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# The paths leading to harmonious and obsessive entrepreneurial passion

Arafet Bouhaleb <sup>a,b</sup> and Mohamed Yacine Haddoud <sup>c,d</sup>

<sup>a</sup>Laboratoire LED Université Paris 8 Vincennes - Saint-Denis, France; <sup>b</sup>ICD Business School, Le LaRA, France; <sup>c</sup>Liverpool Business School, Liverpool, UK; <sup>d</sup>Faculty of Business and Law, The British University in Dubai, UAE

## ABSTRACT

Prior studies have typically examined the individual antecedents of entrepreneurial passion, but overlooked the complex interactions among those determinants. This study addresses this gap in the literature by using a fuzzy set qualitative comparative analysis to explore the combinations of educational, structural, and relational support and entrepreneurial self-efficacy that drive two types of entrepreneurial passion; namely, obsessive and harmonious passion. We tested our propositions by reference to a sample of 304 young individuals who had graduated from or were studying at business and engineering schools in France. Data were collected between November 2020 and January 2021. Our findings challenge the net effect approach and indicate that passion is, instead, shaped by several combinations of support mechanisms and individual traits. Specifically, obsessive and harmonious passion are triggered by one common path and two discrete configurations of factors. These findings have important implications for theory and practice.

## KEYWORDS

Entrepreneurial passion; support; self-efficacy; fsQCA

## Introduction

Entrepreneurial passion (EP) has been identified as an important element that can support and drive entrepreneurial careers (Anjum et al., 2020). *Entrepreneurial passion* is defined in terms of “consciously accessible intense positive feelings experienced by engagement in entrepreneurial activities associated with roles that are meaningful for the self-identity of the entrepreneur” (Cardon et al., 2009, p. 517). Over the past decade, interest in EP as a domain of research has intensified (Biraglia & Kadile, 2017; De Mol et al., 2018; Fisher et al., 2018; Lewis & Cardon, 2020; Stroe et al., 2020; Toth et al., 2021). However, recent reviews have revealed several voids that require redress, particularly regarding the drivers of EP (Murnieks et al., 2020).

**CONTACT** Mohamed Yacine Haddoud  [m.y.haddoud@ljamu.ac.uk](mailto:m.y.haddoud@ljamu.ac.uk)  Block 11, 1st and 2nd Floor - Academic City, Dubai, UAE

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First, Newman et al. (2021) noted that antecedents have received less research attention than outcomes, thus highlighting important gaps regarding the roles of environmental and individual factors in stimulating entrepreneurial passion. This gap was also highlighted by Gao et al. (2021: 1), who noted that “what makes entrepreneurs passionate remains unidentified.” Specifically, Zainuddin and Mukhtar (2023) posited that the mechanism underlying the development of entrepreneurial passion in educational settings remains unknown. Second, Lee and Herrmann (2021) identified a limited body of work that has distinguished between the antecedents of harmonious passion and those of obsessive passion, and called for future studies to adopt dualistic models to capture such differences. In this context, harmonious EP reflects an autonomous internalization of the activity into the person’s identity, which occurs voluntarily and without any commitment or constraint. Obsessive EP, in contrast, is driven by an interpersonal affective commitment, according to which individuals have some degree of freedom with regard to the decision to participate in or suspend an activity or project not because of pressure, but because they find it to be important (Murnieks et al., 2020). Adomako and Ahsen (2022) highlighted the need to study both the obsessive and the harmonious aspects of passion to enhance our current understanding. Third, Douglas et al. (2020) raised the need to explore positive emotions in entrepreneurship from a more complex perspective. These authors emphasized the heterogeneities associated with peoples’ emotional reactions and asked the following question: “What are the different pathways leading to an entrepreneur’s positive emotions?” In this regard, several entrepreneurship scholars have urged future researchers to employ more sophisticated techniques that are able to capture complexities in entrepreneurial behavior, which are often missed by research using traditional net effect techniques such as regression analysis (for example, Haddoud et al., 2022; Kadile & Biraglia, 2022; Kraus et al., 2018; Laouti et al., 2022).

To bridge these gaps in the literature, this study aims to explore the complex configurations of drivers that lead to entrepreneurial passion. It considers entrepreneurial self-efficacy (ESE) as well as educational, relational, and structural support as antecedents of harmonious EP and obsessive EP separately. In this regard, ESE affects both types of EP. *Entrepreneurial self-efficacy* is defined as a personal conviction of one’s ability to perform tasks that lead to entrepreneurial outcomes (Chen et al., 1998; van der Westhuizen & Goyayi, 2020). ESE constitutes a source of motivation for the development of entrepreneurial activities and innovative behavior even under difficult conditions (Hsu et al., 2019). Similarly, support factors such as educational, relational, and structural aspects greatly influence entrepreneurial behavior through the ecosystem in which entrepreneurship takes place (Audretsch et al., 2022;

Stenholm et al., 2013). Individuals may react differently to such support factors depending on their personalities and entrepreneurial behavior (Webb et al., 2020).

To address the aim of the study, we use fuzzy set qualitative comparative analysis (fsQCA) to identify configurations of the complex interactions underlying entrepreneurial passion. fsQCA is rooted in set-theoretical research based on Boolean algebra and fuzzy set theory, and it enables researchers to capture highly complex theoretical configurations based on a set of conditions (Rihoux & Ragin, 2009; Urueña et al., 2018). Thus far, most EP studies have been based on net effect tools (for example, Murnieks et al., 2014; Warnick et al., 2021).

In summary, the core contributions of this study are twofold. First, by adopting a configuration approach, we elucidate the complex configurations that shape entrepreneurial passion, thus advancing the extant body of research on the antecedents of entrepreneurial positive emotions such as passion. We therefore respond to the calls of scholars such as Gao et al. (2021), Zainuddin and Mukhtar (2023), Newman et al. (2021), and Douglas et al. (2020). Second, we distinguish the drivers of harmonious passion from those of obsessive passion by testing two separate sets of configurations and uncovering potential disparities, thereby responding to the calls of Adomako et al. (2020) and Lee and Herrmann (2021).

This research was conducted in the French context. Lee and Herrmann's (2021) review of the literature on entrepreneurial passion included no studies that focused on evidence from France. This is problematic as this country is believed to represent a fertile ground for the study of entrepreneurship activity. In fact, the Global Entrepreneurship Monitor highlights the attractiveness of the French entrepreneurial ecosystem, and the World Bank ranks France 32 out of 190 countries in terms of the ease of doing business (The World Bank, 2020). Moreover, entrepreneurial activity in France is largely supported by government programs aimed at promoting entrepreneurship through physical and technological infrastructure. However, while such mechanisms have stimulated entrepreneurial dynamism, the country's total early stage entrepreneurial activity is still among the lowest across countries in the Organisation for Economic Co-operation and Development (OECD). The promotion of entrepreneurship may not have been as proactive in French universities as in those of other nations, leading students to favor employment in large organizations as opposed to entrepreneurial careers (Laouiti et al., 2022).

The next section explicates the theoretical background of this article. Thereafter, we discuss the research method, followed by the fsQCA analysis. Finally, we interpret the findings, and outline the key conclusions.

## Theoretical background

Passion is a strong emotional indicator of the activities that an individual views as important and in which they invest time and energy (Vallerand et al., 2003). The motivation linked to a passion is the result of the perception of the benefits of an idea at the personal, social, or welfare level (Cardon et al., 2009). Such passion guides the individual before, during, and after the formation of an idea in pursuit of the desired benefits (Stroe et al., 2020). Researchers have distinguished between two types of passion. *Harmonious passion* results from the pleasure of engaging in activities in the absence of any internal or external pressure or need (for example, the loss of one's job or a compulsory succession in a family business) (Lafrenière et al., 2011). With regard to this type of passion, the activity in question is integral to the person's identity (Vallerand et al., 2008). *Obsessive passion*, in contrast, results from the intra-personal or interpersonal pressure associated with activities that generate benefits such as esteem and social acceptance (Mageau et al., 2011).

### **Identifying the determinants of EP: Person-Environment Fit Theory**

This study uses person-environment fit theory (PEFT; Kristof-Brown et al., 2005) to explain EP. *Person-environment fit theory* refers to the level of compatibility between the individual and their environment. According to this theory, a person excels and performs well when he or she operates in an environment that matches his or her personal characteristics (Edwards et al., 2006). In an entrepreneurial context, the development of an entrepreneurial spirit takes place in an environment that corresponds to the personality of the aspiring entrepreneur. According to Stam and Van de Ven (2021), entrepreneurship is a collective achievement that depends not only on the traits of the individual, but also on support from various actors to develop a context that is favorable for conducting business. Therefore, entrepreneurial behavior is the result of a set of factors related to individual traits and the ecosystem in which aspiring entrepreneurs evolve (for example, Aldrich & Cliff, 2003; Powell & Eddleston, 2013). Such an ecosystem comprises educational, economic, and social factors that foster a spirit of new venture creation and risk-taking behavior (Spigel, 2017). Therefore, in the following section, we focus on three types of support (educational, structural, and relational) alongside entrepreneurial self-efficacy as factors that impact EP. These factors constitute the foundations of the entrepreneurial ecosystem (Prokop, 2021; Soluk et al., 2021).

### **Support factors**

First, the concept of educational support has evolved both theoretically and practically (Hahn et al., 2020). Such support is an important part of the

ecosystem, as it provides individuals with the entrepreneurial skills necessary to engage in entrepreneurial projects. Several studies have shown that entrepreneurial education improves students' knowledge, helps them build confidence, and consequently improves their entrepreneurial capabilities (for example, Hahn et al., 2020; Onjewu et al., 2021). At the individual level, educational support generates a positive feeling in students regarding the entrepreneurial process and increases their passion (Haddoud et al., 2021). It offers the opportunity for them to engage in a type of reasoning that promotes an entrepreneurial spirit through the development of business plans, the analysis of environmental changes, and the use of startup tools (Bandura, 2002). These tasks allow potential entrepreneurs to be creative, thereby encouraging them to develop the tools they need to create new ventures (Shinnar et al., 2014). Similarly, digital technologies such as the internet, applications, and platforms play a transformational role in this context by changing the entrepreneurial process (Anderson, 2014). These digital tools facilitate access to information and make courses related to entrepreneurship more dynamic and practical. During a project, such technological tools can increase access to key resources to support the entrepreneurial journey (Elia et al., 2020).

Regarding structural support, entrepreneurship is mainly shaped by external factors pertaining to actors and institutions (Aparicio et al., 2016; van der Westhuizen & Goyayi, 2020). The entrepreneurial ecosystem literature has emphasized the importance of this form of support, particularly with regard to the role of the external environment in the development of entrepreneurial culture (O'Connor et al., 2018; Spigel, 2017). Supporting structures such as clusters, innovative ecosystems, and incubators are designed to promote entrepreneurship at the regional and territory levels (Belitski & Desai, 2016). A supportive and flexible climate boosts entrepreneurs' confidence, whereas an unfavorable environment featuring strong barriers to the task of starting a business can decrease motivation and prevent new venture creation. The business environment is constantly changing, and concepts such as digitalization, e-administration, the Internet of Things, and mobile connections are accelerating the development of the creative spirit. Smith et al. (2017) highlighted the role of digital media, particularly online networks, in entrepreneurial success. Therefore, structural support leads to the development of positive feelings among young people with regard to inventing and pursuing business opportunities.

In the same way, relational support helps entrepreneurial behavior develop, as trust in the entrepreneur is supported by his or her associates. Psychological support and advice can be provided by the entrepreneur's family, who represent an important source of such support, especially for young entrepreneurs (Aldrich & Cliff, 2003; Edelman et al., 2016). Family members provide emotional support by listening to the concerns of the aspiring entrepreneur

(Adams et al., 1996), as well as tangible support such as funding. In addition, the entrepreneur's friends constitute a valuable form of social capital that can enhance entrepreneurial success (Stam et al., 2014). Such capital contributes to the development of the personality of the potential entrepreneur and allows him or her to establish close relationships with key stakeholders. Relational support is provided on several levels, ranging from the close circle of friends and family to broader levels, including universities, regional incubators, and other types of entrepreneurial support. Additionally, entrepreneurs rely heavily on digital technology to consolidate their networks and launch projects (Fisher & Reuber, 2011; Smith et al., 2017). Social networks provide legitimacy to entrepreneurs during the introduction of their projects, as well as access to resources, especially financial resources, through crowdfunding platforms (Shabsough et al., 2021).

### ***Entrepreneurial Self-Efficacy (ESE)***

ESE captures “how individuals believe their knowledge and perceive their abilities to execute actions. It provides a general self-referent source of motivation to address difficulties in life” (To et al., 2020, p. 210). Therefore, ESE significantly determines whether individuals pursue an entrepreneurial career and behave entrepreneurially (van der Westhuizen & Goyayi, 2020). ESE impacts several entrepreneurial behaviors such as intention, motivation, behavior, and performance (Miao et al., 2017; Onjewu et al., 2021; To et al., 2020). At this level, ESE appears to be a very important prerequisite of entrepreneurial passion, as it fosters a set of perceptions of one's ability to perform a task or achieve a goal (Zhao et al., 2005). Accordingly, ESE enhances an individual's ability to perform an activity successfully, set ambitious goals, and define clear paths to reach those goals (Murnieks et al., 2014). As Chen et al. (1998, p. 301) indicated, individuals with high levels of entrepreneurial self-efficacy are likely to associate difficult situations with rewards such as profit, community recognition, and psychological fulfillment (Hisrich & Brush, 1984), which encourages them to achieve their future passions and plans. ESE does not focus on past actions, but rather on actions that can be taken in the future (Yang & Cheng, 2009, p. 430).

### ***Exploring the interactions underlying EP: Integrating PEFT with the complexity perspective***

Notwithstanding the aforementioned works, an increasing body of research (see, for example, Beynon et al., 2020, Douglas et al., 2020; Kadile & Biraglia, 2022; Laouiti et al., 2022; Nowiński & Haddoud, 2019; Pérez-Fernández et al., 2022; Şahin et al., 2019) has recently considered entrepreneurship-related behavior to be a complex action that is impacted by multiple equifinal interactions among factors rather than the



influences of isolated features. This approach is in line with complexity theory, which argues that the same outcome can be triggered by multiple equally effective combinations of factors as opposed to standalone drivers (Kumar et al., 2022; Jang et al., 2023). Hence, in conjunction with the claim of PEFT that entrepreneurial behavior is affected by both individual traits and contextual factors (Powell & Eddleston, 2013), we propose that entrepreneurial passion is likely to be driven by complex combinations of support factors (relational, structural, and educational) and personal attributes (self-efficacy). In other words, PEFT identifies the relevant drivers (ingredients), while complexity theory focuses on the interactions among those factors (recipes).

Empirically, to the best of our knowledge, this research is one of the first studies to examine the complexities among the determinants of entrepreneurial passion. That said, entrepreneurial support and self-efficacy have been shown in previous works to interact with other factors to stimulate entrepreneurial behavior. For instance, Nowiński and Haddoud (2019) demonstrated that entrepreneurial self-efficacy interacts with attitudes and role models to affect entrepreneurial intention. Şahin et al. (2019) found that entrepreneurial intention is caused by complex interactions among entrepreneurial self-efficacy and personality traits. Douglas and Prentice (2019) identified the configurations of motives, self-efficacies, and personal conditions that stimulate social entrepreneurial intention. Santos et al. (2021) examined both entrepreneurial intention and social entrepreneurial intention and identified complex configurations that shape these two types of intention, including social entrepreneurial self-efficacy and other values.

Regarding the impact of environmental support (educational, relational, and structural), Perez-Fernandez et al. (2022) concluded that combinations of social network size, entrepreneurial information, influence, and the need for achievement impact entrepreneurial intention. Additionally, Xie et al. (2021) found that configurations of entrepreneurship education with other institutional aspects drive female entrepreneurship. Similarly, Jiang et al. (2021) reported that combinations of entrepreneurship education with other aspects, such as a competition-oriented environment, shape entrepreneurial intention. Moreover, Beynon et al. (2016) showed that configurations of several aspects of entrepreneurial climate affect entrepreneurial activity. In line with these studies, we anticipate that education, structural and relational support, and entrepreneurial self-efficacy complement each other to stimulate entrepreneurial passion. Based on a dualist approach, we expect such combinations to differ between harmonious and obsessive passion. Therefore, we propose the following hypothesis:

Configurations of educational support, structural support, relational support, and ESE lead to high levels of entrepreneurial passion (harmonious and obsessive).

## Method

### *Sample and data collection*

The data used for this study were collected between November 2020 and January 2021 from young individuals who had graduated from or were studying at business and engineering schools in three French universities. Specifically, the research target included individuals who had recently graduated or were in their fifth year and who satisfied the following criteria: (a) students at the beginning of their 5th year who were alternating students in the digital sector,<sup>1</sup> (b) students who had recently graduated (within one year) and who had also been alternating students for at least two years, or (c) student entrepreneurs who possessed the national status of student-entrepreneur in France, which allows students to create their own business while continuing their studies. These criteria were selected because these students would have been exposed to entrepreneurship in the form of either concrete practices or projects. Hence, they could reflect on their lived entrepreneurial experiences.

We opted to employ an online distribution method given the physical barriers caused by the COVID-19 pandemic. In the first phase, we targeted nearly 900 individuals. In the questionnaire, we explained the objectives of the research and provided assurances concerning the anonymity and confidentiality of respondents' answers. In the first round, 157 responses were collected, and a further 136 responses were obtained following a reminder sent out in December 2020. Finally, a second reminder generated an additional 15 responses. Four respondents did not complete certain parts of their questionnaires; these questionnaires were not considered in the analysis. In total, 304 completed responses were included in the final sample.

Overall, 56.9% of the respondents were in their final year of study, while 28% had recently graduated. Both groups had entrepreneurial experience. Additionally, 15.1% of respondents were student-entrepreneurs. Most respondents were between 18 and 26 years old, and 47% were men. To control *ex ante* for common method bias, we explained to the respondents that the data collected would remain anonymous and would be analyzed solely for research purposes. We utilized Armstrong and Overton's approach to check for non-response bias by comparing the results between early and late respondents across three rounds of data collection using an independent sample *t* test. The aim of this approach was to determine whether the means of key constructs exhibited significant differences. The results revealed no major issues with nonresponse bias.

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<sup>1</sup>Alternating students participate in a work-study program that features one week of classes and three weeks of work for a company.

## Measures

This study considers educational, relational, and structural support and ESE to be relevant antecedents of harmonious and obsessive EP.

To measure the three levels of support, we adapted Ben Youssef et al.'s (2021) scales, which were based on Türker and Selçuk (2009). The educational support (*EduS*) variable includes items related to entrepreneurship support at the university level. It identifies the role of academic institutions in encouraging students to choose an entrepreneurial career (Türker & Selçuk, 2009). Relational support (*RelaS*) captures entrepreneurship support at the level of family and friends (Ben Youssef et al., 2021). The corresponding items refer to the support received from friends and family. Structural support (*StrucS*) is measured using items that capture support at the macro level, including the social, cultural, economic, political, and technological dimensions (Türker & Selçuk, 2009).

To measure entrepreneurial self-efficacy (*ESE*), we adapted the items developed by To et al. (2020), which capture individuals' perceptions of their own abilities and their motivation to address those difficulties. This variable is assessed using a 5-point Likert scale. Finally, EP is measured in terms of harmonious EP and obsessive EP. In this context, it should be noted that EP has been studied from two different perspectives; namely, the dualistic model of passion (Vallerand et al., 2003) and entrepreneurial passion (Cardon et al., 2009). According to Lee and Herrmann's (2021) review, although both models capture passion in terms of affection and identification, they differ with regard to their approaches to entrepreneurship. In summary, Vallerand et al.'s (2003) model captures entrepreneurs' overall passion, which it divides into harmonious and obsessive passions. In contrast, Cardon et al.'s (2009) model takes a more specific approach and captures EP in terms of three distinct entrepreneurial role identities: inventing, developing, and founding passion. The premise of this approach is that entrepreneurs experience three different levels of passion, depending on their role. Hence, Lee and Herrmann (2021: 127) concluded that the "Cardon et al. (2009) approach is domain-specific, rather than an overall understanding of passion." Accordingly, we adopted Vallerand et al.'s (2003) approach for two reasons. First, our study focused more on overall passion, and, second, our particular interest was in the dualistic harmonious-obsessive perspective on passion since previous calls for research had highlighted the importance of studying the potential differences that distinguish between the drivers of these two types of passion (for example, Lee and Herrmann, 2021; Adomako and Ahsen, 2022). In this regard, Vallerand et al. (2003) developed 12 items (6 for each dimension) to assess passion, an approach which was later validated by Marsh et al. (2013). We reduced the number of items to six following Murnieks et al. (2020). The full list of items is provided in [Appendix A](#). Participants rated the statements on 5- and 6-point Likert scales.

### **Method of analysis**

To test the propositions of the study, a configuration approach was used with the assistance of fsQCA software (version 3.1b) (Ragin & Davey, 2016). First introduced by Ragin (1987) in the field of political science, the technique has since been extended and adapted to phenomena in other social sciences (Ragin, 2008). This approach is rooted in set theoretical research based on Boolean algebra and fuzzy set theory. The objective of fsQCA is to identify the underlying combinations of causal conditions that lead to an outcome (Pappas & Woodside, 2021; Ragin, 2008). This method offers a practical means of shifting the research focus from the question of the significance of the linear relationship to the possible solutions and configurations that generate a cause (Fainshmidt et al., 2020). The method also highlights the most important factors with respect to necessary and essential conditions. Its advantages lie in its ability to explain the causal paths leading to an outcome (Eng & Woodside, 2012; Schneider & Wagemann, 2010). In summary, fsQCA captures both complementarity and substitution across a set of drivers and highlights several configurations that could generate the desired outcome (Nikou et al., 2022).

In the field of entrepreneurship, fsQCA is a relatively novel technique that can offer an enhanced understanding of the complexity underlying entrepreneurial behavior (Nikou et al., 2022). In their review regarding the use of fsQCA in entrepreneurship, Kraus et al. (2018, p. 27) argued that “fsQCA is already much more than a ‘fancy’ method, it is an accepted and growing analysis that shapes thinking and crafts theory.” fsQCA is able to make important contributions to the field of entrepreneurship by (a) explicating the complexities underlying entrepreneurial phenomena, which have often been overlooked by research using traditional techniques; and (b) facilitating finer-grained entrepreneurship theory development (Douglas et al., 2020; Nikou et al., 2022). In fact, extant applications of fsQCA to the study of entrepreneurial behavior have revealed novel and comprehensive insights, thereby extending and enriching the set of findings previously offered by traditional statistical models (Kraus et al., 2018; Nikou et al., 2022).

To be precise, Douglas et al. (2020, p. 2) viewed the development of entrepreneurship theory as “being limited by our reliance on the relatively simple explanatory models implicit in traditional analytical methods,” thus leaving considerable gaps in our knowledge of individuals and subgroups within heterogeneous populations. In this regard, these authors proposed fsQCA as a suitable approach for several reasons. First, it captures the holistic reasoning employed by entrepreneurs, which often incorporates interactions among personal and contextual factors. Second, it identifies the multiple

**Table 1.** Constructs' reliability and validity.

Construct	<i>Alpha</i>	<i>AVE</i>	<i>CR</i>
Educational Support	0.811	0.483	0.863
Relational Support	0.775	0.531	0.848
Structural Support	0.764	0.595	0.851
ESE	0.710	0.634	0.838
Harmonious EP	0.729	0.653	0.848
Obsessive EP	0.820	0.738	0.894

pathways that shape entrepreneurial behavior instead of the single dominant net effects explanations offered by traditional regression-based techniques. Third, it can be useful for advancing research on the role of emotions in entrepreneurship (such as passion in the present study) by shedding light on the multiple pathways and configurations that shape entrepreneurs' positive emotions.

### Construct reliability and validity

Before conducting fsQCA, all constructs were subjected to reliability and validity analyses using WarpPLS software (Kock, 2020). The composite reliability (CR) and Cronbach's alpha values were above the threshold of 0.70, thus confirming the good reliability of the constructs (Nunnally, 1978). Convergent validity was assessed by examining whether the average variance extracted (AVE) was above the cutoff value of 0.50 (Fornell & Larcker, 1981). All but one variable met this threshold (Table 1). *EduS* had an AVE of 0.48, which is considered to be close enough to the minimum score needed. Hence, we decided to keep this construct to avoid altering its meaning. Discriminant validity was established using the Fornell-Larcker criterion (Fornell and Larcker, 1981; Kock, 2014). Here, we examined whether the square root of the AVE of each construct was greater than its highest correlation with any other construct. The results confirmed that, in most cases, no major issues with discriminant validity were noted.

### fsQCA

fsQCA aims to overcome the limitations of qualitative and quantitative methods. This approach has since been extended and adapted to the social sciences (Ragin, 2008). QCA unites the advantages of qualitative data (for example, cases) and quantitative data such as scale variables (Ordanini et al., 2014).

### Data calibration

Fuzzy set calibration is required to conduct fsQCA. Both the causal conditions (for example, antecedents) and the outcome (harmonious EP or obsessive EP)

are calibrated based on three cutoffs for membership ranging from 0 to 1 (Ragin, 2008), in which context 1 represents full membership, 0.5 represents the point of maximum ambiguity, and 0 represents full nonmembership. Scholars have used various approaches to determine the appropriate thresholds for calibrating Likert scale data (Laouiti et al., 2022). In this study, an approach based on the 95th, 50th, and 5th percentiles was preferred due to the skewness of the data distribution. Table 2 depicts the thresholds used in this study.

### ***Necessity analysis***

Necessity and sufficiency analysis constitute the basis of configurational path analysis. An initial round of analysis is conducted to determine whether the causal conditions are necessary for the outcome to occur. A condition is considered to be necessary when its consistency score is above 0.9 (Greckhamer et al., 2018). Consistency indicates the degree of coherence within a subset relationship and is analogous to the notion of statistical significance (Schneider & Wagemann, 2010), while coverage measures are analogous to *R*-square in regression analysis and should be above 0.75 (Ragin, 2000). Table 3 displays the results of the causal necessity analysis. None of the conditions was deemed necessary.

### ***Sufficiency analysis***

The truth table is constructed based on two criteria: (a) frequency, defined in terms of the number of cases, and (b) consistency relative to the extent of shared causal conditions or the complexity of causal conditions. According to Ragin (2008), the minimum frequency is 1. However, for larger samples, higher minimum values can be selected. For the consistency threshold, Ragin (2008) recommends 0.75 as a minimum value for a combination to be consistent, although higher thresholds such as 0.80 can also be used (Pappas & Woodside, 2021). We used the Quine-McCluskey method to minimize Boolean functions. fsQCA computes three types of solutions: complex, parsimonious, and intermediate solutions. The complex solution presents all the possible configurations among the antecedents and outcomes. In general, this solution provides the highest number of complex solutions, thus complicating the interpretation. Kent (2015) recommends the use of the intermediate solution.

**Table 2.** Percentiles used for calibration.

	EducS	RelS	StrucS	ESE	Harmonious EP	Obsessive EP
5 <sup>th</sup> (Fully out)	2.1	3.0	2.0	1.6	2.7	2.6
50 <sup>th</sup> (Crossover)	3.7	4.4	3.5	3.6	4.6	4.6
95 <sup>th</sup> (Fully in)	4.5	5.0	5.0	5.0	6.3	7.0

**Table 3.** Analysis of the necessary conditions for predicting EP.

Configurational Element	Obsessive EP				Harmonious EP			
	High		Low		High		Low	
	Consistency	Coverage	Consistency	Coverage	Consistency	Coverage	Consistency	Coverage
<i>EduS</i>	0.67	0.68	0.63	0.58	0.68	0.69	0.63	0.58
<i>~EduS</i>	0.59	0.63	0.66	0.64	0.59	0.63	0.66	0.66
<i>RelaS</i>	0.69	0.65	0.67	0.56	0.68	0.63	0.67	0.57
<i>~RelaS</i>	0.53	0.64	0.58	0.63	0.54	0.64	0.57	0.63
<i>StrucS</i>	0.75	0.70	0.68	0.58	0.74	0.69	0.69	0.59
<i>~StrucS</i>	0.55	0.66	0.65	0.70	0.56	0.66	0.63	0.69
<i>ESE</i>	0.72	0.73	0.65	0.59	0.72	0.72	0.65	0.60
<i>~ESE</i>	0.60	0.65	0.70	0.69	0.60	0.65	0.70	0.70

Note: *EduS* = Educational Support, *RelaS* = Relational Support, *StrucS* = Structural Support.

By distinguishing between the two types of passion, we generated two truth tables. We used consistency thresholds that exceeded 0.80 and a frequency threshold of 12 cases (capturing at least 80% of the data). We also ensured that only combinations with a proportional reduction in inconsistency (PRI) value of 0.50 and higher were retained (Greckhamer et al., 2018). Table 4 depicts the combinations that lead to obsessive and harmonious EP.

The presence of a condition is indicated by a black circle (●), and its absence is indicated by a barred circle (⊖); blank cells indicate that the presence or absence of a condition does not matter.

Starting with high obsessive EP, three causal combinations emerged. The first such combination (1a) combined high ESE and EduS, whereas the second configuration (2a) featured high EduS alongside low levels of RelaS and StrucS. The final combination (3a) included high levels of RelaS, StrucS, and ESE. The first combination exhibited the highest empirical relevance, followed by the third and then the second solutions. With regard to combinations leading to highly harmonious EP, three configurations emerged. The first such combination (1b) featured high levels of EduS, StrucS, and ESE. The second path (2b) exhibited high levels of RelaS, StrucS, and ESE, while the third configuration (3b) includes low levels of EduS, RelaS and StrucS as well as high ESE. The first two combinations exhibit approximately similar empirical relevance, followed by the third combination, the empirical relevance of which is lower. Overall, the following patterns can be highlighted:

- (1) When EducS is present without the other two levels of support, obsessive EP is likely to emerge, regardless of whether ESE is present.

**Table 4.** Intermediate solution.

Configuration	<i>EduS</i>	<i>RelaS</i>	<i>StrucS</i>	<i>ESE</i>	Raw Coverage	Unique Coverage	Consistency
<b>Obsessive EP</b>							
Frequency cutoff: 12; Consistency cutoff: 0.83							
1a	●			●	0.57	0.10	0.77
2a	●	⊖	⊖		0.31	0.03	0.80
3a		●	●	●	0.46	0.07	0.85
<b>Solution Coverage</b>	0.68						
<b>Solution Consistency</b>	0.75						
<b>Harmonious EP</b>							
Frequency cutoff: 12; Consistency cutoff: 0.86							
1b	●		●	●	0.47	0.05	0.84
2b		●	●	●	0.46	0.06	0.83
3b	⊖	⊖	⊖	●	0.24	0.04	0.86
<b>Solution Coverage</b>	0.59						
<b>Solution Consistency</b>	0.80						

Notes: *EduS* = Educational Support, *RelaS* = Relational Support, *StrucS* = Structural Support. Black circles (●) indicate the presence of a condition, whereas barred circles (⊖) indicate its absence.



- (2) The presence of RelaS, StrucS and ESE in combination can lead to both obsessive and harmonious EP.
- (3) The combination EduS-ESE generates obsessive EP unless it is complemented with StrucS.
- (4) Harmonious EP can be achieved with the combination ESE-StrucS alongside either EduS or RelaS.
- (5) EduS and RelaS appear to be mutually exclusive with regard to harmonious EP when both ESE and StrucS are present.
- (6) ESE seems to be particularly important for the development of harmonious EP since it is present in all three causal combinations and can be sufficient for some students to develop harmonious EP.

## **Discussion and conclusion**

This study explored the complex interactions among educational, structural, and relational support as well as ESE that lead to obsessive and harmonious EP. The empirical analysis was performed using the fsQCA method, a comparative method that is able to capture complex the causal configurations that lead to a given outcome. This research therefore challenges the net effect approach that, instead, considers isolated relationships between the causal variables and the outcome. In essence, the results of this research indicate that both harmonious and obsessive EP are achieved through complex interactions among several factors, indicating equifinality. Such findings address recent calls in the entrepreneurship literature, including Newman et al.'s (2021) and Gao et al.'s (2021) appeals for more studies to focus on the environmental antecedents (such as education support in this study) and individual factors (such as self-efficacy) that lead to entrepreneurial passion. Similarly, the findings shed more light on the mechanisms underlying the formation of entrepreneurial passion, thus bridging the research gap highlighted by Zainuddin and Mukhtar (2023). Finally, the findings also respond to the calls by Lee and Herrmann (2021) and Adomako and Ahsen (2022) for research distinguishing between the antecedents of harmonious passion and those of obsessive passion with the goal of revealing the potential differences between them. These findings are discussed in the following sections.

### ***Equifinal solutions to obsessive and harmonious passion***

Starting with obsessive EP, the fsQCA uncovered three equifinal pathways that are likely to drive this form of passion. The main difference observed across those three configurations was the presence of high levels of educational support OR high relational and structural support, but not both simultaneously. In other words, educational OR environmental support, when present "alone," leads to high levels of obsessive EP. In this respect, prior studies have

found that less autonomy is associated with obsessive passion (Bonneville-Roussy et al., 2013; Mageau et al., 2009). Hence, one could argue that when aspiring entrepreneurs receive full support (educational and environmental), they develop more autonomy. In contrast, when they have access to only one type of support (as in the present case), their autonomy is decreased, thus leading to obsessive passion.

With regard to harmonious EP, the main difference observed across the driving pathways was the substitution of relation and educational support in instances featuring the presence of other aspects (such as ESE and structural support). This finding implies that the support received through entrepreneurs' networks can offset educational support. In fact, such relational and social support can take the form of informational support (Neneh, 2022) and practical knowledge, which could replace educational support. In this regard, Hayter (2013) acknowledged that entrepreneurs use their personal networks to acquire information. De Clercq et al. (2015) found that relational support can serve as a source of knowledge sharing. Cai et al. (2021) explained that the social capital resulting from close network support offers access to critical information that can enhance entrepreneurial passion and, subsequently, boost nascent entrepreneurship behavior.

### ***Obsessive versus harmonious passion: The role of relational support***

A common path between the two types of EP emerged. In this context, the presence of RelaS, StrucS, and ESE in combination can lead to both obsessive and harmonious EP simultaneously. This paradoxical role can be explained by reference to the nature of RelaS to which students have access. In this study, this type of support depends on the nature of the individual's close networks such as friends and family members. Hence, while the StrucS to which students are exposed is likely to be homogenous, the corresponding RelaS is likely to vary. We anticipate that the nature of the passion transmitted from the individual's close network shapes the type of passion that they develop. In this regard, studies in the broader business psychology literature have referred to the notion of "emotional contagion," according to which passion is transferred from parents to their offspring. For instance, Gilal et al. (2018) concluded that passion for brands is transferred from parents to children via emotional contagion. In a workplace setting, Vallerand (2010, p. 114) explained that "social factors can affect the on-going development of passion, once passion has been initially developed" and reported that a clan culture promotes harmonious passion for work, whereas a market culture leads to obsessive passion. Similarly, Ho et al. (2021) found that employees' harmonious passion for work was similar to that of individuals they trusted, whereas obsessive passion was not. Ho and Astakhova (2020) demonstrated that supervisors'

work harmonious and obsessive passion can be transferred to their employees, albeit indirectly. The underlying premise is that individuals' work passion is shaped by trusted others in their social environment (Ho et al., 2021). In an entrepreneurship setting, Hubner et al. (2020) suggested that entrepreneurial passion is transferable from one person to another. Therefore, we believe that the combination of RelaS, StrucS, and ESE leads to obsessive or harmonious passion depending on the type of passion transmitted through the individuals' close networks.

### ***The importance of ESE for harmonious passion***

ESE was particularly important for the development of harmonious EP and could be sufficient to enable some students to develop this type of passion when the three types of support are absent. This finding confirms prior research on the important role of ESE in entrepreneurship passion (Cardon et al., 2013. Cardon & Kirk, 2015). However, this study extends these findings by showing that ESE is not only important for entrepreneurship passion, but also likely to generate the best type of passion; that is, harmonious EP. Furthermore, the combination ESE-StrucS alongside either EduS or RelaS was also found to be a good precursor of harmonious EP. In this context, we emphasize the complementarity between ESE and perceived support (StrucS, EduS, and RelaS). The intersection between ESE and support access has been demonstrated in previous research. Marshall et al. (2020) claimed that access to resources during the development of a new venture affects aspiring entrepreneurs' self-efficacy in entrepreneurship tasks. Likewise, Elnadi and Gheith (2021, p. 12) concluded that "students' positive perception of the environmental and contextual factors will enhance the students' self-efficacy to start a new business." These authors noted that intersections among individual or environmental variables can explain entrepreneurial behavior and that the potential value of entrepreneurial self-efficacy can be realized only when students' perceptions of programs, support, education, and training are favorable. Following this logic, we posit that harmonious passion is more likely to emerge when entrepreneurial self-efficacy is triggered by either structural and educational support or structural and relational support.

### ***The nuanced role of educational support***

The role of EducS appears to be much more nuanced than previous evidence has suggested. Indeed, when students are exposed to EducS in contexts in which they perceive StrucS and RelaS as absent, they are likely to develop obsessive EP. Additionally, the pair EduS-ESE generates obsessive EP unless it is complemented with StrucS. These

combinations highlighted the need to complement EducS with other types of support to ensure that harmonious EP is developed instead of obsessive EP. In this regard, the interaction between entrepreneurship education and the institutional environment has been reported in prior works. For instance, Walter and Block (2016) concluded that entrepreneurship education is more effective with regard to fostering entrepreneurial activity in contexts featuring limited entrepreneur-friendly regulations, financial capital availability, control of corruption, and public image of entrepreneurs. However, our study extends these findings by showing that when educational support is present in the absence of other types of support, it may lead to obsessive rather than harmonious entrepreneurship passion. In this context, Cai et al. (2021) found that both entrepreneurship education and social capital drive entrepreneurial passion. Furthermore, Adomako et al. (2020) explained that in contexts featuring institutional gaps and a lack of support mechanisms, entrepreneurs' passion can be affected by frustration. However, Iyortsuun et al. (2021) also reported that obsessive entrepreneurs might fare better in environments that lack support and resources as a result of their higher levels of persistence. Hence, in this study, we posit that individuals who receive entrepreneurship education and perceive environmental support to be absent are more likely to develop an obsessive form of passion due to their need for higher persistence to overcome the frustrations generated by such gaps. Similarly, Bonneville-Roussy et al. (2013) posited that obsessive passion is developed when individuals perceive pressures with regard to pursuing and persisting in a given activity as opposed to a social environment that supports their autonomy. This finding could suggest that students who perceive education support in isolation might be subject to pressures that drive them to pursue an entrepreneurship career, but do not offer access to other types of support such as social and structural support. Hence, a higher fear of failure emerges, thus leading to obsessive passion. In this regard, Stroe et al. (2020) explained that a stronger fear of failure is associated with obsessive passion. Here, the pressures associated with the possibility of failure increase in the absence of the necessary support, which leads to obsessive passion.

## **Implications and limitations**

### ***Theoretical implications***

In the recent entrepreneurship literature, calls have been made for further exploration of the key factors stimulating entrepreneurial passion (for example, Murnieks et al., 2020; Newman et al., 2021; Gao et al., 2021; Zainuddin and Mukhtar 2023). Similarly, appeals have been made to develop dual models that

can distinguish between harmonious and obsessive passion (Lee and Herrmann, 2021; Adomako and Ahsen, 2022), two outcomes that could have very different implications for aspiring entrepreneurs. Therefore, to fill these gaps, this study offers a fresh perspective on the individual and contextual drivers of both harmonious and obsessive EP. More importantly, to address the shortcomings of the few extant works on this topic, we employed a more holistic method (that is, configuration analysis) that captures the complex interactions that lead to entrepreneurial passion. We therefore contribute additional evidence to the nascent body of research calling for a complexity approach to the study of entrepreneurial behavior in general (Şahin et al., 2019; Nowiński & Haddoud, 2019; Beynon et al., 2020, Douglas et al., 2020; Pérez-Fernández et al., 2022; Kadile & Biraglia, 2022; Laouiti et al., 2022).

In summary, the results of this research highlight several paths that are likely to be associated with obsessive and harmonious entrepreneurial passion, in which context some differences are observed between these two types of EP. Broadly speaking, it seems that personal factors (for example, entrepreneurial self-efficacy) are important, but insufficient with regard to the emergence of harmonious or obsessive passion, and these factors should be accompanied by favorable conditions in terms of educational, structural, or relational support. To our knowledge, this study is among the first few works to use a configuration approach to explore the contextual and personal factors driving obsessive and harmonious EP.

The adoption of a configuration approach in this research advances the extant entrepreneurship literature in several ways. Based on Douglas et al.'s (2020) claims regarding the theoretical contributions of fsQCA, we posit that the identification of multiple configurations leading to entrepreneurial passion represents a step forward in the development of a taxonomy of passionate entrepreneurs. Distinct configurations within the same group indicate the existence of heterogeneity across various subgroups of entrepreneurs, which requires a more nuanced approach on the part of future researchers. For instance, to develop harmonious passion, some entrepreneurs may require educational support, while others instead need more relational support. Identifying such discrepancies is crucial for advancing our current understanding, as it highlights the heterogeneities among passionate entrepreneurs that are typically hidden when researchers focus on the average trend exhibited by the overall sample. This approach allows future researchers to avoid the oversimplifications resulting from a linear approach. A more nuanced and tailored approach facilitates more focused and effective policy interventions instead of a one-size-fits-all approach that does not apply to all groups. Furthermore, our study makes possible further replications that can verify the generalizability of the emerging configurations to other contexts, thus revealing new theoretical foundations for the potential existence of common

profiles of passionate entrepreneurs as well as context-specific configurations. Finally, the fact that this research highlights multiple paths is likely to reconcile any conflicting findings regarding the drivers of entrepreneurial passion. We believe that such conflicting evidence is mainly due to the one-size-fits-all approach that has previously been adopted.

### ***Practical implications***

From a practical perspective, this study will be of interest to key stakeholders in the development of entrepreneurial culture, including entrepreneurs, entrepreneurship educators, and policymakers. It has implications for entrepreneurs and potential entrepreneurs regarding the importance of the support factors and ESE in the emergence and development of their passions, as it can help them establish and succeed in their businesses. Similarly, our results may inform educational institutions and policymakers regarding the implementation of an education system that promotes such passions, especially in a context that is characterized by several challenges such as digital transformation and health crises.

Our results show that with the right relational support, individuals with high levels of self-efficacy and structural support are more likely to exhibit harmonious passion. Hence, aspiring entrepreneurs and educators should not only nurture their self-efficacy, but also ensure that the right kind of network is accessible, bearing in mind that not all networks are supportive. Additionally, educational support alone is not sufficient to ensure EP and may even lead to a less optimal form of passion; that is, obsessive EP. Namely, the impact of entrepreneurship education is negatively affected by the frustrations and challenges caused by inefficient institutions and network support, thus leading to obsessive passion. Therefore, policymakers should adopt a holistic approach to the task of supporting entrepreneurship by fostering education and ensuring that relevant supporting mechanisms are in place.

### ***Limitations***

This research has several limitations that may provide opportunities for future research. The first limitation concerns our sample, which comprised graduates of business and engineering schools who exhibited particular characteristics. These individuals all exhibited the same academic backgrounds and had taken the same courses in entrepreneurship and digital innovation; they also belonged to the same entrepreneurial ecosystem. However, passion for entrepreneurship depends on the person's context. A person with a salaried job can exercise their passion in the company for which they work by engaging in several activities. This approach provides financial security, implying that even if such individuals have the necessary capacities to create a startup, they prefer to keep their job. A person waiting

for an opportunity tends to maximize his or her efforts to find a favorable situation by establishing relationships with several actors who could ultimately help them to realize their goal of creating their own company. Additionally, new entrepreneurs are attached to their projects, and their level of motivation is high; hence, their main concern is to promote their projects. Future research could thus focus on people in the same professional situation to draw more rigorous conclusions regarding their passion. Additionally, future research could use more refined measures to capture contextual support and self-efficacy.

Second, our study was limited to the driving paths of obsessive and harmonious entrepreneurial passion. However, one important question that researchers have not yet fully explored pertains to how those distinct forms of passion shape subsequent entrepreneurial behavior and activity. For instance, Bayraktar and Jiménez (2022) highlighted the mixed findings, particularly with regard to obsessive passion, concerning the link between passion and entrepreneurs' outcomes. Similarly, Newman et al. (2021, p. 849) acknowledged the need to capture the potential negative outcomes associated with being excessively passionate. Therefore, we call for future studies to explore the consequences of entrepreneurial passion, whether harmonious or obsessive, on new venture creation. Third, our findings did not consider the roles of background factors such as age, gender, and entrepreneurial status in shaping the configurations associated with entrepreneurial passion. Hence, we call for future works to consider such factors as conditions. We view this suggestion as an opportunity to move away from the traditional "control variable" approach to a focus on a more nuanced set of configurations that include such background aspects.<sup>2</sup> Fourth, the fsQCA analysis uncovered various substitutable combinations leading to EP. While an attempt was made to explain such substitutions, we call for future qualitative investigations to provide deeper insights into such trade-offs. Fifth, our study captured overall perceptions of EP using Vallerand et al.'s (2003) dualist approach. We call for future studies to replicate this work using Cardon et al.'s (2009) more specific approach to EP with the goal of identifying potential implications concerning the drivers of passion. A sixth limitation pertains to our use of cross-sectional data. Inferences to causality in this article are based on the theoretical foundations of this research. To confirm causality, we call for future research to adopt a longitudinal approach. Finally, the fact that our study was conducted in the context of the COVID-19 crisis should be highlighted. This health crisis had strong impacts on entrepreneurs, startups, and small- and medium-sized enterprises. In particular, the dynamism of the French ecosystem was affected by the COVID-19 crisis. This context could have generated a sense of fear among young people, which would thus impact their EP. Therefore, we propose that future research should explore the drivers of passion in the period following the COVID-19 crisis.

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## Disclosure statement

No potential conflict of interest was reported by the author(s).

## ORCID

Arafet Bouhaleb  <http://orcid.org/0000-0001-6587-5228>

Mohamed Yacine Haddoud  <http://orcid.org/0000-0002-2335-2389>

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## Appendix A. Items and Factor Loadings

Construct	Loadings
<b>Educational Support</b> (Ben Youssef et al., 2021; Türker & Selçuk, 2009)	
The education in university encourages me to develop creative ideas for being an entrepreneur	0.664
My university develops my entrepreneurial skills and abilities	0.705
My university provides the necessary knowledge about entrepreneurship	0.463
The knowledge acquired from the Internet helps me become an entrepreneur	0.631
ICT usage in university encourages me to develop creative ideas for being an entrepreneur	0.585
Availability of ICT tools at the university	0.870
Access to the Internet at the university increases chances for me to become an entrepreneur	0.855
<b>Relational Support</b> (Ben Youssef et al., 2021; Türker & Selçuk, 2009)	
If I decide to be an entrepreneur, my close network (from work, school, and neighborhood) will support me	0.701
If I decide to be an entrepreneur, my friends will support me	0.813
If I decide to be an entrepreneur, my friends on social networks will support me	0.728
If I decide to be an entrepreneur, having Internet and ICT access at home would support my career	0.803
If I decide to be an entrepreneur, my family members will support me	0.574
<b>Structural Support</b> (Ben Youssef et al., 2021; Türker & Selçuk, 2009)	
The French economy provides many opportunities for entrepreneurs	0.556
In France, entrepreneurs are encouraged by a structural system that includes private, public, and non-governmental organizations	0.818
The digitalization of the French economy encourages me to become an entrepreneur	0.848
The digital world provides many opportunities for entrepreneurs	0.826
<b>ESE</b> To et al. (2020)	
You enjoy your abilities in new businesses	0.812
You feel motivated to make a new business commitment and gain new knowledge	0.841
How would you rate your competency in entrepreneurship?	0.732
<b>Harmonious EP</b> (Marsh et al., 2013; Murnieks et al., 2020; Vallerand et al., 2003)	
For me, being an entrepreneur is a passion	0.708
The new things that I discover by being an entrepreneur allow me to appreciate it even more	0.897
Being an entrepreneur is well integrated in my life	0.808
<b>Obsessive EP</b> (Marsh et al., 2013; Murnieks et al., 2020; Vallerand et al., 2003)	
Entrepreneurship is the only activity that really engages me	0.781
I have a tough time controlling my need to be an entrepreneur	0.917
Being an entrepreneur is so exciting that I sometimes lose control over it	0.875