



Vol

# Small and E Deve



1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

**On the role of team passion in inventing, founding, and developing:  
What happens in the early stages of entrepreneurship?**

Journal:	<i>Journal of Small Business and Enterprise Development</i>
Manuscript ID	JSBED-07-2022-0302.R2
Manuscript Type:	Research Paper
Keywords:	Team entrepreneurial passion, Entrepreneurial team, Opportunity Recognition, Team performance, Opportunity exploitation, Team cooperation



## On the role of team passion in inventing, founding, and developing:

### What happens in the early stages of entrepreneurship?

#### Abstract

**Purpose** –Drawing on the Broaden-and-Build Theory, the study investigates the impact of Team Entrepreneurial Passion (TEP) on team performance. This study further examines the mediating role of team cooperation between TEP and team performance. Thus, by expanding the conceptual model of TEP, we examine how three domains of TEP, namely inventing, founding, and developing affect the entrepreneurial outcomes in the early stages of entrepreneurship.

**Design/methodology/approach** – Survey data were collected from 29 entrepreneurial teams, and the proposed relationships were assessed through Smart-PLS 3.2.8 structural equation modeling tool.

**Findings** – Regarding the domains of TEP, our findings show that the TEP for inventing is positively related to team performance. As for the influences of TEP for inventing and TEP for developing, both are the most beneficial for entrepreneurial outputs, such as team members' abilities to recognize and exploit opportunities.

**Originality/value** – Although there is an increased scholars' interest in entrepreneurial passion, there is a lack of research that examines the enabling factors and outcomes of entrepreneurial passion at the team level. This study is among the earliest research studies that not only empirically explores the relationships between TEP and team performance but furthermore illustrates how each domain of TEP uniquely influences entrepreneurial outcomes by extending existing studies on entrepreneurial passion.

**Keywords** Team entrepreneurial passion - Entrepreneurial team - Opportunity recognition - Opportunity exploitation - Team performance - Team cooperation

**Article classification** Research Paper

## Introduction

In entrepreneurship, the new venture creation is an outcome of efficient interactions of social and internal actors (Klotz et al., 2014) that will not proceed with the solo individual in an isolated environment. Indisputably, most of the practices of the enterprise are executed through the collaboration of groups of entrepreneurs who have the same share of interest in achieving entrepreneurial goals (Lazar et al., 2020). For this reason, scholars are interested in learning why and how some entrepreneurial teams perform better than others. By developing the concept of teams in entrepreneurship, researchers have sought to explore the inherent emotional capabilities that impact team performance and firm outcomes (Chiang et al., 2021). Accordingly, the concept of "Team Entrepreneurial Passion" (TEP) (Cardon et al., 2017) emerges as an emotional predictor within entrepreneurial teams that may impact entrepreneurial behavior (Qian et al., 2022) and team performance (Santos and Cardon, 2019; Boone et al., 2020). While the current findings demonstrate the importance of TEP in moving forward with their entrepreneurial endeavors (Zhu et al., 2022), comparatively few empirical studies were conducted to explain better the influential role of TEP on team outputs, such as team performance (Su et al., 2022; Boone et al., 2020). Rather, this study sought to investigate the relationship between TEP and the performance of entrepreneurial teams in the early stage of new venture creation. More specifically, by extending the theoretical model of Cardon et al. (2017), we illustrate whether any specific domains of TEP (i.e., Inventing, founding, and developing) are related to team performance. Furthermore, to understand how and under what conditions TEP promotes entrepreneurial team performance, we focus on the role of team cooperation (Shin et al., 2016). We explore how team cooperation plays a mediating role in the relationship between TEP and team performance.

It is incontrovertible that TEP is significant in both entrepreneurial and **team** contexts (Cardon et al., 2013), and most recent empirical research increasingly recognizes it as inherent in **team**-level behavior (Boone et al., 2020). However, what is unclear is whether, how, and why TEP influences entrepreneurial actions and consequences. Consequently, in this present study, the research gap is addressed through this research question: How does TEP influence team performance and facilitate opportunity exploitation and recognition? Considering the remarkable role of entrepreneurial teams on enterprise achievements at the early stage of the entrepreneurial process (Patzelt et al., 2021), in this study, we sought to understand how TEP can foster entrepreneurial outcomes, especially at the early stage of entrepreneurship, such as the recognition and exploitation of new opportunities. This is noteworthy since our results elucidate that the diversity in the domains of the TEP may have different effects on entrepreneurial outcomes.

1  
2  
3 Theoretically, the Broaden-and-Build Theory (Fredrickson, 2001) was adopted in our study as a lens  
4 toward a better comprehension of TEP, team performance, and opportunity recognition and exploitation. The  
5 theory suggests that people who experience positive emotional states broaden their attention and may utilize the  
6 available resources more extensively during the engagement in activities that they are passionate about  
7 (Fredrickson, 2001). Therefore, passion enhances the thought-action process among the team members by  
8 increasing the connection between team identity and team performance through its impact on team processes  
9 (Boone et al., 2020).

10  
11 This article provides three contributions to the literature. First, we deepen existing empirical  
12 understandings of how passion operates in entrepreneurship by focusing on passion at the level of team analysis.  
13 We argue and propose how the different domains of TEP are drivers of team performance. More specifically, the  
14 findings of our investigation into the impact of the three TEP domains on team performance at the earliest stages  
15 of both team formation and the emerging new venture expand on existing knowledge about TEP and team  
16 performance. Second, drawing on Broaden-and-Build Theory, we enhanced the insights on the relationship  
17 between TEP and team performance, thereby comprehending the impact of TEP on entrepreneurial outcomes at  
18 the early stage of entrepreneurship. Third, this study was performed in response to the call for new investigations  
19 on different TEP outcomes (Cardon et al., 2017; Drnovsek et al., 2009). We enriched the current literature by  
20 providing new theoretical and empirical insights into the functioning of TEP by introducing opportunity  
21 recognition and exploitation as team outputs. Therefore, this study ranks among the first empirical works on TEP  
22 that create new insights into the relationship between domains of TEP and entrepreneurial outcomes in the early  
23 stage of business creation.

## 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 **Theoretical background and hypotheses development**

### 46 47 48 **Team entrepreneurial passion**

49  
50 In entrepreneurship, the most common definition of entrepreneurial passion has been proposed by Cardon et al.  
51 (2009), as "consciously accessible intense positive feelings experienced by engagement in entrepreneurial  
52 activities associated with roles that are meaningful and salient to the self-identity of the entrepreneur" (p. 517).  
53 This definition encompasses two principal components—intense positive feeling and identity centrality—that are  
54 essential to the conceptualization of entrepreneurial passion (Lex et al., 2022). The entrepreneurial passion  
55 proposed by Cardon et al. (2013) encompasses three dimensions of entrepreneur identity characteristics:  
56  
57  
58  
59  
60

1  
2  
3 inventing, founding, and developing a venture. The entrepreneurial passion for inventing is related to scanning  
4 the environment for new market opportunities, developing new products or services, and proposing innovative  
5 methods in the market (Fesharaki, 2019). The entrepreneurial passion for founding is associated with assembling  
6 the necessary resources and creating a new enterprise (Cardon et al., 2009). Finally, entrepreneurial passion for  
7 developing includes approaches for growing and developing the venture to coincide with the market and  
8 customers' interests (Drnovsek et al., 2016). For instance, throughout the diverse phases of the entrepreneurial  
9 process, each component of passion may be manifested to diverse degrees (Cardon et al., 2009). **Overall,**  
10 **entrepreneurial passion can lead to a more innovative and creative approach to venture development**  
11 **(Casprini et al., 2020)**

21 To direct the researchers' attention to team-level passion, Cardon et al. (2017) first proposed the concept  
22 of TEP, which they addressed as “the level of shared intense positive feelings for a collective team identity **that**  
23 **is high** in identity-centrality for the new venture team” (Cardon et al., 2017, p. 286). TEP has been recognized as  
24 a shared passion that is collectively experienced by a group of entrepreneurs who likely share a team passion for  
25 a joint identity (Cardon et al., 2017). Thus, entrepreneurial teams can benefit from TEP, which is composed of the  
26 shared identity of team members (Santos and Cardon, 2019) and can improve the overall performance of team  
27 members because they collectively experience passion (Pietersen and Botha, 2021). Following Cardon et al.'s  
28 (2009) suggestion of entrepreneurial passion to determine the three identities of entrepreneurial passion roles at  
29 the individual level, Cardon et al. (2017) then extended the same approach to the team level. **The authors further**  
30 **noted that the relationship between entrepreneurial passion, whether at an individual or team level, and**  
31 **outcomes is complex and contingent on various factors, such as the type of passion, the stage of the**  
32 **entrepreneurial process, and the context in which the entrepreneurship takes place (Lee and Herrmann,**  
33 **2021; Laskovaia et al., 2022).**

### 47 **Team entrepreneurial passion and team performance**

50 Research on TEP is still in its infancy as one of the first empirical attempts to investigate the topic was conducted  
51 recently by Cardon et al. (2013). What we know about TEP is largely based on pieces of evidence that substantiate  
52 the influential role of TEP on team outcomes, such as the performance of new venture teams (Su et al., 2022;  
53 Santos and Cardon, 2019; Boone et al., 2020). However, recent empirical investigations have highlighted  
54 contradictory results on the influence of TEP on team processes and outcomes. For example, Santos and Cardon  
55 (2019), as an early empirical study, and later Boone et al. (2020) reported that TEP for inventing has a positive  
56  
57  
58  
59  
60

1  
2  
3 effect on subjective team performance while this influence does not hold for TEP's effect on founding activities.  
4  
5 De Mol et al.'s (2020) results illustrated the negative impact of TEP inventing on objective team performance. As  
6  
7 a result, all these distinct developments concerning the role of entrepreneurial passion, particularly in the context  
8  
9 of a team in entrepreneurship, necessitate the development of the concept of TEP to comprehend how a shared  
10  
11 sense of passion can motivate all team members to perform better as a team.  
12  
13

14 In this study, we aim to enhance our understanding of the three types of TEP and team performance in the  
15  
16 early stages of the process. Using Fredrickson's (1998) Broaden-and-Build Theory as a basis, we argue that  
17  
18 positive emotions have the power to extend people's momentary thought-action and build their physical and  
19  
20 intellectual resources to social and psychological resources (Fredrickson et al., 2013). We posit that experiencing  
21  
22 pleasant affective states in a team (i.e., TEP) enhances the thought-action process among the entrepreneurs,  
23  
24 leading to intense positive feelings and increasing the connection between team identity and team performance  
25  
26 through its impact on team processes (Boone et al., 2020; Uy et al., 2021). When team members collectively  
27  
28 experience passion, the impact of TEP broadens the scope of thinking (Fredrickson, 2001), which allows them to  
29  
30 broaden their thoughts and interact with a wider range of perspectives (Fredrickson and Joiner, 2002). Such  
31  
32 positive emotion may also lead to idea-sharing to improve creativity within a group (Rhee, 2006), thus providing  
33  
34 information about the performance of the team (Fredrickson, 1998). We consider team performance as "the extent  
35  
36 to which the productive output of a team meets or exceeds the performance standards of those who review and/or  
37  
38 receive the output" (De Jong and Elfring, 2010, p. 536). This concept of team performance gives us the possibility  
39  
40 to determine the quality, the quantity, and the overall assessment of team performance.  
41

42 More specifically, TEP may have a diversity of entrepreneurial roles—inventing, founding, and  
43  
44 developing—that can be beneficial while team members experience the same team identity for a particular  
45  
46 entrepreneurial role. Team members who experience passion **for** the specific role-identity in the team would  
47  
48 promote team performance in a positive direction because the team members feel that all their efforts are directed  
49  
50 to the identical purpose in a team (Barsade et al., 2000). Taking everything into account, a positive TEP motivates  
51  
52 team members to accomplish activities that benefit the entire team (Breugst et al., 2012) and to pursue a team's  
53  
54 endeavors to reach entrepreneurial objectives, we predict that all three types of TEP will improve the performance  
55  
56 of the entrepreneurial teams:  
57

58 **H1a:** TEP for inventing has a significant impact on team performance.  
59  
60

**H1b:** TEP for founding has a significant impact on team performance.

**H1c:** TEP for developing a significant impact on team performance.

### **The mediating effect of team cooperation**

**Based on the entrepreneurial team literature, it can be argued that the performance of a team is influenced by a range of factors pertaining to team composition, such as individual attributes, team interactions, and external circumstances (Lyndon and Pandey, 2021; Zhou et al., 2017; Jin et al., 2027).** By focusing on TEP, several questions are raised, such as whether team mechanisms (e.g., team conflict) can influence the relationship between TEP and team outcomes. Although few researchers have addressed team conflict in this relationship, the current literature is underdeveloped in explaining how other team mechanisms (e.g., team cohesion) influence the link between TEP and team performance. Of the mechanisms that influence team performance, team cooperation has been identified as the intentional contribution of personal efforts to task completion (Li et al., 2019). By increasing members' responsibility for decision-making through delegation of authority, team cooperation enhances team members' sense of ownership and belonging (Liang et al., 2015). For instance, team members cooperatively working with each other improves their willingness to share information (Shin et al., 2016) and their supportive behavior, thereby contributing to team performance (Puck and Pregonig, 2014).

The literature has demonstrated that positive team emotion increases cooperation as team dynamics translate team inputs into outcomes while exhibiting higher levels of cooperation toward achieving collective objectives (Santos and Cardon, 2019). Sharing positive emotions, such as team passion motivates the team to work collectively toward joint goals, and thus enhances the team's cooperation in pursuit of the entrepreneurial goal (Drnovsek et al., 2009). Consequently, TEP broadens team members' cooperative behavior and actions toward their goals (Barsade et al., 2000). In this case, team cooperation is thought to be a mechanism that can mediate the relationship between TEP and team performance. Following the literature, we proposed that:

**H2a:** Team cooperation mediates the relationship between TEP for inventing and team performance.

**H2b:** Team cooperation mediates the relationship between TEP for founding and team performance.

1  
2  
3 **H2c:** Team cooperation mediates the relationship between TEP for developing and team performance.  
4  
5  
6  
7  
8

9  
10 **Team entrepreneurial passion, opportunity recognition, and opportunity exploitation**  
11

12 In entrepreneurship, the processes of identifying, recognizing, and developing business opportunities are  
13 considered the initial steps in the entrepreneurial process (Singh and Gibbs, 2013). Opportunity recognition refers  
14 to being alert to potential business opportunities, actively searching for and gathering information about them,  
15 communicating on the subject, addressing customer needs, and evaluating the viability of such potential  
16 entrepreneurial activities (Baron, 2006). After recognizing the new opportunities, it is time to effectively exploit  
17 them. In this regard, opportunity exploitation is described as developing a product or service based on a perceived  
18 entrepreneurial opportunity (Kuckertz et al., 2017). The process of exploiting an opportunity involves developing  
19 a product or service, acquiring human resources, planning the business, understanding customers and the market,  
20 and gathering resources (Hmieleski and Baron, 2008).  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30

31 Several studies have examined the influence of entrepreneurial passion on entrepreneurial intention  
32 (Anjum et al., 2021) and entrepreneurial behavior (Cardon et al., 2009). Through the emotional lens of  
33 entrepreneurship, entrepreneurial passion is embedded in entrepreneurial activities, including recognizing and  
34 exploring new opportunities and founding and developing new businesses (Cardon et al., 2009). Entrepreneurs'  
35 emotions are important in the early stages of new business creation (Feng and Chen, 2020). Specifically,  
36 entrepreneurial passion stimulates alertness (i.e., scanning and searching, informing, connecting, evaluating, and  
37 judging), making it possible for entrepreneurs to identify and recognize opportunities to establish a new business  
38 (Campos, 2017; Li et al., 2020). Nevertheless, regarding the well-explored impact of entrepreneurial passion on  
39 entrepreneurial outcomes (Bao et al., 2017; Cardon et al., 2009), this area of study has remained silent at the team  
40 level. Therefore, that aspect also needs to be empirically explored to determine whether TEP may improve team  
41 members' ability to identify business-related opportunities by making other members aware of possibilities they  
42 had not previously perceived (Baron, 2008). Especially experiencing and sharing the specific role-identity of the  
43 passion among team members could better capture the unique effects of positive emotions and demonstrate how  
44 positive emotions for specific goals broaden people's momentary thought-action patterns (Fredrickson, 2001). As  
45 previous studies developed the research by identifying the individual entrepreneurial passion as an indicator that  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 may have an impact on opportunity recognition and exploitation. Hence, we claim that TEP also can facilitate this  
4  
5 process (Figure 1).

6  
7  
8 When teams have already established their business, we believe that it is fundamental to pay attention  
9  
10 mainly to the two domains of inventor and developer of entrepreneurial passion, since the entrepreneurial passion  
11  
12 for founding is more related to establishing new firms. Based on the nature of the inventing domain of  
13  
14 entrepreneurial passion, entrepreneurs who are passionate about inventing seek new business opportunities and  
15  
16 create new products and/or services (Cardon et al., 2009). Therefore, individuals with a higher entrepreneurial  
17  
18 passion for inventing devote more time to exploring new market opportunities and managing new opportunities  
19  
20 to develop their entrepreneurial goals (Rahman et al., 2020).

21  
22 Following the Broaden-and-Build Theory (Fredrickson, 1998), the shared positive emotions within the  
23  
24 team broaden their attention to new information associated with the market (Rhee, 2007). Through this process,  
25  
26 team members are encouraged to engage in thoughtful deliberation and exploratory action to pursue  
27  
28 entrepreneurial opportunities (Harper, 2008). Accordingly, passionate entrepreneurs on a team with a higher level  
29  
30 of TEP toward inventing are more capable of being **aware of new** entrepreneurial opportunities (Baron, 2008;  
31  
32 Cardon et al., 2017). In addition, working on a team that includes passionate teammates for inventing gives new  
33  
34 possibilities to the members to connect disparate pieces of information to obtain resources and, consequently,  
35  
36 manage them to recognize new opportunities (Costa et al., 2018). A team with a passion for inventing may also  
37  
38 increase the entrepreneurs' attention towards the new markets or technological opportunities (Li et al., 2020), as  
39  
40 well as enable them to creative problem solving (Cardon et al., 2009). In the meanwhile, the passion for  
41  
42 opportunity discovery (Kiani et al., 2021) is likely to motivate them to recognize opportunities (Mahto and  
43  
44 McDowell, 2018) and create new ventures (Li et al., 2020). Therefore, teams benefit from this passion for  
45  
46 opportunity recognition to obtain financial, human, and social resources (Costa et al., 2018).

47  
48 **H3:** TEP for inventing has a significant positive and direct effect on opportunity recognition.

49  
50 Regarding the developer role-identity of passion, we believe that it brings outcomes such as exploiting the  
51  
52 opportunities that entrepreneurs recognized earlier (Cardon et al., 2017). Entrepreneurs who have a passion for  
53  
54 developing are more engaging and alert in activities like finding new customers, developing new markets, and  
55  
56 optimizing organizational processes (Cardon et al., 2009). Being in a team with a specific role-identity for  
57  
58 developing conducts the team's actions in developing new opportunities toward commercializing their existing  
59  
60 resources. Teams with TEP for developing are more alert to exploit the social and human capital resources and

1  
2  
3 actively search for an opportunity and gather resources for developing the market (Costa et al., 2018; Xiao et al.,  
4  
5 2020). Thus, this study proposes the following:

6  
7  
8 **H4:** TEP for developing has a significant positive and direct effect on opportunity exploitation.  
9

10  
11  
12  
13 

---

Insert Figure 1 here

---

#### 14 15 16 17 18 **Data and methodology**

19  
20  
21 **Our research approach was deductive and quantitative, utilizing a cross-sectional survey design to**  
22 **investigate young entrepreneurial teams involved in early-stage venture entry with a strong focus on**  
23 **identifying and capitalizing on opportunities and their outcomes related to team entrepreneurial passion.**  
24 **As team entrepreneurial passion's impact on team and venture performance is a subject that has received**  
25 **little attention as discussed earlier. In this study, the proposed model and the relationship between variables**  
26 **have been established theoretically established in earlier studies, different from them we applied the**  
27 **quantitative methodology to investigate these relationships. Applying the quantitative study of**  
28 **entrepreneurial teams is vital for advancing our understanding of the factors that contribute to successful**  
29 **entrepreneurship and team performance, and for developing evidence-based strategies to support**  
30 **entrepreneurial teams in achieving their objectives (Kollmann et al., 2017). Our study emphasizes the**  
31 **importance of employing reliable and generalizable quantitative methods such as surveys and statistical**  
32 **analyses to generate knowledge about entrepreneurial teams.**  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43

44 **In the context of entrepreneurship, cross-sectional designs allow the researchers to examine a wide**  
45 **range of variables that influence venture performance and entrepreneurial outcomes (Das et al., 2021; Zhou**  
46 **et al., 2017). As a result, in the context of a team in entrepreneurship, applying the cross-sectional approach**  
47 **as a common technique enable the researchers to examine a wide range of variables, compare and analyze**  
48 **data from multiple teams, and identify patterns that help elucidate the complex interplay between**  
49 **individual and team aspects that impact team performance and entrepreneurial outcomes (Saud Khan et**  
50 **al., 2014). Moreover, this study employed random selection techniques to ensure a representative sample**  
51 **of the population of innovative entrepreneurial teams (Olken and Rotem, 1995). This approach enables us**  
52  
53  
54  
55  
56  
57  
58  
59  
60

to reach a more extensive range of entrepreneurial teams, including those with varying domains of entrepreneurial passion (Zhu et al., 2022).

### *Sampling and data collection*

For this quantitative study, a structured questionnaire was used for data collection. We sampled entrepreneurial teams across the early phases of the entrepreneurial process. The final sample comprised 29 entrepreneurial teams from Europe, selected using the following criteria: being active in the business during the five years of our study and entrepreneurial teams composed of at least two members (Omri and Boujelbene, 2015). These teams were from various industries in the economy and their entrepreneurial achievements were related to the early stages of their activity. Additionally, we recruited participants through lists provided by a university of the University of Campania Luigi Vanvitelli, the university of Cagliari in Italy, and entrepreneurship hubs. This approach resulted in 404 potential participants who were contacted via email. In total, 80 entrepreneurs were eligible for participation and agreed to take part in the study (19.8% response rate). Out of the 80 participants, 10 incomplete responses were discarded, resulting in a final sample of 70 participants. For testing the hypotheses, the survey was designed to include questions on the independent, dependent, mediator, and control variables, as well as some other basic information about the venture and team.

### *Variable measurement*

The questionnaire includes five Likert-type scales that teams rated based on their level of agreement with each item on a scale of 1–5 (where 1=strongly disagree and 5=strongly agree for team performance, opportunity recognition, opportunity exploitation, and TEP). For team cooperation, the five Likert-type scales were ranked from 1=not affected by our ideas to 5= significantly enhanced by team members' ideas.

*Team performance* was measured by three items adapted by De Jong and Elfring (2010). By using these items, we evaluated the subjective team performance based on team members' perceptions of how they were doing and the value they bring to the business (Santos and Cardon, 2019). A sample item is "The overall assessment of our team's effectiveness is very good."

*Opportunity recognition* was measured by using the three-item scale developed by Ozgen and Baron (2007). These items asked respondents' opinions about the potential new venture opportunities that the team recognized based on the ideas they had in the last 12 months. A sample item is "My team can recognize new venture opportunities in industries where I have no personal experience."

1  
2  
3        *Opportunity exploitation* was tested with four items developed by Kuckertz et al. (2017). These items  
4 measure how they developed a product or service based on a perceived entrepreneurial opportunity, acquiring  
5 appropriate human resources, understanding customers and the market, raising financial resources, and  
6 establishing an organization (De Massis et al., 2021). An example of one item is "We have put together an  
7 entrepreneurial team to pursue a business opportunity we perceived."  
8  
9

10  
11  
12        *Team entrepreneurial passion (TEP)* was measured using the 13 items from Cardon et al. (2013). We  
13 followed Santos and Cardon's (2019) team-level approach and changed the first person "I" items to the plural  
14 form "we" to gather what the team was passionate about. Consistent with Cardon et al. (2013), TEP was assessed  
15 for each domain of passion—inventing, founding, and developing—maintained as separate constructs, rather than  
16 lumping all the measures into an overall average measure of entrepreneurial passion. Therefore, in line with  
17 previous studies (e.g., Cardon et al., 2013; Santos and Cardon, 2019), we calculated the TEP for each domain as  
18 a product of team intense positive feelings (IPF) and team identity centrality (IC). Example items for the intensity  
19 of positive feelings for inventing, founding, and developing were "Scanning the environment for new  
20 opportunities excites my team"; "Establishing a new company excites us"; and "Assembling the right people to  
21 work for my business is exciting." The sample items for identity centrality for inventing, founding, and developing  
22 were "Inventing new solutions to problems is an important part of who I am"; "Being the founder of a business is  
23 an important part of who I am"; and "Nurturing and growing companies is an important part of who I am."  
24  
25

26        *Team cooperation* was assessed with five items developed by Chatman and Flynn (2001). A sample item  
27 is "There is a high level of cooperation between team members."  
28  
29

30        *Control variables.* Initially, we included variables estimating team diversity (age, gender, level of  
31 education) and team size. We thought such controls belonged in our data analysis because judging from previous  
32 studies these covariates may have an impact on team performance, opportunity exploitation, and opportunity  
33 recognition (Zhou et al., 2015). However, our findings indicated that team size and gender were not significant  
34 predictors of dependent variables in this study. Therefore, we heeded a suggestion to consider only the control  
35 variables that correlated with dependent variables (De Mol et al., 2020). Accordingly, they were removed from  
36 our analyses, though we did maintain the control variables of age and education for further analysis. Education  
37 was assessed by asking participants for their highest finished level (1=less than high school, 2=high school  
38 diploma or the equivalent; some college credit, 3=technical/vocational training, 4=master's degree,  
39 5=professional degree, 6=bachelor's degree, 7=doctoral degree). Also, age was recorded as the respondent's age  
40 (in years) at the time of taking the survey.  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

## Data analysis procedure

In this study, we followed a two-step analysis. First, we used SPSS to screen the data and identify common method bias. Second, we applied structural equation modeling (SEM) using SmartPLS 3.2.8 software (Ringle et al., 2020). Specifically, the quantitative metrics were analyzed through partial least squares structural equation modeling (PLS-SEM) (Hair et al., 2020; Hair et al., 2019). The PLS approach was used for its capability to analyze complex interactions between latent variables and their dimensions (Sarstedt et al., 2017). Moreover, this method is very convenient when the aim is an exploration of new relationships between variables and limited theoretical and empirical knowledge is available to guide hypothesis generation (Hair et al., 2020). Some recent studies that focused on passion at the individual level have utilized this method (Sriyakul and Jermstittiparsert, 2019); however, the present study will be the first to apply this method to analyze passion at the team level.

### *Common method bias*

Harman's (1976) single-factor test was evaluated to test for common method bias. Harman's single-factor test was conducted by including all principal structures in a principal component factor analysis (Bagheri et al., 2020). The results indicated that the first factor explained 27.04% of the variance, which is less than 50%, as per the recommendation of Podsakoff et al. (2003). Then, a correlation matrix test was operated as suggested by Pavlou et al. (2007) to determine whether the variables were highly correlated or not. As shown in **Table 1**, a high correlation was not shown among the variables. Thus, the common method bias is not a concern in this research.

---

Insert **Table 1** here

---

## Results

### *Measurement model assessment*

The SmartPLS proceeded through two analysis steps: the specification of the measurement model and the assessment of the structural model evaluation (Hair et al., 2020). The factor loadings of all model items were evaluated. Three items were removed based on the results because their factor loadings were below the suggested value of 0.70 (Hair et al., 2019). Therefore, the two items for team cooperation (Coop1 and Coop2) that showed loadings of -0.03 and -0.466, respectively, and the item of opportunity exploitation (OE4) showing loading of 0.622 were removed from the item list. The other items showed desirable factor loadings greater than 0.7 (Hair et

al., 2019). To test the reliability of the constructs, this study adopted Cronbach's alpha and Composite Reliability (CR). Cronbach's alpha of each construct exceeded the 0.70 **thresholds** (Hair et al., 2019), and all the CRs were higher than the recommended value of 0.70 (Hair et al., 2019). Convergent validity was acceptable because the average variance extracted (AVE) was over 0.50 (Hair et al., 2020). Hence, the discriminant validity was evaluated by applying the Fornell–Larcker criterion (Fornell and Larcker, 1981) which compares the square root of the AVE with the correlation of latent constructs (Ringle et al., 2012). Therefore, the square root of each construct's AVE should have a greater value than the correlations with other latent constructs (Henseler et al., 2015). **Table II** presents the factor loadings, alpha coefficient, CR, and AVE. As shown in **Table III**, the results confirm the discriminant validity.

---

Insert **Table II** here

---

---

Insert **Table III** here

---

### *Structural model assessment*

**The results of the coefficient of determination (R<sup>2</sup>)** for opportunity exploitation (0.318), opportunity recognition (0.108), and team performance (0.277) support the model's in-sample predictive power since they are above the required level of .10 (Hair et al., 2019). In addition, the predictive accuracies of the model were measured by determining the value of Q<sup>2</sup> (Hair et al., 2019). Based on the blindfolding procedure, Q<sup>2</sup> above zero shows that the predictive relevancy of the endogenous constructs was established (Sarstedt et al., 2017). In addition, the model fit in PLS-SEM was assessed by determining the standardized root mean square residual (SRMR) (Hair et al., 2017). In this study, the SRMR yields a value of .078. This value is lower than the cutoff value of .80 (Hu and Bentler, 1999) which confirms that the data implicit in the model and the observed correlations fit reasonably well (Hair et al., 2014). With the evaluation of the measurement model and the structural model completed, the next step was to assess the hypothesized associations. For assessing the significance of the hypothesis, the bootstrapping procedure with 5,000 samples was performed (Sarstedt et al., 2014). As displayed in **Table IV**, there is a significant positive effect of TEP for inventing on team performance ( $\beta = 0.340, p < 0.05$ ). Therefore, H1a is supported. However, the results revealed an insignificant effect of TEP for

1  
2  
3 founding ( $\beta = -0.023$ ,  $p = 0.857$ ) and TEP for developing ( $\beta = 0.006$ ,  $p = 0.950$ ) and team performance. Therefore,  
4  
5 H1a was supported, whereas H1b and H1c were rejected.  
6  
7  
8  
9

### 10 *Mediation analysis*

11  
12  
13 Mediation analysis was performed to assess the mediating role of team cooperation on the relationship  
14  
15 between three domains of TEP and team performance (H2a, H2b, and H2c). The results reveal that all three  
16  
17 indirect relationships were proven to be non-significant. The outcomes show that with the introduction of the  
18  
19 mediator into the model, the direct effect was still found positive and significant ( $\beta = 0.340$ ,  $p < 0.001$ ). While the  
20  
21 indirect effect with the inclusion of the mediator into the analysis was observed insignificant ( $\beta = 0.099$ ,  $p =$   
22  
23  $0.115$ ). Therefore, the results could not support H2a. In addition, the mediating effect of team cooperation was  
24  
25 evaluated by the relationship between TEP for founding, TEP for developing, and team performance. With the  
26  
27 inclusion of the mediator into the model, the direct effect of TEP for founding (H2b:  $\beta = -0.023$ ,  $p = 0.857$ ) and  
28  
29 TEP for developing ( $\beta = 0.006$ ,  $p = 0.950$ ) were discovered to be insignificant. Similarly, the indirect effect of the  
30  
31 TEP for founding ( $\beta = 0.006$ ,  $p = 0.912$ ) and TEP for developing ( $\beta = 0.002$ ,  $p = 0.952$ ) with the inclusion of the  
32  
33 mediator into the analysis were insignificant. Thus, H2b and H2c were rejected. Accordingly, the results  
34  
35 demonstrate that the relationship between all three domains of TEP and team performance is not mediated by  
36  
37 team cooperation. The results of the mediation analysis are presented in **Table V**.

38  
39 Also, H3 assesses whether TEP for inventing has a significant effect on opportunity recognition. The  
40  
41 results revealed a statistically significant impact of TEP for inventing on opportunity recognition ( $\beta = 0.328$ ,  $p <$   
42  
43  $0.01$ ). Therefore, H3 was supported. The results also acknowledge a significant direct and positive effect of TEP  
44  
45 for developing on opportunity exploitation. The results confirmed that TEP for developing played a significant  
46  
47 role in shaping opportunity exploitation ( $\beta = 0.501$ ,  $p < 0.05$ ). Consequently, H4 was supported.

48  
49 On the possible function of the control variables, the results indicate that the level of education has a  
50  
51 positive significant direct effect on the team members' abilities to take advantage of new opportunities ( $\beta = 0.237$ ,  
52  
53  $p < 0.01$ ). Meanwhile, the team members' age has a significant and positive influence on team performance ( $\beta$   
54  
55  $= 0.175$ ,  $p < 0.05$ ).  
56

---

57 **Insert Table IV here**

---

---

Insert **Table V** here

---

## Discussion

Our focus on TEP enabled us to derive new insights into the role played by entrepreneurial passion at the team level on both team performance and entrepreneurial outcomes at the early phase of team formation. In this study, drawing on the Broaden-and-Build Theory (Frederickson, 2001), the authors investigated the role of TEP on opportunity recognition, opportunity exploitation, and team performance with the mediating role of team cooperation. In emphasizing the importance of TEP, our study offers a new perspective of entrepreneurial passion by looking at the team level of analysis. This approach extends the literature on the relevance of entrepreneurial passion not only at the individual level but also at the team level. This is relevant because, following the nascent body of research (Santos and Cardon, 2018; De Mol et al., 2019), our study is among the first empirical studies that investigate entrepreneurial passion at the team level and its influence on team performance. Additionally, in response to Boone et al.'s (2020) earlier call to explore the substantial impact of TEP on team processes of new ventures, we provide insights into the consequences of TEP for team performance and their skills in recognizing and exploiting opportunities.

### *Theoretical implications*

Overall, our study has several implications at the theoretical level. First, the first hypothesis sought to determine the relationship between TEP (inventing, founding, developing) and team performance. The results concerning the impact of the three domains of TEP, and team performance were somewhat different from our initial predictions. Our results revealed that only TEP for inventing **effects** team performance, whereas the results could not support a significant effect of TEP for founding or TEP for developing team performance. Thus, entrepreneurial passion at the team level broadens the scope of thoughts that can yield insights into the team procedures and their impact on team performance. TEP literature emphasizes that TEP can help entrepreneurial team performance (e.g., Boone et al., 2020; Santos and Cardon, 2019, De Mol et al., 2019). More specifically, our findings show that the three domains of TEP play distinct roles in entrepreneurial team performance. We can explain this result by suggesting that the performance of the entrepreneurial team is considerably dependent on the function of the TEP identity that is experienced during the entrepreneurship process. Regarding the non-

1  
2  
3 significant influence of TEP for developing and TEP for founding on the performance of the team, we can  
4 speculate that the effect of the three domains of TEP on team performance depends on the entrepreneurial stage  
5 in which the teams were operating when the research was conducted. This means that TEP is affected by both the  
6 team's formation phases and the life cycle of entrepreneurial activities. However, an entrepreneurial team with  
7 extreme enthusiasm for entrepreneurship could not guarantee that a team will be productive, because the  
8 perception of team performance ties to the understanding of the team's identities around those activities. An  
9 important implication of these findings is how TEP with role-specific identities would lead the team's effort and  
10 passion to achieve desired entrepreneurial outcomes. Altogether, our results introduced new insights to  
11 discriminating the function of the three domains of TEP proposed by Cardon et al. (2017) to determine whether  
12 the focus on team role identity might impact team performance in the early stage of entrepreneurship. Future  
13 research would be expected to provide evidence for this assumption.

14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25 Second, in addition to the first hypothesis, for the first time in the TEP literature, we explore the mediation  
26 role of team cooperation on the relationship between three domains of TEP and team performance to highlight the  
27 team-related mechanisms which link TEP to team performance. We found an insignificant mediation effect of  
28 team cooperation on the relationship between team performance and the three types of TEP. The results could not  
29 support the suggested hypothesis. We account for and explain this finding by considering the association between  
30 team cooperation and the stages of team formation. For the teams who participated in the present study, the  
31 majority were in the exploratory relations stage, which manifested itself in team members cooperating and  
32 harmonizing their activities to complete their tasks in the group. When the teams are in the infancy stage of  
33 forming, team members are more involved with finding and stabilizing their team roles, so team responsibilities  
34 may not be well-defined, and the communication levels are not fully fleshed out. Consequently, all these factors  
35 will affect the team cooperation degree.

36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46 Third, we introduced TEP as a significant team antecedent and its impact on the entrepreneurial outcomes,  
47 namely recognition, and exploitation of opportunities. In the entrepreneurship literature, emotions and passion are  
48 recognized as significant sources of motivation and fuel for the entrepreneurial behavior of entrepreneurs (Neneh,  
49 2022). Also, it is incontrovertible that TEP is important in entrepreneurship research (Newman et al., 2021), but  
50 its role as a predictor of entrepreneurial outcomes in the early stage of entrepreneurship has not been previously  
51 considered. Earlier studies did not consider the role of the particular stage of entrepreneurship in forming and  
52 operating an entrepreneurial team in examining the level of TEP. Therefore, in this study, the recognition and  
53 exploitation of opportunities were suggested as the entrepreneurial outcomes of entrepreneurial teams that are

1  
2  
3 engaged in the early phase of entrepreneurship. More specifically, we concentrated on the distinguishable  
4 domains of TEP's role identity composition, namely inventing and developing. We found that TEP for inventing  
5 has the greatest influence on the ability of the team to recognize new opportunities in terms of finding financial,  
6 human, and social resources as well as in introducing a new product or service to the market. In this regard, higher-  
7 level TEP with the shared role-identity of inventing among entrepreneurial teams encourages team members for  
8 being alert toward new opportunities. This finding is valuable because it stresses the importance of experiencing  
9 a specific domain of TEP (i.e., inventing) and its impact on entrepreneurial outcomes at the early stage of  
10 entrepreneurship. Most of the teams (62%) participating in this study started the process of commercializing their  
11 products; thus, it makes sense that teams with a higher TEP for inventing are more passionate about recognizing  
12 new market opportunities and new ways to use resources. Additionally, such findings are consistent with previous  
13 studies that have shown individual entrepreneurs with inventor-role identities are more passionate about seeking  
14 new opportunities and new ideas (Li et al., 2020; Costa et al., 2018). However, we extend these findings to the  
15 team and TEP literature to examine how the experience of passion at the team level for inventing has the potential  
16 to develop the entrepreneurial team's ability to recognize potential and relevant opportunities in markets to  
17 leverage new resources to organize new ventures.

18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33 Fourth, in our study, TEP is shown to be a key emotional resource that not only explains the formation of  
34 positive emotions at the team level but also broadens team members' awareness of new opportunities. Specifically,  
35 this study was intended to determine whether it is beneficial for the team to enhance the level of TEP for  
36 developing to enhance the growth of the ventures and related opportunities. We found that teams with a higher  
37 level of TEP for developing are more motivated to find the right people to extend their market and products and  
38 consider new opportunities that help them to nurture and grow their ventures. Hence, experiencing positive  
39 emotions in entrepreneurial teams may reach favorable outcomes if the whole team shares the same identity for a  
40 specific goal. Altogether, these findings point out that TEP is an important leading emotional resource to expand  
41 the focus of entrepreneurial passion to team-based perspectives by directing the positive passion of team members  
42 to obtain a wider range of resources.

43  
44  
45  
46  
47  
48  
49  
50  
51  
52 To summarize, these results allowed us to provide a model by focusing on different TEP role-identity  
53 compositions that better explain the causal relationships between entrepreneurial passion and entrepreneurial  
54 outcomes at the team level. This result is relevant because, despite the earlier attempt to clarify the influential role  
55 of domains of entrepreneurial passion at the individual level on entrepreneurial desires such as firm performance  
56 (Cardon, 2008), creativity (Biraglia and Kadile, 2017), and entrepreneurial self-efficacy (Cardon and Kirk, 2015),

1  
2  
3 we have no existing knowledge to show how specific domains of entrepreneurial passion at the team level will  
4 impact entrepreneurial outcomes in the early phase of the team formation process. Such results are valuable as  
5 they indicate how TEP of specific role identities would lead the team's effort and passion to drive the expected  
6 business outcomes at different stages of entrepreneurship. This is important because previous studies on  
7 entrepreneurial passion have either reported average levels of entrepreneurial passion at the individual and team  
8 level (Rahman et al., 2020; Zhu et al., 2022) or considered only one or two domains of team-level passion in their  
9 work (Collewaert et al., 2016; Boone et al., 2020). By assessing all three domains of TEP, our results show that  
10 the domains of TEP behaved distinctly. The findings of this study highlight that the role identities of inventing,  
11 founding, and developing are not equal, so experiencing the shared passion in a team might not always have a  
12 positive effect on team performance. This is a valuable result because it suggests that we should avoid applying  
13 an average entrepreneurial passion among team members.  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27

### 28 **Practical implications**

29  
30 The results of the study are highly beneficial to the entrepreneurship education (EE) field of research. At most of  
31 the institutions that offer EE programs, the primary focus of the courses is on strengthening individual  
32 entrepreneurial skills and mindsets. Apart from contributing to the limited research on TEP, this study provides  
33 support to the need for establishing an environment that nurtures TEP in EE. That would not only result in an  
34 improved level of satisfaction within the entrepreneurial teams (Hytti et al., 2010) but also could promote team  
35 performance. The current study highlights the role of sharing entrepreneurial passion in the team and its function  
36 as a critical variable that might assist entrepreneurial teams in obtaining entrepreneurial results. The combination  
37 of knowledge on team building and selection processes, as well as considering the emotional and psychological  
38 dimensions of teamwork would further help focus the administration on the right direction and invest in factors  
39 that can eventually help EE programs to attain the expected results in this challenging area. In particular, the  
40 functioning EE must be tailored to determine, direct, and promote the individuals' emotional capacities, expanding  
41 them through the entrepreneurial teams and consequently assisting them in developing their entrepreneurial idea.  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

## Conclusion

This study presents one of the earliest attempts to develop and test an integrated model that links TEP to team performance at the team level. Hence, the findings of the study would complement the team and entrepreneurship literature by exemplifying how TEP may meaningfully impact team performance, opportunity recognition, and opportunity exploitation. Overall, by boosting the implication of the Broaden-and-Build Theory of positive emotions (Fredrickson, 1998) among entrepreneurial teams, we demonstrate that experiencing collective positive emotions such as team passion, broadens a team's behaviors and performance. Accordingly, based on this theory, a higher level of team passion for inventing that is experienced by teammates enhances the thought-action process among the entrepreneurs, thus increasing the connection between team identity and team performance through its impact on team processes. Particularly, being in a team with a specific role-identity of passion toward inventing or developing guides the team's actions toward recognizing new opportunities for establishing a business and developing them toward commercializing their existing resources.

## References

- Anjum, T., Heidler, P., Amoozegar, A., and Anees, R. T. (2021). The Impact of Entrepreneurial Passion on the Entrepreneurial Intention; Moderating Impact of Perception of University Support. *Administrative Sciences*, 11(2), 45.
- Bagheri, A., Newman, A., and Eva, N. (2020). Entrepreneurial leadership of CEOs and employees' innovative behavior in high-technology new ventures. *Journal of Small Business Management*, 1-23.
- Bao, J., Zhou, X., and Chen, Y. (2017). Entrepreneurial passion and behaviors: Opportunity recognition as a mediator. *Social Behavior and Personality: an international journal*, 45(7), 1211-1220.
- Baron, R. A. (2008). The role of effect in the entrepreneurial process. *Academy of management Review*, 33(2), 328-340.
- Biraglia, A., & Kadile, V. (2017). The role of entrepreneurial passion and creativity in developing entrepreneurial intentions: Insights from American homebrewers. *Journal of small business management*, 55(1), 170-188.
- Barsade, S. G., Ward, A. J., Turner, J. D., and Sonnenfeld, J. A. (2000). To your heart's content: A model of affective diversity in top management teams. *Administrative science quarterly*, 45(4), 802-836.
- Boone, S., Andries, P., and Clarysse, B. (2020). Does team entrepreneurial passion matter for relationship conflict and team performance? On the importance of fit between passion focus and venture development stage. *Journal of Business Venturing*, 35(5), 105984.
- Breugst, N., Domurath, A., Patzelt, H., and Klaukien, A. (2012). Perceptions of entrepreneurial passion and employees' commitment to entrepreneurial ventures. *Entrepreneurship theory and practice*, 36(1), 171-192.
- Campos, H.M. (2017). Impact of entrepreneurial passion on entrepreneurial orientation with the mediating role of entrepreneurial alertness for technology-based firms in Mexico. *Journal of Small Business and Enterprise Development*, 24(2), 353-374.
- Cardon, M. S., Glauser, M., and Murnieks, C. Y. (2017). Passion for what? Expanding the domains of entrepreneurial passion. *Journal of Business Venturing Insights*, 8, 24-32.
- Cardon, M. S., & Kirk, C. P. (2015). Entrepreneurial passion as mediator of the self-efficacy to persistence relationship. *Entrepreneurship theory and practice*, 39(5), 1027-1050.

1  
2  
3 Cardon, M. S., Gregoire, D. A., Stevens, C. E., and Patel, P. C. (2013). Measuring entrepreneurial passion:  
4  
5 Conceptual foundations and scale validation. *Journal of business venturing*, 28(3), 373-396.

6  
7 Cardon, M. S., Wincent, J., Singh, J., and Drnovsek, M. (2009). The nature and experience of entrepreneurial  
8  
9 passion. *Academy of management Review*, 34(3), 511-532.

10  
11 Cardon, M. S. (2008). Is passion contagious? The transference of entrepreneurial passion to employees. *Human  
12  
13 resource management review*, 18(2), 77-86.

14  
15 **Casprini, E., Pucci, T., Vitale, G., & Zanni, L. (2020). From individual consumption to venture  
16  
17 development: the role of domain passion in the videogame industry. *Journal of the Knowledge  
18  
19 Economy*, 11, 1470-1488.**

20  
21 Chatman, J. A., and Flynn, F. J. (2001). The influence of demographic heterogeneity on the emergence and  
22  
23 consequences of cooperative norms in work teams. *Academy of management journal*, 44(5), 956-974.

24  
25 Chiang, J. T. J., Chen, X. P., Liu, H., Akutsu, S., and Wang, Z. (2021). We have emotions but can't show them!  
26  
27 Authoritarian leadership, emotion suppression climate, and team performance. *Human Relations*, 74(7),  
28  
29 1082-1111.

30  
31 Collewaert, V., Anseel, F., Crommelinck, M., De Beuckelaer, A., & Vermeire, J. (2016). When passion fades:  
32  
33 Disentangling the temporal dynamics of entrepreneurial passion for founding. *Journal of Management  
34  
35 Studies*, 53(6), 966-995.

36  
37 Costa, S. F., Santos, S. C., Wach, D., and Caetano, A. (2018). Recognizing opportunities across campus: The  
38  
39 effects of cognitive training and entrepreneurial passion on the business opportunity prototype. *Journal  
40  
41 of Small Business Management*, 56(1), 51-75.

42  
43 **Das, W., Das, S., & Chattopadhyay, M. (2021). The emergence of entrepreneurial team as a research field—  
44  
45 way forward. *Journal of Small Business and Enterprise Development*, 28(6), 831-855.**

46  
47 De Jong, B. A., and Elfring, T. (2010). How does trust affect the performance of ongoing teams? The mediating  
48  
49 role of reflexivity, monitoring, and effort. *Academy of Management Journal*, 53(3), 535-549.

50  
51 De Massis, A., Eddleston, K. A., and Rovelli, P. (2021). Entrepreneurial by design: How organizational design  
52  
53 affects family and non-family firms' opportunity exploitation. *Journal of Management Studies*, 58(1),  
54  
55 27-62.

56  
57 De Mol, E., Cardon, M. S., de Jong, B., Khapova, S. N., and Elfring, T. (2020). Entrepreneurial passion diversity  
58  
59 in new venture teams: An empirical examination of short-and long-term performance implications.  
60  
*Journal of Business Venturing*, 35(4), 105965.

- 1  
2  
3 Drnovsek, M., Cardon, M. S., and Patel, P. C. (2016). Direct and indirect effects of passion on growing  
4 technology ventures. *Strategic Entrepreneurship Journal*, 10(2), 194-213.  
5  
6  
7 Drnovsek, M., Cardon, M. S., and Murnieks, C. Y. (2009). Collective passion in entrepreneurial teams. In  
8 *Understanding the entrepreneurial mind* (pp. 191-215). Springer, New York, NY.  
9  
10  
11 Feng, B., and Chen, M. (2020). The impact of entrepreneurial passion on psychology and behavior of  
12 entrepreneurs. *Frontiers in Psychology*, 11, 1733.  
13  
14 Fesharaki, F. (2019). Entrepreneurial passion, self-efficacy, and spiritual intelligence among Iranian SME owner-  
15 managers. *Psychological Studies*, 64(4), 429-435.  
16  
17  
18 Fornell, C., and Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and  
19 measurement error. *Journal of marketing research*, 18(1), 39-50.  
20  
21  
22 Fredrickson, B. L. (2013). Positive emotions broaden and build. In *Advances in experimental social psychology*  
23 (Vol. 47, pp. 1-53). Academic Press.  
24  
25  
26 Fredrickson, B. L., and Joiner, T. (2002). Positive emotions trigger upward spirals to-ward emotional well-being.  
27 *Psychological science*, 13(2), 172-175.  
28  
29  
30 Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: the broaden-and-build theory of  
31 positive emotions. *American psychologist*, 56(3), 218.  
32  
33  
34 Fredrickson, B. L. (1998). What good are positive emotions? *Review of general psychology*, 2(3), 300-319.  
35  
36 Harman, H. H. (1976). *Modern factor analysis*. University of Chicago press.  
37  
38 Hair Jr, J. F., Howard, M. C., and Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using  
39 confirmatory composite analysis. *Journal of Business Research*, 109, 101-110.  
40  
41  
42 Hair, J. F., Risher, J. J., Sarstedt, M., and Ringle, C. M. (2019). When to use and how to report the results of PLS-  
43 SEM. *European business review*, 31(1), 2-24.  
44  
45  
46 Hair Jr, J. F., Matthews, L. M., Matthews, R. L., and Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated  
47 guidelines on which method to use. *International Journal of Multivariate Data Analysis*, 1(2), 107-123.  
48  
49  
50 Hair, J. F., Hult, G. T. M., Ringle, C. M., and Sarstedt, M. (2014). *A Primer on Partial Least Squares Structural*  
51 *Equation Modeling*.  
52  
53  
54 Harper, D. A. (2008). Towards a theory of entrepreneurial teams. *Journal of business venturing*, 23(6), 613-626.  
55  
56  
57 Henseler, J., Ringle, C. M., and Sarstedt, M. (2015). A New Criterion for Assessing Discriminant Validity in  
58 Variance-based Structural Equation Modeling., *Journal of the Academy of Marketing Science*, 43(1):  
59 115-135.  
60

Hmieleski, K. M., and Baron, R. A. (2008). Regulatory focus and new venture performance: A study of entrepreneurial opportunity exploitation under conditions of risk versus uncertainty. *Strategic Entrepreneurship Journal*, 2(4), 285-299.

Hu, L., and Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1–55.

Hytti, U., Stenholm, P., Heinonen, J. and Seikkula-Leino, J. (2010), "Perceived learning outcomes in entrepreneurship education: The impact of student motivation and team behaviour", *Education + Training*, Vol. 52 No. 8/9, pp. 587-606.

**Jin, L., Madison, K., Kraiczy, N. D., Kellermanns, F. W., Crook, T. R., & Xi, J. (2017). Entrepreneurial team composition characteristics and new venture performance: A meta-analysis. *Entrepreneurship Theory and Practice*, 41(5), 743-771.**

**Kollmann, T., Stöckmann, C., Meves, Y., & Kensbock, J. M. (2017). When members of entrepreneurial teams differ: linking diversity in individual-level entrepreneurial orientation to team performance. *Small Business Economics*, 48(4), 843-859.**

Kiani, A., Yang, D., Ghani, U., and Hughes, M. (2021). Entrepreneurial passion and technological innovation: the mediating effect of entrepreneurial orientation. *Technology Analysis and Strategic Management*, 1-14.

Klotz, A. C., Hmieleski, K. M., Bradley, B. H., and Busenitz, L. W. (2014). New venture teams: A review of the literature and roadmap for future research. *Journal of Management*, 40(1), 226-255.

Kuckertz, A., Kollmann, T., Krell, P., and Stöckmann, C. (2017). Understanding, Differentiating, and Measuring Opportunity Recognition and Opportunity Exploitation. *International Journal of Entrepreneurial Behavior and Research*, 23(1), 78-97.

**Laskovaia, A., Lee, Y., Bogatyreva, K., & Herrmann, P. (2022). Harmonious passion, effectuation and firm performance: the moderated mediation effect of entrepreneurial experience. *Management Decision*, 60(8), 2331-2348.**

Lazar, M., Miron-Spektor, E., Agarwal, R., Erez, M., Goldfarb, B., and Chen, G. (2020). Entrepreneurial team formation. *Academy of Management Annals*, 14(1), 29-59.

**Lee, Y., & Herrmann, P. (2021). Entrepreneurial passion: A systematic review and research opportunities. *Journal of Small Business Strategy*, 31(3), 122-147.**

- 1  
2  
3 Lex, M., Gielnik, M. M., Spitzmuller, M., Jacob, G. H., & Frese, M. (2022). How passion in entrepreneurship  
4 develops over time: A self-regulation perspective. *Entrepreneurship Theory and Practice*, 46(4), 985-  
5 1018.  
6  
7  
8  
9 Li, C., Murad, M., Shahzad, F., Khan, M. A. S., Ashraf, S. F., and Dogbe, C. S. K. (2020). Entrepreneurial passion  
10 to entrepreneurial behavior: Role of entrepreneurial alertness, entrepreneurial self-efficacy, and  
11 proactive personality. *Frontiers in Psychology*, 11, 1611.  
12  
13  
14 Li, J. J., Chen, X. P., Kotha, S., and Fisher, G. (2017). Catching fire and spreading it: A glimpse into displayed  
15 entrepreneurial passion in crowdfunding campaigns. *Journal of Applied Psychology*, 102(7), 1075.  
16  
17  
18 Li, L., and Wu, D. (2019). Entrepreneurial education and students' entrepreneurial intention: does team  
19 cooperation matter? *Journal of Global Entrepreneurship Research*, 9(1), 1-13.  
20  
21  
22 Liang, H. Y., Shih, H. A., and Chiang, Y. H. (2015). Team diversity and team helping behavior: The mediating  
23 roles of team cooperation and team cohesion. *European Management Journal*, 33(1), 48-59.  
24  
25  
26 **Lyndon, S., & Pandey, A. (2021). Deconstructing the shared leadership emergence process in**  
27 **entrepreneurial teams. *Journal of Small Business and Enterprise Development*, 28(3), 360-379.**  
28  
29  
30 Mahto, R. V., and McDowell, W. C. (2018). Entrepreneurial motivation: a non-entrepreneur's journey to become  
31 an entrepreneur. *International Entrepreneurship and Management Journal*, 14(3), 513-526.  
32  
33  
34 Neneh, B. N. (2022). Entrepreneurial passion and entrepreneurial intention: the role of social support and  
35 entrepreneurial self-efficacy. *Studies in Higher Education*, 47(3), 587-603.  
36  
37  
38 Newman, A., Obschonka, M., Moeller, J., and Chandan, G. G. (2021). Entrepreneurial passion: A review,  
39 synthesis, and agenda for future research. *Applied Psychology*, 70(2), 816-860.  
40  
41  
42 Omri, A., and Boujelbene, Y. (2015). Entrepreneurial team: How human and social capital influence  
43 entrepreneurial opportunity identification and mobilization of external resources. *Journal of*  
44 *Entrepreneurship, Management and Innovation*, 11(3), 25-42.  
45  
46  
47 Ozgen, E., and Baron, R. A. (2007). Social sources of information in opportunity recognition: Effects of mentors,  
48 industry networks, and professional forums. *Journal of Business Venturing*, 22, 174-192.  
49  
50  
51 Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., and Podsakoff, N. P. (2003). Common method biases in  
52 behavioral research: a critical review of the literature and recommended remedies. *Journal of applied*  
53 *psychology*, 88(5), 879.  
54  
55  
56 Patzelt, H., Preller, R., and Breugst, N. (2021). Understanding the life cycles of entrepreneurial teams and their  
57 ventures: an agenda for future research. *Entrepreneurship Theory and Practice*, 45(5), 1119-1153.  
58  
59  
60

- 1  
2  
3 Pavlou, P. A., Liang, H., and Xue, Y. (2007). Understanding and mitigating uncertainty in online exchange  
4 relationships: A principal-agent perspective. *MIS quarterly*, 105-136.  
5  
6  
7 Pietersen, M., and Botha, M. (2021). Achieving coherence: towards a model of the nascent-stage behavioral  
8 dynamics of new venture teams. *International Entrepreneurship and Management Journal*, 17(3), 1261-  
9 1290.  
10  
11  
12 Qian, S., Brannon, D. L., & Tabak, F. (2022). Exploring Mechanisms in the Entrepreneurial Passion–  
13 Entrepreneurial Behavior Relationship: Mediating Role of Growth-Oriented Intentions. *Journal of*  
14 *Career Development*, 49(4), 922-933.  
15  
16  
17 Rahman, S. A., Taghizadeh, S. K., Alam, M. M. D., and Khan, G. M. (2020). The functionality of entrepreneurial  
18 passion and entrepreneurial bricolage on micro-entrepreneurs wellbeing. *Journal of Small Business*  
19 *Strategy*, 30(3), 47-64.  
20  
21  
22 Rhee, S.-Y. (2007), "Chapter 4 Group Emotions and Group Outcomes: The Role of Group-Member Interactions",  
23 Mannix, E.A., Neale, M.A. and Anderson, C.P. (Ed.) *Affect and Groups (Research on Managing Groups*  
24 *and Teams*, Vol. 10), Emerald Group Publishing Limited, Bingley, pp. 65-95.  
25  
26  
27 Rhee, S. Y. (2006, August). Shared emotions and group effectiveness: The role of broadening-and-building  
28 interactions. In *Academy of management Proceedings* (Vol. 2006, No. 1, pp. B1-B6). Briarcliff Manor,  
29 NY 10510: Academy of Management.  
30  
31  
32 Ringle, C.M., Sarstedt, M., Mitchell, R., and Gudergan, S.P. (2020). Partial Least Squares Structural Equation  
33 Modeling in HRM Research. *The International Journal of Human Resource Management*, 31(12), 1617-  
34 1643.  
35  
36  
37 Ringle, C. M., Sarstedt, M., and Straub, D. W. (2012). Editor's comments: a critical look at the use of PLS-SEM  
38 in "MIS Quarterly". *MIS quarterly*, iii-xiv.  
39  
40  
41 Santos, S. C., and Cardon, M. S. (2019). What's love got to do with it? Team entrepreneurial passion and  
42 performance in new venture teams. *Entrepreneurship Theory and Practice*, 43(3), 475-504.  
43  
44  
45 Sarstedt, M., Ringle, C. M., and Hair, J. F. (2017). Partial least squares structural equation modeling. *Handbook*  
46 *of market research*, 26(1), 1-40.  
47  
48  
49 Sarstedt, M., Hopkins, L., and Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling  
50 (PLS-SEM): An emerging tool in business research. *European Business Review*, 26(2), 106-121.  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

Shin, Y., Oh, W. K., Sim, C. H. S., and Lee, J. Y. (2016). A multilevel study of supportive leadership and individual work outcomes: The mediating roles of team cooperation, job satisfaction, and team commitment. *Journal of Applied Business Research (JABR)*, 32(1), 55-70.

Singh, R. P., and Gibbs, S. R. (2013). Opportunity recognition processes of black entrepreneurs. *Journal of Small Business and Entrepreneurship*, 26(6), 643-659.

Sriyakul, T., and Jermstiparsert, K. (2019). The mediating role of entrepreneurial passion in the relationship between entrepreneur education and entrepreneurial intention among university students in Thailand. *International Journal of Innovation, Creativity and Change*, 6(10), 193-212.

Su, Q., Luo, L., Lau, D. C., and de Jong, B. (2022). United or divided? Entrepreneurial passion and faultlines in new venture teams. *Journal of Small Business Management*, 1-34.

**Saud Khan, M., J. Breitenecker, R., & J. Schwarz, E. (2014). Entrepreneurial team locus of control: diversity and trust. *Management Decision*, 52(6), 1057-1081.**

Uy, M. A., Jacob, G. H., Gielnik, M. M., Frese, M., Antonio, T., and Wonohadidjojo, D. M. (2021). When passions collide: Passion convergence in entrepreneurial teams. *Journal of Applied Psychology*, 106(6), 902.

Xiao, Y., Dowejko, M. K., Au, K., & Hsu, A. J. (2020). "Jack-of-all-trades" with passion: Keener to pursue startup in a team?. *Journal of Small Business Management*, 58(4), 806-833.

Zhu, X., Yang, S., and Kromidha, E. (2022). The emergence of team entrepreneurial passion from team helping: An affective events theory perspective. *International Small Business Journal*, Vol. 0(0) 1–29. DOI: 10.1177/02662426221089499.

**Zhou, W., Zhang, Y., & Shen, Y. (2017). How shared leadership and team personality composition interact to improve entrepreneurial team performance: Evidence from China. *Journal of Small Business and Enterprise Development*, 24(3), 426-445.**

**Table I** Correlation matrix of measures

	Age	Gender	level of education	Team size	TEP for inventing	TEP for Founding	TEP for Developing	Opportunity recognition	Team performance	Opportunity exploitation	Team cooperation
Age	1										
Gender	0.153	1									
level of education	0.065	0.149	1								
Team size	0.227	0.205	0.243*	1							
TEP for inventing	0.201	-0.097	0.313**	-0.024	1						
TEP for Founding	-0.102	0.006	0.066	-0.346**	0.547**	1					
TEP for Developing	-0.023	0.006	0.118	-0.045	0.234	0.402**	1				
Opportunity recognition	0.047	0.025	0.11	-0.182	0.310**	0.319**	0.103	1			
Team performance	0.260*	0.099	0.101	0.114	0.459**	0.21	0.111	0.221	1		
Opportunity exploitation	-0.103	-0.044	-0.291*	-0.187	0.214	0.370**	0.412**	0.363**	0.281*	1	
Team cooperation	0.093	0.102	0.295*	0.109	0.414**	0.249*	0.11	0.505**	0.375**	0.17	1

**Table II** Items loadings, reliability and validity

Items	Abbreviations	Factor loadings	Cronbach's Alpha	Composite Reliability	Average variance extracted
<b>Team Cooperation</b>					
There is a high level of cooperation between team members.	Coop3	0.792			
People are willing to sacrifice their self-interest for the benefit of the team.	Coop4	0.864			
There is a high level of sharing between team members.	Coop5	0.778			
			0.75	0.856	0.664
<b>Opportunity Exploitation</b>					
My team have set up an organization to pursue a business opportunity we perceived.	OE1	0.751			
			0.749	0.844	0.645

1					
2					
3					
4	Based on a business opportunity we perceived,				
5	we have developed a new market.	OE2	0.745		
6					
7	We have put together an entrepreneurial team				
8	to pursue a business opportunity we perceived.	OE3	0.900		
9					
10					
11					
12	<b>Opportunity recognition</b>			0.794	0.878 0.705
13					
14	My team can recognize new venture				
15	opportunities in industries where I have no	OR1	0.841		
16	personal experience.				
17	My team is good at recognizing potential new				
18	ideas on new products/services, new markets,	OR2	0.796		
19	new ways of utilizing resources, and new ways				
20	of organizing firms				
21	My team has special alertness or sensitivity				
22	toward new opportunities (e.g., new				
23	products/services, new markets, new ways of				
24	utilizing resources, and new ways of	OR3	0.871		
25	organizing the firm).				
26					
27	<b>TEP for inventing</b>			1.00	1.00 1.00
28					
29	We really like finding the right people to				
30	market our product/service to.	TEP_IPF_dev1	0.757		
31	Assembling the right people to work for our				
32	business is exciting.	TEP_IPF_dev2	0.834		
33					
34	Pushing our employees and our team to make				
35	our company better motivates us.	TEP_IPF_dev3	0.759		
36					
37					
38	Nurturing and growing companies is an				
39	important part of who we are as a team.	TEP_IC_dev1	1.00		
40					
41					
42					
43	<b>TEP for founding</b>			1.00	1.00 1.00
44					
45	Establishing a new company excites us.	TEP_IPF_fnd1	0.880		
46	Owning my own company energizes my team.	TEP_IPF_fnd2	0.836		
47					
48	Nurturing a new business through its emerging				
49	success is enjoyable.	TEP_IPF_fnd3	0.831		
50					
51	Being the founder of a business is an				
52	important part of who we are.	TEP_IC_fnd1	1.00		
53					
54	<b>TEP for inventing</b>			1.00	1.00 1.00
55					
56					
57					
58					
59					
60					

1			
2			
3	For us, It is exciting to figure out new ways to		
4	solve unmet market needs that can be		
5	commercialized.	TEP_IPF_inv1	0.698
6			
7	Searching for new ideas for products/services		
8	to offer is enjoyable to our team.	TEP_IPF_inv2	0.860
9			
10			
11	We, as a team, motivated to figure out how to		
12	make existing products/services better.	TEP_IPF_inv3	0.819
13			
14	Scanning the environment for new		
15	opportunities really excites my team.	TEP_IPF_inv4	0.789
16			
17	Inventing new solutions to problems is an		
18	important part of who we are as a team.	TEP_IC_inv1	1.00

---

<b>Team performance</b>		0.843	0.905	0.760
-------------------------	--	-------	-------	-------

---

20			
21			
22	We perceive the amount of work that our team		
23	produces as really good.	Team_Perform1	0.885
24			
25	The quality of work our team produces is		
26	highly satisfying.	Team_Perform2	0.875
27			
28	The overall evaluation of our team's		
29	effectiveness is very good.	Team_Perform3	0.856

---



---

**Table III** Discriminant validity (Fornell and Larcker criterion)

	Opportunity exploitation	Opportunity recognition	TEP for developing	TEP for founding	TEP for inventing	Team cooperation	Team performance
Opportunity exploitation	<b>0.802</b>						
Opportunity recognition	0.330	<b>0.837</b>					
TEP for developing	0.485	0.113	<b>1.000</b>				
TEP for founding	0.363	0.330	0.402	<b>1.000</b>			
TEP for inventing	0.199	0.328	0.234	0.547	<b>1.000</b>		
Team cooperation	0.146	0.519	0.110	0.246	0.416	<b>0.812</b>	
Team performance	0.235	0.249	0.112	0.214	0.461	0.388	<b>0.872</b>

Note: The Data on the diagonal (in bold) is the square root of AVE of the construct while the other values are the correlations with other constructs

**Table IV** Results of path coefficient

Hypotheses	Relationship	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Decision
<b>H1a</b>	TEP for inventing -> Team performance	0.34	0.327	0.152	2.242	0.025	Supported
<b>H1b</b>	TEP for founding -> Team performance	-0.023	-0.021	0.126	0.181	0.857	Rejected
<b>H1c</b>	TEP for developing -> Team performance	0.006	0.006	0.103	0.062	0.95	Rejected
<b>H3</b>	TEP for inventing -> Opportunity recognition	0.328	0.356	0.109	3.017	0.003	Supported
<b>H4</b>	TEP for developing -> Opportunity exploitation	0.501	0.516	0.08	6.242	0	Supported

**Table V** Mediation results

	Total effect		Direct effects		Indirect effects		
	Coefficient	P value	Coefficient	P value	Coefficient	P value	
<b>TEP for inventing-&gt;team performance</b>	0.439	0.001	0.340	0.025	<b>TEP for inventing-&gt;team cooperation -&gt;team performance</b>	0.099	0.115
<b>TEP for founding-&gt;team performance</b>	-0.017	0.901	-0.023	0.857	<b>TEP for founding-&gt;team cooperation -&gt;team performance</b>	0.006	0.912
<b>TEP for developing-&gt;team performance</b>	0.008	0.941	0.006	0.950	<b>TEP for developing-&gt;team cooperation -&gt;team performance</b>	0.002	0.952

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

Journal of Small Business and Enterprise Development

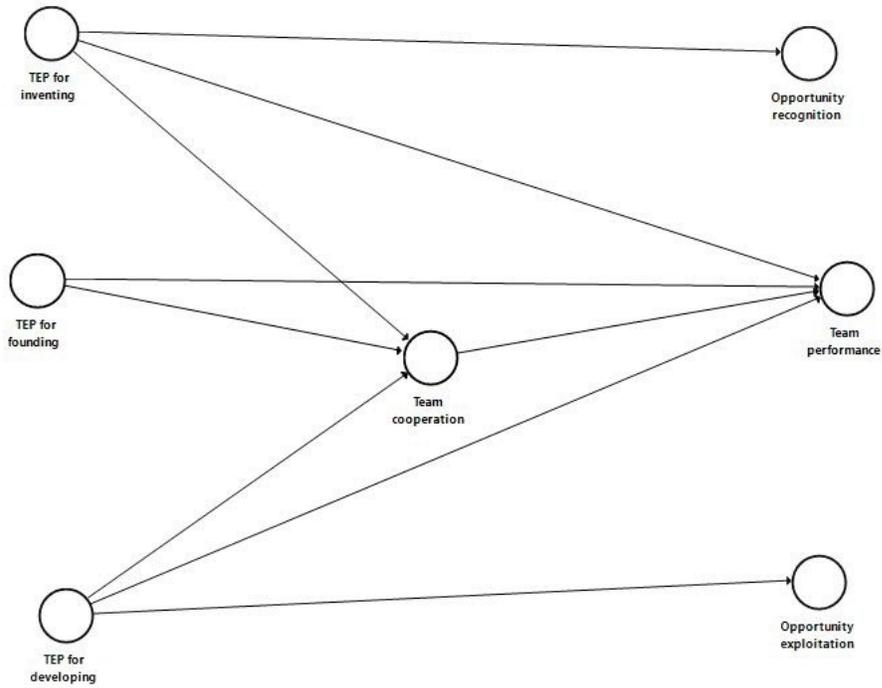


Figure 1 Conceptual framework

197x141mm (96 x 96 DPI)

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60