the accuracy of our hypothesized base model.[7]

Hypothesis 2a states that supportive leadership moderates the negative relationship between the level of negative emotions stemming from the failure of a prior entrepreneurial project and employees' current job satisfaction such that the relationship is less negative when supportive leadership is high than when supportive leadership is low. We do not find a significant interactive effect between supportive leadership and negative emotions from the failure of a prior project on employees' current job satisfaction ($\beta = 0.10$, $p = 0.20$). Therefore, our analysis does not support Hypothesis 2a.

Hypothesis 2b states that supportive leadership moderates the negative indirect relationship between the level of negative emotions stemming from the failure of a prior entrepreneurial project and employees' current performance via job satisfaction such that this indirect relationship is less negative when supportive leadership is high than when supportive leadership is low. This moderated indirect effect is not significant ($\beta = 0.01$, $p = 0.41$). Therefore, we do not find that perceived supportive leadership significantly moderates the indirect relationship between negative emotions stemming from the failure of a prior entrepreneurial project and employees' current performance via job satisfaction, and our analysis does not support Hypothesis 2b. Our analyses may not have supported Hypotheses 2a and 2b due to the presence of higher-order interactions, such as those postulated in Hypotheses 3a and 3b.

Hypothesis 3a states that the moderating effect of supportive leadership on the negative relationship between negative emotions stemming from the failure of a prior entrepreneurial project and employees' job satisfaction is contingent on the time elapsed since the failure occurred (i.e., time since failure). Specifically, the moderating effect is stronger when time since failure is short than when it is long. We find a significant three-way interaction between supportive leadership, negative emotions stemming from the failure of a prior entrepreneurial project, and time since failure ($\beta = -0.20$, p = 0.03). We present an illustration of this effect in the graphs in Fig. 2A and B.

[6] In our sample, the average level of the employees' recalled negative emotions after their last major project failure is 2.97 (SD = 1.35) on a seven-point Likert-type scale. While this value may appear to be low, it is consistent with average levels reported in prior studies on failed entrepreneurial projects (Shepherd et al., 2011: mean = 1.97, SD = 1.13) and failed entrepreneurial ventures (Jenkins et al., 2014: 3.04, SD = 1.52). It is important to note, however, that there is considerable variance in respondents' assessments (min = 1.0; max = 6.3). That is, most of the employees in our sample experienced medium levels of negative emotions, while some experienced very low levels and others very high levels.

[7] We note that the results displayed in Table 2 show that the interactions between negative emotions and time since failure and between supportive leadership and time since failure do not indicate any statistically significant association with job satisfaction. Thus, in forming job-satisfaction judgments, employees do not assess their recalled negative emotions and perceived supportive leadership differently when time since failure increases (but they do assess the interaction differently).

Table 2
Summary of SEM results.

Relationship		β	se	p-Value	95% CI	
Theoretical model	Negative emotions → job satisfaction	−0.14	0.06	0.03	−0.29	−0.01
	Supportive leadership → job satisfaction	0.56	0.06	0.00	0.44	0.68
	Time since failure → job satisfaction	0.04	0.08	0.58	−0.11	0.20
	Negative emotions * supportive leadership → job satisfaction	0.10	0.08	0.20	−0.05	0.26
	Negative emotions * time since failure → job satisfaction	0.18	0.10	0.08	−0.02	0.38
	Supportive leadership * time since failure → job satisfaction	0.04	0.09	0.66	−0.13	0.21
	Negative emotions * supportive leadership * time since failure → job satisfaction	−0.20	0.09	0.03	−0.38	−0.02
	Job satisfaction → employee performance	0.16	0.08	0.04	0.01	0.36
Control variables	Age → employee performance	0.00	0.00	0.55	−0.01	0.01
	Gender → employee performance	−0.04	0.11	0.72	−0.25	0.17
	Positive emotions → employee performance	−0.01	0.05	0.99	−0.10	0.10
	Oscillation orientation → employee performance	−0.02	0.04	0.58	−0.05	0.09
	Time spent on failure → employee performance	−0.01	0.01	0.20	−0.01	0.00
	Transformational organizational change → employee performance	0.04	0.03	0.21	−0.02	0.11
	Number of projects worked on → employee performance	0.00	0.01	0.38	−0.01	0.01
	Time with current manager → employee performance	−0.13	0.10	0.20	−0.34	0.07

To understand the differences between the graphs for long and short time since failure displayed in Fig. 2A and B, respectively, we employed a slope difference test (Aiken et al., 1991). This analysis indicates that the slope of the relationship between recalled negative emotions stemming from entrepreneurial project failure and employees' job satisfaction when perceived supportive leadership is low and time since failure is short (solid line in Fig. 2A) is significantly different from all other lines displayed—particularly from the combinations of high supportive leadership and short time since failure ($t = -2.83$, $p = 0.01$, dotted line in Fig. 2A), low supportive leadership and long time since failure (solid line in Fig. 2B; $t = -2.06$, $p = 0.04$), and high supportive leadership and long time since failure (dotted line in Fig. 2B; $t = -2.51$, $p = 0.01$). We do not find any significant slope differences between other possible combinations of supportive leadership and time since failure. Regarding the slopes of the individual lines represented in Fig. 2A and B, we find that the slope of the combination of low supportive leadership and short time since failure (solid line in Fig. 2A) is significantly different from zero ($t = -3.28$, $p = 0.001$), while all other slopes are not significantly different from zero. Taken together, these results indicate that shortly after a project fails, perceived supportive leadership can diminish the negative relationship between recalled negative emotions stemming from that failure and employees' current job satisfaction. However, when the time elapsed since the failure occurred is long, perceptions of supportive leadership have little effect on this relationship, supporting Hypothesis 3a.

Finally, Hypothesis 3b states that the moderating effect of perceived supportive leadership on the indirect negative relationship between recalled negative emotions after the failure of a major entrepreneurial project and employees' current performance via job satisfaction is contingent on the time elapsed since the failure occurred. Specifically, the moderating effect is stronger when time since failure is short than when it is long. Our results indicate that the indirect effect of the three-way interaction between perceived supportive leadership, recalled negative emotions stemming from the failure of a prior major entrepreneurial project, and time since failure is significant ($\beta = -0.02$, $p = 0.04$). In addition to supporting Hypothesis 3a and Fig. 2, our analyses therefore support Hypothesis 3b.

4.2. Robustness checks

We performed multiple robustness checks to corroborate our results. First, it is possible that supportive leadership might, alternatively or in addition to the relationship postulated in our model, moderate the relationship between employees' job satisfaction and performance. We thus tested these two models and compared their fit with the data with the hypothesized model (Table A2 in the Appendix). Both the fit of the model with supportive leadership moderating only the relationship between employees' current job satisfaction and performance ($\chi^2 = 23.09$, $df = 12$, CFI = 0.84, TLI = 0.78, RMSEA = 0.07, SRMR = 0.07) and the fit of the model with supportive leadership moderating both sides of the mediated model ($\chi^2 = 22.95$, $df = 14$, CFI = 0.86, TLI = 0.65, RMSEA = 0.08, SRMR = 0.03) are worse than the fit of the hypothesized model. Further, it is possible that after project failure, perceived supportive leadership directly reduces employees' negative emotions rather than helping employees accept and manage the negative emotions they experience, as we theorized. To explore this possibility empirically, we added a direct effect between supportive leadership and negative emotions to the model displayed in Fig. 1. However, this additional relationship is not statistically significant ($\beta = -0.01$, $p = 0.91$), and the model fit remains essentially unchanged. Moreover, it is possible that employees experiencing low job satisfaction at the time of our survey may have recalled their managers as less supportive than employees experiencing high job satisfaction. Therefore, we estimated a structural equation model in which we exchanged the relationship between recalled negative emotions and job satisfaction. The fit indices of this alternative model ($\chi 2 = 80.73$, df = 15, CFI = 0.36, TLC = 0.31, RMSEA = 0.19, SRMR = 0.05) indicate that it has a much worse fit with the data than our proposed model. All these findings support the model shown in Fig. 1.

Second, scholars suggest that many of the linear relationships reported in the management research literature could actually be curvilinear in nature (Pierce and Aguinis, 2013). Specifically, with regard to our model, we acknowledge that it is possible that time since failure could have a curvilinear effect. As such, we also examined what, if any, curvilinear effects time since failure might have on our model. As shown in Table A3 in our Appendix, the interaction between negative emotions and time since failure squared (β =

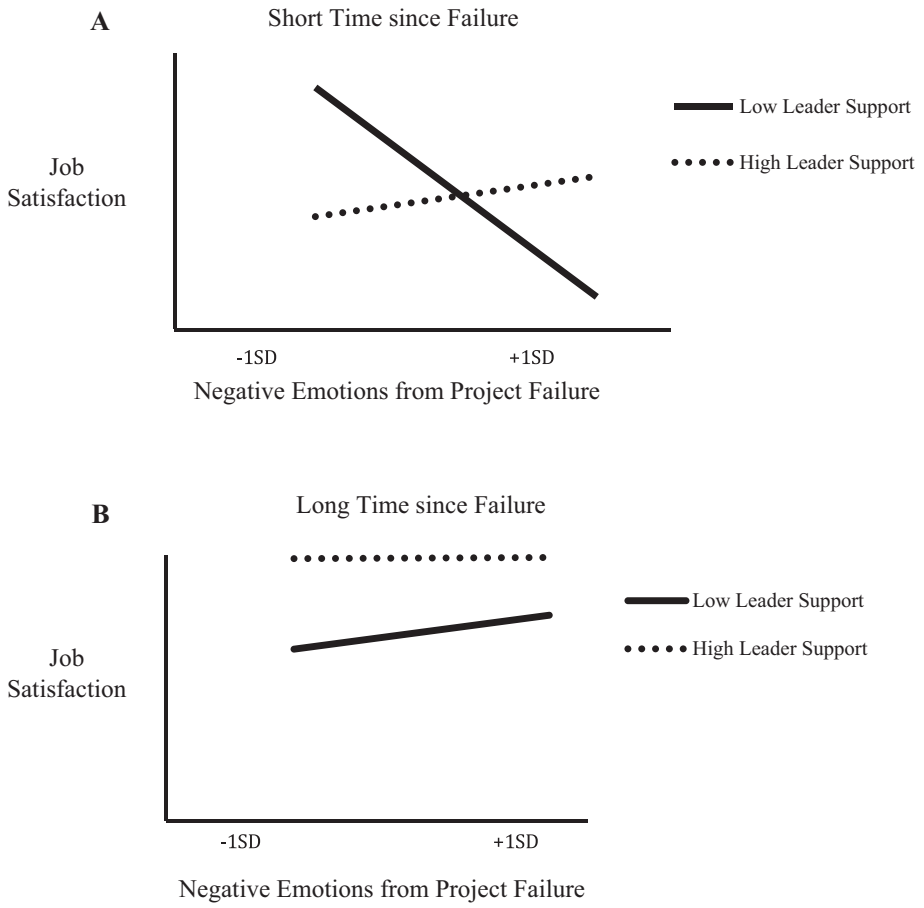

Fig. 2. Employees' recalled negative emotions after prior project failure, perceived supportive leadership, and job satisfaction.

-0.02, $p = 0.30$); the interaction between supportive leadership and time since failure squared ($\beta = 0.10$, $p = 0.31$); and the three-way interaction between recalled negative emotions, perceived supportive leadership, and time since failure squared ($\beta = 0.02$, $p = 0.93$) are all non-significant. Therefore, we do not find support for any curvilinear effects of time since failure in our data.

Third, we examined our model using ordinary least squares (OLS) regression and find no substantive differences between the results obtained and those reported above. Further, using OLS analysis, we examined whether the relationships linking employees' recalled negative emotions after a prior project failure to their current job satisfaction, also hold for the full sample of 288 employee respondents. Consistent with the results reported in Table 2, we find a statistically significant three-way interaction between recalled negative emotions, perceived supportive leadership, and job satisfaction ($\beta = -0.08$; $p = 0.03$).

Finally, although only a small number of supervisors ($n = 5$) managed multiple employee participants (two managed four, one managed three, and two managed two employees) in our sample, we also examined our proposed theoretical model using hierarchical linear modeling (HLM). Again, we find no substantive differences between the results from HLM and the findings reported above. The results of these analyses are available upon request from the first author.

4.3. Common method error

Although scholars have presented several arguments regarding the minimal influence that common method variance and source variance have on self-report instruments (Spector, 2006), we endeavored to ensure the validity of the reported results. Our dependent variable is from a different source (the managers) than our independent, moderator, and mediator variables (which come from the employees), indicating that common method variance and source variance are unlikely to influence the findings for the second part of our model. We included a latent method variable in our model to examine what influence, if any, common method error and source error might have on our findings. We did not use Harman's single factor test but rather the latent common source variable technique detailed by Podsakoff et al. (2003). Specifically, we examined an alternative model that contained an additional latent construct upon which we loaded all structural constructs. All relationships in this alternative model are substantively similar to those found in our hypothesized model. Although such tests cannot prove that common method error and common source error are not present, they do provide support for the notion that these potential sources of bias are unlikely to have a significant impact on our results. The results of

these additional tests are available upon request from the first author.

5. Discussion

In this study, we used AET (Weiss and Cropanzano, 1996) and data from 112 matched manager-employee dyads to investigate when and how perceived supportive leadership behaviors influence the impact of employees' recalled negative emotions stemming from prior major entrepreneurial project failure on their job satisfaction and, through job satisfaction, on their performance. We found that the moderating effect of supportive leadership on the relationship between recalled negative emotions and job satisfaction is contingent on time such that the moderation is stronger when the time elapsed since the failure occurred is short than when it is long. Our analysis also shows that the effects of supportive leadership can explain how recalled negative emotions stemming from a prior experience of project failure and the time elapsed since the failure occurred influence employee performance via job satisfaction. These results have implications for the literatures on corporate entrepreneurship, entrepreneurial project failure, and entrepreneurial leadership, to which we now turn.

5.1. Implications for theory

Our focus on AET and job satisfaction allows us to provide novel insights into the role of support and time for employees' recovery from the failure of an entrepreneurial project. Building on the grief literature (Balk et al., 1993), Shepherd et al. (2009) argue that social support groups can provide emotional support in an encouraging setting after entrepreneurial project failure, thereby facilitating employees' recovery from negative emotions and their development of more positive attitudes toward their future projects. Similarly, the innovation literature emphasizes that social support can help project team members develop resilience in the face of setbacks and failure (Moenkemeyer et al., 2012; Todt et al., 2018). Our study, however, suggests that these effects may be short lived; they are most important when the time since the failure of a major entrepreneurial project is short. Over time, employees seem to change their perceptions regarding the aftermath period of a failure event such that they believe supportive leadership played a less important role in their ability to manage negative emotions from the failure and thus re-gain high job satisfaction and performance. Therefore, time seems to be a critical contingency not only for explaining employees' job attitudes based on their gradually diminishing negative emotions after prior project failure ("time heals all wounds," see Shepherd et al., 2011) but also for understanding the role of perceived support from others within organizations. Overall, these findings echo Lévesque and Stephan's (2020) recent proposition that the literature on entrepreneurship (including entrepreneurial projects and corporate entrepreneurship) can benefit from a more explicit consideration of time in the entrepreneurial process.

More generally, extant corporate entrepreneurship literature emphasizes both the importance and challenges associated with managing employees in entrepreneurial contexts (Hornsby et al., 2002; Kuratko et al., 2005; Ren and Guo, 2011). Prior studies propose that supervising managers should create a corporate climate characterized by failure tolerance (Edmondson, 2004; Farson and Keyes, 2002) and social support (Shepherd et al., 2009). Building on these ideas and AET, our study makes an important first step toward developing a leadership model to ensure strong employee performance after the failure of entrepreneurial projects. By emphasizing the importance of both time and perceived supportive leadership behaviors in the aftermath of project failures, this model suggests when and how leaders can help diminish the effect of negative emotions from project failure on employees' job satisfaction and performance.

We further inform extant work on corporate entrepreneurship highlighting how negative emotions stemming from failure can diminish employees' learning, motivation, and attitudes toward their organizations (Shepherd et al., 2009; Shepherd et al., 2014). These studies' focus on the proximal outcomes of negative emotions following project failure implicitly assumes that negative emotions ultimately diminish employees' work performance. However, some have argued the opposite—namely, that project failure can prompt employees' learning (McGrath, 2001; Petrovski, 1985), which may ultimately increase their performance. Our study identifies conditions under which the negative emotions employees recall from project failure may be particularly harmful to employee performance—namely, when employees perceive they received little support from their managers in the aftermath of entrepreneurial project failure; yet, this effect of perceiving little support after failure dissipates with more time passing since the failure event.

More generally, our study is one of the first to show when and how supportive leadership can serve as a buffer that increases employee performance after negative work experiences. Based on past research examining how social support buffers individuals against the negative effects of stressful events (Cohen and Wills, 1985), we know that social support can also moderate the effects of job-related strains (Cummins, 1990; LaRocco et al., 1980). However, evidence demonstrating the specific influence of emotional support (versus instrumental support) as well as the underlying mechanisms and conditions through which this support influences job outcomes is scarce. In this study, we suggest that recalled negative emotions following the failure of an entrepreneurial project do not necessarily lead to negative job attitudes and worse performance. Instead, their effects depend on the timing and extent of supportive leadership offered after such an event.

Our finding that the job-related effects of negative emotions stemming from project failure weaken with increasing supportive leadership contingent on the time since the failure in question adds to discussions on the value of leadership in difficult organizational contexts (Hannah et al., 2009). Some argue that interpersonally oriented behaviors, such as those involved in providing emotional support, are less relevant in crisis contexts compared to directive and transactional behaviors (e.g., Perrow, 1984; Slatter et al., 2011). Given that the failure of a major project can represent a crisis context and is associated with substantial worry, fear, and other negative emotions for those involved (Shepherd et al., 2016), our results suggest the opposite: in particular in the immediate aftermath of the crisis event, managers' attentiveness to employees' emotions can play an important role in difficult organizational situations (Bedell-Avers et al., 2008; Shamir and Howell, 1999), at least with respect to managing employees' job attitudes and performance. It appears

that future discussions on the value of leadership in difficult organizational contexts should consider not only the type, but also the timing of leadership behaviors.

Finally, the results of our study may also be of interest to AET scholars. In particular, there is an ongoing discussion of whether affect-driven or judgment-driven behaviors have a greater impact on employees' job performance. Indeed, in their original article, Weiss and Cropanzano (1996) build on the observation that the relationship between job satisfaction and performance is not uniformly positive across studies (e.g., Judge et al., 2001) to speculate that job performance may be mainly affect driven such that the direct relationship between negative emotions from work events and performance is more pronounced than the indirect relationship via job satisfaction. In contrast, our work provides some evidence (and a theoretical contribution) that is consistent with the emerging body of studies suggesting the importance of the indirect relationship (Carlson et al., 2011; Walter and Bruch, 2009; Wegge et al., 2006) and the context sensitivity of AET (for a recent adaptation to the crowdfunding context, see Davis et al., 2017). In particular, we highlight the important role of time in forming judgments about the past work events and how such altered judgments potentially influence job performance.

5.2. Limitations and future research

As all studies, our work has limitations that future work will hopefully address. First, while our sampling strategy facilitated access to typically hard-to-obtain data, it does not come without limitations. Notably, we administered our survey questionnaire at one point in time. Although our retrospective approach is consistent with our theoretical foundation and although prior research on negative emotions stemming from failure often draws on this approach (e.g., Doern and Goss, 2014; Mantere et al., 2013; Shepherd et al., 2014; Wolfe and Shepherd, 2015), we were unable to empirically demonstrate causal effects.

Further, since we used intermediaries (i.e., key informants in firms and personal contacts at the second author's university) to contact potential study participants and granted them anonymity to motivate participation, we do not know which participants belonged to which firms or worked on which failed projects. Thus, it is possible that some employees were nested within the same failure experiences. However, the small degree of nestedness of employees under the same managers indicates that the vast majority of study participants experienced failure within different teams, departments, and/or firms. In addition, even if two individuals were involved in the same failed entrepreneurial project, that does not mean that they worked on the project for the same amount of time or experienced the failure with the same level of negative emotions—for example, some individuals are more resilient than others.

Limitations also arise from this study's sample. First, our sample size is relatively small. However, while larger sample sizes are generally better for increasing power and detecting differences between competing models (Bentler, 1990), the fact that the hypothesized model fits the data well despite the relatively small sample size provides strong support for our theoretical model. Second, it is possible that the hypothesized associations may not exist or may be stronger in other organizational and cultural environments. However, our focus on one country over a limited timeframe allows us to rule out sources of heterogeneity unrelated to testing our theoretical model. Still, future studies extending these boundary conditions would be valuable. Finally, we conducted our survey about one year, on average, after the employees had experienced their project failure events. While employees whose strong emotions led to temporary absenteeism should have returned to work within this timeframe (see, e.g., Shepherd et al., 2014), we cannot exclude the possibility that other employees on failed projects had left their firms before our survey due to their emotional experiences. Our work shares the limitation of such potential attrition bias with other empirical work on entrepreneurial project failure (Shepherd et al., 2014; Shepherd et al., 2011).

5.3. Implications for practice

Our findings have implications for managers in entrepreneurial contexts in which employees have recently experienced project failure. Because these experiences can have severely negative impacts on those involved (Shepherd et al., 2016), training supportive leaders may be an appropriate way to increase employees' job satisfaction and performance in their wake. When employees have low job satisfaction and performance, managers may also want to analyze these employees' project histories, offering extra support to those who have recently experienced project failure.

The supportive leadership literature identifies different ways leaders can provide support to employees, thus potentially helping them deal with the negative impact of recent project failure. For example, it emphasizes that supportive leaders should encourage employees to work together, trust each other, and focus on collaborating to achieve goals important to their shared projects rather than on achieving their personal goals (Choi et al., 2003; Euwema et al., 2007). Such behaviors are consistent with the notion that leaders can facilitate social interactions in project transitions (Patzelt et al., 2020). In addition, studies emphasize that supportive leaders should show respect and concern for employees and their particular situations (House, 1981; Judge et al., 2004; Rafferty and Griffin, 2006), such as a recent experience of project failure. Finally, supportive leaders should directly interact with employees to encourage initiative and demonstrate trust in them (Carmeli et al., 2010; Jansen et al., 2016; Van de Ven and Chu, 1989). Our study suggests that these leadership behaviors may be valuable for employees after they have experienced the failure of an entrepreneurial project.

Finally, our study indicates that these supportive leadership behaviors are more effective the sooner after project failure they are applied. Thus, although the time immediately after an entrepreneurial project fails may be filled with issues related to strategic re-orientation, the selection and initiation of new projects, and the re-allocation of resources, it is important that leaders nevertheless allocate sufficient time to engage in supportive behaviors that can help employees maintain, regain, or develop high job satisfaction and performance.

5.4. Conclusion

Entrepreneurial project failure is painful for many employees. We illustrate that supportive leaders play an important role in helping employees manage the negative emotions in the aftermath of project failure, thereby improving their job satisfaction and performance, particularly soon after a project has failed. Our study advances knowledge of how corporate entrepreneurship managers can support employees in the greatest need (i.e., those with the strongest negative emotions stemming from project failure soon after the failure event) over and above developing an organizational climate that tolerates failure.

CRediT authorship contribution statement

Leire Gartzia: Conceptualization, Methodology, Investigation, Writing – Original Draft.
Holger Patzelt: Conceptualization, Methodology, Investigation, Writing – Review & Editing.
Marcus Wolfe: Methodology, Formal Analysis, Writing – Review & Editing.
Dean A. Shepherd: Conceptualization, Methodology, Writing – Review & Editing.

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Appendix A

Table A1
Perceived supportive leadership after project failure scale (based on Weber and Patterson, 1996).

Thinking about the last failure of an entrepreneurial project you were involved with, please indicate the extent to which you agree with the following statements about your supervisor in the aftermath of this failure event:

1. My supervisor helped me work through my thoughts and feelings about decisions concerning the failure event ($\lambda = 0.83$).
2. My supervisor patiently and sensitively listened to me talk about the problem I was having ($\lambda = 0.90$).
3. [a]When/if I discussed the problem I was having with my supervisor, he/she didn't seem to pay attention ($\lambda = 0.78$).
4. My supervisor helped me cope with my problems by offering help if I needed it and suggesting possible solutions ($\lambda = 0.90$).
5. [a]My supervisor avoided me when/if I was depressed ($\lambda = 0.72$).
6. My supervisor listened to me talk without judging me ($\lambda = 0.77$).
7. My supervisor said and did supportive things for me when/if I was feeling down ($\lambda = 0.89$).
8. [a]When/if I wanted to talk to my supervisor, he/she seemed to have other things to do ($\lambda = 0.75$).
9. My supervisor showed genuine concern for my problems ($\lambda = 0.92$).
10. My supervisor gave me good advice when/if I asked for it ($\lambda = 0.87$).
11. My supervisor made it very easy to discuss my personal feelings ($\lambda = 0.82$).
12. My supervisor listened to my side of the story even he/she thought I was wrong ($\lambda = 0.76$).
13. My supervisor made an effort to make me feel better when/if I was down ($\lambda = 0.91$).

The response scale captures agreement with these statements on a seven-point Likert-type scale with the anchors of "strongly agree" (7) and "strongly disagree" (1).

[a] Reverse coded.

Table A2
Comparison of different moderation models for supportive leadership.

Model	χ^2	df	RMSEA	CFI	TLI	SRMR
Hypothesized model (left-side moderation)	22.22	15	0.06	0.94	0.92	0.03
Alternative model 1 (right-side moderation)	23.09	12	0.07	0.84	0.78	0.07
Alternative model 2 (left- and right-side moderation)	22.95	14	0.08	0.86	0.65	0.03

Table A3
Curvilinear effects of time since failure.

Relationship	β	se	*p*-Value	95% CI	
Negative emotions * time since failure^2 → job satisfaction	−0.02	0.20	0.30	−0.41	0.37
Supportive leadership * time since failure^2 → job satisfaction	0.10	0.10	0.31	−0.09	0.30
Negative emotions * supportive leadership * time since failure^2 → job satisfaction	0.02	0.19	0.93	−0.35	0.38

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