




The influence of the positive affective trait on the willingness to act entrepreneurially: The mediating effect of opportunity evaluation

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Abstract

This article extends previous literature on opportunity evaluation by analysing how positive affect influences opportunity evaluation and the subsequent willingness to act entrepreneurially. We draw on two mediational channels (i.e., the affect-to-affect-to-outcome and affect-to-cognition routes) regarding the influence of affect on positive outcomes upon arguments that opportunity evaluation comprises of the cognitive representations of the focal opportunity and of oneself. Specifically, we analyse the mediating effects of the image of the opportunity and self-efficacy in the relationship between positive affect and the willingness to act entrepreneurially. We test our hypotheses on a sample of nascent entrepreneurs participating in training programmes in six Spanish incubators whom were asked to evaluate their own opportunities. Our findings show that positive affect exerts a positive indirect effect through the image of the opportunity, but do not indicate any mediating effect of self-efficacy. These findings may help entrepreneurs understand the affective subjectivity of their opportunity assessments.

Keywords

entrepreneurship, positive affect, emotions, opportunity evaluation, willingness to act

Introduction

Entrepreneurship can be defined as the willingness to act on an opportunity deemed worthy of pursuit (McMullen and Shepherd, 2006). Before entrepreneurial individuals decide to act on a business

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opportunity, they evaluate the personal attractiveness¹ of that opportunity. Research on entrepreneurship has begun to explore the role of affect in opportunity evaluation; given that entrepreneurs interpret information and make judgements during this process, the literature on entrepreneurship considers opportunity evaluation a cognitive phenomenon (Keh et al., 2002; Palich and Bagby, 1995). The psychology literature has found that affect relates to both cognition and action (Forgas, 2002; Fredrickson, 2001), suggesting a more profound study of affect is essential to better understand entrepreneurial cognition (Baron, 2008; Baron and Tang, 2011) and thus, opportunity evaluation. Several theories have addressed this relationship between affect or emotions and cognition and action focussing on positive affect; for instance, the theory on the affective congruency effect (Baron, 2008; Rusting, 1998) or Fredrickson's (1998, 2001) broaden-and-build theory.

Positive affect is particularly relevant to the processes underlying venture creation (Baron, 2008) specifically, to opportunity evaluation (Welpel et al., 2012) for several reasons. First, affect has a stronger influence in contexts involving uncertainty, unpredictability and personal risk (Brundin and Gustafsson, 2013; Forgas, 1995), such as that of entrepreneurship (Cardon et al., 2012). Second, the influence of affect has been shown to be especially salient when a decision requires constructive thinking, and a task is self-relevant (Fiedler, 1990; Forgas, 1995), both of which are evident in the case of entrepreneurial opportunity evaluation. Finally, entrepreneurs are more likely to experience higher levels of positive, rather than negative, affect (Baron et al., 2012). This has an important influence on essential qualities, for example, confidence and optimism etc., within entrepreneurial decision making (Baron et al., 2012; Lyubomirsky et al., 2005).

There are relatively few empirical studies of the relationship between affect or emotions, opportunity evaluation and the willingness to act on an opportunity. For instance, Foo (2011) establishes a direct link between specific emotions – namely, fear, anger, happiness and hope – and risk evaluations. Grichnik et al. (2010) find a positive influence of happiness on opportunity evaluation but a negative influence on the tendency to act on opportunities. Further, Welpel et al. (2012) analyse how specific emotions such as fear, joy and anger moderate the relationship between opportunity evaluation and the willingness to become an entrepreneur by acting upon an opportunity.

Although these studies reveal the influence of affect and emotions on individual willingness to act on an opportunity, there are alternative arguments (Alvesson and Sandberg, 2011). First, they overlook the necessary connection between affect and both opportunity evaluation and the willingness to act as well as the importance of considering them as related variables. For instance, as a future line of inquiry Welpel et al. (2012) recommend analysing why, if positive affect leads individuals to evaluate an opportunity positively, some are willing to exploit the opportunity while others are not. Despite being overlooked by entrepreneurship studies, recent organisational psychology research, such as that by Diener et al's (2020), has related positive affect with positive outcomes using affect, cognition, social behaviour and physiology as mediating mechanisms. Based on these mediating mechanisms, Diener et al. (2020) present four routes, two of which (the affect-to-affect-to-outcome and affect-to-cognition routes) may help explain how positive affect influences the willingness to act entrepreneurially, both directly and indirectly, through the cognitive evaluation of an opportunity.

Second, extant studies rarely analyse the intermediate cognitive representations underlying the relationship between positive affect and the willingness to act. Entrepreneurial cognition is deemed to be the knowledge structures individuals use to process information (Allinson et al., 2000) and make judgements, assessments or decisions regarding opportunity evaluation and venture creation (Mitchell et al., 2002). Through this cognitive approach, Mitchell and Shepherd (2010) argue that an entrepreneur's willingness to act on an opportunity depends on two cognitive representations: the

image of the opportunity in terms of desirability, feasibility and environment, and the image of the self, but they do not explain the affective antecedents of these cognitive representations. In a contemporary study, however, [Ivanova et al. \(2018\)](#) illustrate the relationship between certain emotional paths and opportunity evaluation; they measure opportunity evaluation as desirability and feasibility and thereby, developing the image of the opportunity. In the same vein, [Biraglia and Kadile \(2017\)](#) explore the mediating effect of self-efficacy between passion and entrepreneurial intentions. Overall, these studies analyse either the opportunity aspect, or the individual aspect, and overlook the issue that both the image of the opportunity, and of oneself, may condition the willingness to act entrepreneurially.

Third, empirical studies such as those by [Foo \(2011\)](#), [Grichnik et al. \(2010\)](#) and [Welpel et al. \(2012\)](#) usually employ experimental methods using short case studies on samples of entrepreneurs or business students, which they note as a limitation. Although this method allows them to study the influence of affective states on opportunity evaluation and the decision to act, 'it is still a simplification' ([Grichnik et al., 2010](#): p. 25) of a real venture-creation process.

Based on these considerations regarding previous research, the purpose of this article is to analyse the different effects that positive affect, particularly the positive affective trait, may have on both opportunity evaluation and the willingness to act entrepreneurially, considering them as related variables. To do so, we draw on two of [Diener et al.'s \(2020\)](#) routes (the affect-to-affect-to-outcome and affect-to-cognition-to-outcome routes) to study whether and how the direct effect of positive affect on the willingness to act diverges from the indirect effect that positive affect exerts through evaluative cognitions. Our study explores the entrepreneurial evaluative cognition underlying this relationship in more depth; drawing upon [Mitchell and Shepherd's \(2010\)](#) arguments, we analyse both the entrepreneur's image of the opportunity and of the self. We also overcome the possible 'simplifications' related to experimental methods by using a sample of entrepreneurs evaluating the opportunities they are actually trying to pursue.

We make several contributions to existing literature. First, our study responds to the call to reveal more about how cognition and emotion interrelate to shape entrepreneurial behaviours ([Foo, 2011](#)). More specifically, this article contributes to the existing literature that has begun to analyse the role of affect and emotions in either opportunity evaluation ([Foo, 2011](#); [Ivanova et al., 2018](#)) or the willingness to act on an opportunity ([Grichnik et al., 2010](#); [Welpel et al., 2012](#)) by going a step further. We analyse how positive affect influences opportunity evaluation and, in turn, the willingness to act on an opportunity while acknowledging that these variables relate to each other.

Second, opportunity evaluation infers a necessary connection between an opportunity and an individual ([Dahlqvist and Wiklund, 2012](#); [Grégoire and Shepherd, 2012](#)). Based on this nexus between individual and opportunity, [Grégoire and Shepherd \(2012\)](#) argue that an important theoretical challenge is to analyse whether the attributes of an opportunity influence opportunity perceptions, the subsequent entrepreneurial intent and which individual characteristics lead to these different perceptions and intent. Despite being considered a valid challenge, analyses of this individual-opportunity nexus are scarce ([Davidsson, 2015](#)), with the majority focusing either on the opportunity, or on the individual, aspect ([Dahlqvist and Wiklund, 2012](#)). Our study connects both parts, and drawing upon [Mitchell and Shepherd's \(2010\)](#) arguments, we explore how an individual's positive affective trait leads to different assessments of opportunity attributes (image of the opportunity), different self-efficacy perceptions (image of self) and the subsequent willingness/unwillingness to act.

Third, our research uses a sample of nascent entrepreneurs who have presented their ideas at business incubators. Studying entrepreneurs evaluating their own opportunities clarifies the importance of self-relevant information for opportunity evaluation and also 'the emotional importance of real-world situations' ([Gigerenzer, 1984](#) in [Wood and Williams, 2014](#): 582) in which uncertainty

and personal risk lead to a higher influence of affect (Baron, 2008; Cardon et al., 2012). Thus, instead of using an experimental method, our study aims to explore these considerations using a sample of entrepreneurs who evaluate their own opportunities.

Finally, we extend the previous literature, which has mainly focused on affective states (Grichnik et al., 2010; Welpe et al., 2012 and Foo, 2011 for an exception), by analysing affective traits. We focus on affective traits since entrepreneurship, including opportunity evaluation and the willingness to act, is a 'journey that takes place over time' (McMullen and Dimov, 2013: p. 1482), and affective traits, as stable long-term tendencies, may accompany that journey. Our focus on affective traits may also avoid some questionable interpretations regarding the measurement of states whilst avoiding reverse causality in non-experimental methods.

Conceptual framework

The image of the opportunity and the image of the self: evaluating an opportunity to be willing to act entrepreneurially

Opportunity evaluation comprises of: 'entrepreneur judgments and beliefs regarding the degree to which perceived situations and circumstances represent a personally desirable and feasible action path' (Wood and McKelvie, 2015: p. 256). Based on how entrepreneurs interpret information and make judgements (Allinson et al., 2000), it is argued that opportunity evaluation is essentially a cognitive phenomenon (Keh et al., 2002; Palich and Bagby, 1995). Opportunity evaluation is a process differentiated from the stages of recognition (Wood et al., 2014) and exploitation (Haynie et al., 2009; Wood and Williams, 2014). Recognition is inherently a creative process in which creative ideas emerge as opportunities (Dimov, 2007); it focuses on opportunities identified as third-person opportunities so, for a hypothetical subject. Opportunity evaluation makes it personal and refers to individuals assessing opportunities for themselves based on their dispositions, interests and experiences (Wood et al., 2014). Further, unlike opportunity evaluation, a cognitive process (Palich and Bagby, 1995), exploitation involves turning cognitions into actions and actually pursuing an opportunity (Wood and McKelvie, 2015). Such affective dispositions are connected to individual cognitive perceptions of the attributes of opportunities (Mitchell and Shepherd, 2010) and condition the opportunity-evaluation process (Welpé et al., 2012). In this article, we connect the attributes of opportunities to individual affective traits and analyse the individual-opportunity nexus during the opportunity-evaluation phase. According to Mitchell and Shepherd's (2010) analysis of opportunity evaluation, the willingness to act entrepreneurially is conditioned by two cognitive representations: the image of the opportunity and the image of the self. Images are cognitive representations that allow individuals to interpret information, to create expectations using that information and subsequently, to act (Gioia and Poole, 1984).

The *image of the opportunity* is a cognitive representation by the entrepreneur of some attributes, such as the feasibility, desirability and environment of the opportunity, (Mitchell and Shepherd, 2010) utilised to assess if future venture creation is worthwhile (McMullen, 2010). According to previous research about desirability and feasibility attributes (Fitzsimmons and Douglas, 2011; Ivanova et al., 2018) and their role in the decision to act on an opportunity, entrepreneurs prefer opportunities deemed valuable and related to previous knowledge (Baron and Ensley, 2006; Krueger, 1993; Mitchell and Shepherd, 2010). Regarding the uncertain environment in which opportunity-evaluation decisions are made (Mitchell and Shepherd, 2010), entrepreneurs prefer opportunities that can limit competition (Williams and Wood, 2015) in order to act on these opportunities (Mitchell and Shepherd, 2010).

The *image of the self* is a cognitive representation explaining why individuals make different evaluation decisions when confronting similar opportunities (Mitchell and Shepherd, 2011). A key component of the image of the self is self-efficacy defined as the: ‘belief in one’s capabilities to organize and execute actions required to manage prospective situations’ (Arora et al., 2013: p. 363). In the entrepreneurial context, personal cognitive perceptions of the self are defined as the perceived efficacy to achieve expected entrepreneurial outcomes (Drnovšek et al., 2010) and are related to a higher willingness to act entrepreneurially (Mitchell and Shepherd, 2010). Entrepreneurial self-efficacy has also been shown to be an essential antecedent of entrepreneurial action (Arora et al., 2013; Kickul et al., 2009; Zhao et al., 2005).

Entrepreneurs’ positive affective trait

As noted, scholars have recently shown a growing interest in the role of affective dynamics in the venture-creation process (Cardon et al., 2012). In this literature, different terms have been used to refer to similar concepts, such as mood, core affect, affect, emotion, affective trait, affective state, affective arousal and valence (Delgado-García et al., 2015), which requires clarification before delving deeper into the affective facet of opportunity evaluation. We focus on entrepreneur affect, defined as conscious access (Fredrickson, 2001) to the ‘simplest raw feelings’ (Russell, 2003: p. 148). Consistent with Fredrickson (2001), we use affect as a general concept referring to what Russell (2003) calls core affect and Morris (1989) calls mood,² and what Watson and Tellegen (1985) refer to as affect. Affect is long lasting and conceptualised as free floating or objectless as it can be experienced without a known previous stimulus (Fredrickson, 2001; Russell, 2003). In contrast to affect, emotions fade faster, occur as short-lived episodes (Rhoades et al., 2001; Russell, 2003), and are attributed to a meaningful object (Fredrickson, 2001). An emotional experience means a change in affect and implies directing attention towards, appraising, and attributing the experience to a specific object (Delgado-García et al., 2015; Fredrickson, 2001).

Based on this differentiation between emotions and affect, research has evolved around two predominant perspectives. Whereas emotions are described as fitting into discrete categories, leading to the ‘emotions-as-discrete-units’ perspective (Diener et al., 2020; Fredrickson, 2001), affect is described as varying along broader lines (Baron, 2008) and a limited number of fundamental dimensions, leading to the ‘dimensional affect perspective’ (Diener et al., 2020; Fredrickson, 2001). According to the emotions-as-discrete-units perspective, each primary emotion is an isolated, meaningful unit with a specific effect (Diener et al., 2020). The dimensional affect perspective, however, argues that the affect domain transcends discrete emotions (Fredrickson, 2001; Larsen et al., 2002) and is best represented by two underlying dimensions (Larsen et al., 2002): first, arousal (high to low or activated to inactivated) and second, valence (positive to negative or pleasant to unpleasant) (Larsen et al., 2002; Watson and Tellegen, 1985). For instance, in this perspective excitement is viewed as a high-arousal, positively valenced emotion (Delgado-García et al., 2015; Larsen et al., 2002). The varimax rotation of both dimensions of arousal and valence leads to two new axes described as positive and negative affect (Watson and Tellegen, 1985; Watson et al., 1988). These terms are used extensively on self-reported affect (Watson et al., 1988; Weiss, 2002).

We focus on the dimensional affect perspective as opportunity evaluation and the willingness to act are decision-making processes that happen over a relatively long period, so we focus on affect, which persists over time and outlasts short-lived emotional episodes. In addition, when making decisions, entrepreneurs tend to experience multiple simultaneous emotions instead of single discrete emotions (Podoyntsyna et al., 2012). The emotions-as-discrete-units approach may be more useful for exploring emotional states induced by a specific event in the moment as those

emotions can easily be isolated. Nevertheless, as opportunity evaluation and the willingness to act are decision-making processes that happen over a relatively long period, it may be difficult to choose only one specific emotion from the multiplicity experienced, and isolate its influence.

The two axes resulting from the varimax rotation of arousal and valence namely, positive and negative affect, show low negative correlations between each other, pointing to high independence (Weiss, 2002), and emerge as highly distinctive dimensions (Watson et al., 1988). Nevertheless, although individuals can experience positive and negative affect at the same time, the presence of high positive affect and high negative affect simultaneously is rare (Bledow et al., 2013; Fong, 2006). According to Fredrickson's (1998) broaden-and-build theory, positive affect operates as an antidote and undoes the effect of negative affect on individual thought-action repertoires. Research on affect also reveals that positive and negative affect do not produce parallel effects (Lyubomirsky et al., 2005). Positive affect is related to high concentration, energy and pleasurable engagement (Watson et al., 1988); these have effects on important attributes related to entrepreneurial evaluation and action, such as sociability, the ability to cope and task performance (Lyubomirsky et al., 2005).

We focus on positive affect as a distinctive dimension from negative affect (Watson et al., 1988). Treating these constructs as distinctive dimensions with asymmetrical effects, the psychology literature has developed theoretical models that only analyse the effects of positive affect. Among such models Fredrickson's (1998, 2001) broaden-and-build theory relates positive affect³ to broader scopes of cognition and positive enduring outcomes. The literature on entrepreneurship has also focused on positive affect as entrepreneurs tend to experience this more frequently than negative affect (Baron et al., 2012). For instance, Baron and Tang (2011) explore how positive affect influences entrepreneurial creativity and innovative behaviour, and Cardon et al. (2009) study the effect of passion⁴ on entrepreneurial behaviours.

Regarding the difference between affective states and traits, whereas affective states can change from moment to moment (Baron, 2008; Rhoades et al., 2001), affective traits are stable differences in individual long-term dispositions to experience positive or negative affect (Rusting, 1998; Rhoades et al., 2001; Watson et al., 1988). Individual affective traits operate as the sum of individual states (Rhoades et al., 2001; Watson and Tellegen, 1985) that can be experienced together both sequentially and simultaneously (Rothman and Melwani, 2017). Accordingly, affective traits and states produce parallel cognitive effects across many different situations (Lyubomirsky et al., 2005; Rusting, 1998). We focus on affective traits. This is consistent with broaden-and-build theory (Fredrickson, 1998, 2001) and suggests that the cumulative role of positive affect over time, that is, positive affective trait broadens cognition, behaviour, affect and physiology (Diener et al., 2020), generating positive enduring outcomes (Diener et al., 2020). In the entrepreneurial context, the willingness to act entrepreneurially can be considered a positive enduring outcome resulting from the effect of positive affect on cognition. We also focus on affective traits, rather than states, because measured states may lead to inappropriate interpretations (Larsen et al., 2002). For instance, according to Larsen et al. (2002), when researchers measure the effects of individual positive affective states, they must be analysing affective traits, or the most likely or expected value for each person. Therefore, this measure might suggest that a particular kind of individual is most likely to be in a positive state, and that their disposition to experience positive affect points to a positive affective trait. Moreover, focusing upon affective traits addresses possible reverse causality between entrepreneur affect and opportunity evaluation when assessing the opportunities being developed. According to Lazarus (1991), affective states derive from individual cognitive representations of what is happening (images or beliefs). These affective states feed back into the process and determine how an individual appraises new cognitive representations (Lazarus, 1991; Scherer and Moors, 2019). For instance, it is argued that entrepreneurial action, specifically confidence resulting

from deciding to act entrepreneurially, generates second-order effects and new positive affective states (Hayward et al., 2010). Affective traits, however, have a strong influence on appraisals and therefore, on images or beliefs, but as stable tendencies, they are less likely to change and do not feed back into the process. Hence, from here on, the variable 'positive affect' refers to this theorisation focussing on the dimensional affect perspective and particularly on the positive affective trait.

Hypotheses: the role of affect in opportunity evaluation

Entrepreneurship is a decision-making process (Mitchell and Shepherd, 2010) that centres on an opportunity and culminates in entrepreneurial action (Wood and McKelvie, 2015). Therefore, evaluating an opportunity involves a cognitive process that leads to the willingness to create a new venture (Foo, 2011; Grichnik et al., 2010; Welpe et al., 2012). Psychology research has traditionally related positive affect to entrepreneurial action tendencies (Fodor and Pinteá, 2017). This relationship may be explained through Fredrickson's (1998, 2001) broaden-and-build theory. In the entrepreneurial context, *broaden* refers to an entrepreneur's ability to expand thought-action repertoires triggered by positive affect (Hayward et al., 2010), while *build* refers to the subsequent ability of these repertoires to generate enduring positive outcomes (Diener et al., 2020; Hayward et al., 2010). Drawing on broaden-and-build theory, Diener et al. (2020) refer to the dimensional affect perspective to connect positive affect to enduring positive outcomes through four mediating mechanisms: affect, cognition, social behaviour and physiology. Based on these mechanisms, Diener et al. (2020) develop four routes: the (1) affect-to-affect-to-outcome, (2) affect-to-cognition-to-outcome, (3) affect-to-behaviour-to-outcome and (4) affect-to-physiology-to-outcome routes. Two of these routes allow us to explain the relationship between positive affect, cognitive representations of the opportunity and of the self, and the willingness to act entrepreneurially. The first route allows us to argue a direct link between positive affect and the willingness to act based on affective spirals and the undoing effect. The second allows us to indirectly link positive affect to the willingness to act entrepreneurially through the image of the opportunity and through self-efficacy. Figure 1 outlines our research model.

According to the affect-to-affect-to-outcome route (Diener et al., 2020), maintaining and boosting positive affect promotes positive affective spirals (positive affect enhances further positive affect) and the undoing effect (positive affect mitigates the influence of negative affect) (Diener et al., 2020; Fredrickson, 1998). Positive affect promotes further positive affect (Diener et al., 2020) and encourages entrepreneurs to broaden their tendency to seize opportunities (Fodor and Pinteá, 2017; Grichnik et al., 2010). In the same vein, it has been shown that positive affect builds positive enduring entrepreneurial outcomes (Fodor and Pinteá, 2017), such as durable positive beliefs about the future (Diener et al., 2020). Positive affect leads individuals to set more ambitious goals (Delgado-García et al., 2012; Forgas, 1998) and to be more venturesome (Lyubomirsky et al., 2005). Moreover, it is associated with a positive belief about one's ability to make better use of entrepreneurial resources and to undertake entrepreneurial tasks (Fodor and Pinteá, 2017; Hayward et al., 2010). These personal outcomes promoted by positive affect are also related to higher motivation to invest effort in a new venture (Diener et al., 2020) and lead to a higher willingness to act entrepreneurially (Brundin and Gustaffson, 2013). Drawing on these arguments, we hypothesise the following:

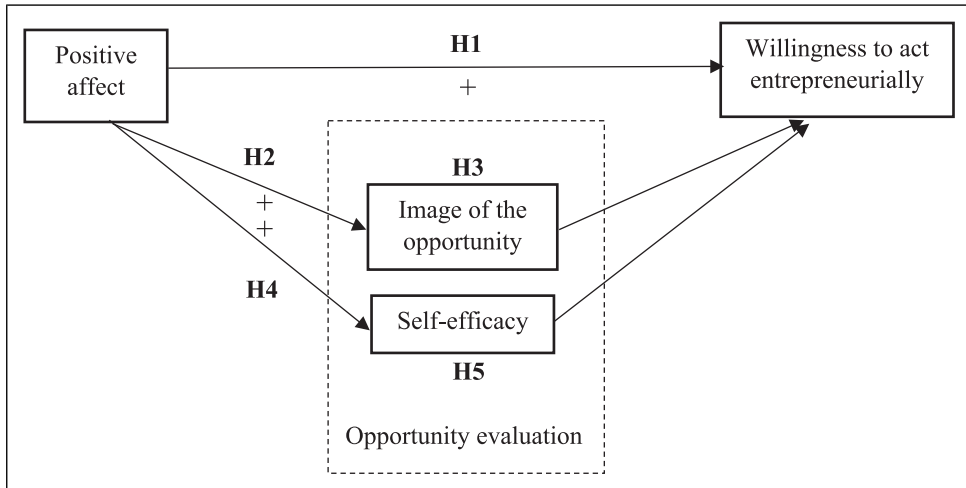


Figure 1. Research model.

Hypothesis 1. An entrepreneur's positive affect is directly and positively related to the willingness to act entrepreneurially.

An additional channel that links positive affect to outcomes is the affect-to-cognition-to-outcome route (Diener et al., 2020). This route allows us to explain the link between positive affect and the two cognitive representation – image of the opportunity and image of self – that entrepreneurs use to evaluate their opportunities (Mitchell and Shepherd, 2010). According to the affect-to-cognition-to-outcome route (Diener et al., 2020) and, more specifically, to the role of affect in cognition (Fredrickson, 2001), positive affect encourages entrepreneurs to expand their attention span and range of cognition (Fredrickson, 2001; Fodor and Pinteá, 2017). In effect, it broadens individual perceptions of events, objects and subjects (Clare et al., 1993; Fredrickson, 1998). The image of the opportunity is a cognitive representation created around individual perceptions and expectations when evaluating that opportunity (McMullen, 2010). This image includes intangible cues about the desirability and feasibility attributes of the opportunity (Brundin et al., 2008).

As well as through this affect-to-cognition-to-outcome route, positive affect has been linked to consistently favourable judgments and evaluations (Baron, 1987, 2008). For instance, it has been shown that positive affect encourages entrepreneurs to evaluate ideas more favourably than those who do not experience such positive affect (Baron et al., 2012; Grichnik et al., 2010; Welpe et al., 2012). This relationship between positive affect and favourable evaluations can be explained by 'affective congruency' (Baron, 2008; Rusting, 1998): affect guides cognitive processing, thereby making consistent information available (Russell, 2003). Significantly, this affective congruency effect operates even when affect is unrelated to the object, person or event being analysed. In other words, affect may influence judgments even when that affect does not proceed from the object, person or event being evaluated (Baron, 2008). In particular, positive affect activates positive associations or memories (Grichnik et al., 2010; Welpe et al., 2012) and may lead entrepreneurs to focus on positive information regarding opportunities (Delgado-García et al., 2015). Thus, when an individual constructs an image of the opportunity, they use affect to broaden their perceptions and recall more positive information and memories. Based on this reasoning, we propose the following:

Hypothesis 2. Positive affect leads to a favourable image of the opportunity.

Psychology research suggests that positive affect influences individual perceptions (Fredrickson, 2001; Welpe et al., 2012) and influences their cognitive representations; namely, the image of the opportunity. In addition, the literature on entrepreneurship (Mitchell and Shepherd, 2010) links these cognitive representations to the decision to act entrepreneurially. This connection suggests a mediation effect that can be explained by the affect-to-cognition-to-outcome route mentioned above (Diener et al., 2020). This route draws on previous research suggesting that positive affect positively influences individual perceptions (Fredrickson, 2001) and thus, shapes cognitive representations and generates enduring positive outcomes prior to performance (Diener et al., 2020). In our analysis, the cognitive representation of an opportunity that is, the image of the opportunity, leads to positive outcomes, such as a willingness to act entrepreneurially (Mitchell and Shepherd, 2010).

Entrepreneurs create images of their opportunities to make predictions about future potential (Gruber et al., 2015) and future courses of action (Shepherd and Krueger, 2002). That is, the final purpose of the image of the opportunity is to create a mental framework to help the entrepreneur evaluate the opportunity and drive his or her willingness to act on that opportunity. When entrepreneurs evaluate an opportunity by creating an image of it, they rely on opportunity-specific attributes (Wood and Williams, 2014). Regarding these attributes, entrepreneurs consider the environment of an opportunity (Shepherd et al., 2007), especially its feasibility and desirability, to create an image of and evaluate the opportunity (Fitzsimmons and Douglas, 2011; Ivanova et al., 2018; Mitchell and Shepherd, 2010). The environmental component of an opportunity is based on expected competitor actions (Holland and Garret, 2015; McGrath, 1996; Mitchell and Shepherd, 2010) and, more concretely, the possibility of defending the future market position of the opportunity against competitors: the opportunity limits competition (Haynie et al., 2009). Entrepreneurs are likely to perceive an opportunity more negatively if there is significant competition (Williams and Wood, 2015). The feasibility component reflects an entrepreneur's perception of having the necessary competencies to start a specific business (Fitzsimmons and Douglas, 2011; Krueger, 1993; McMullen and Shepherd, 2006); this also refers to related prior knowledge held by the entrepreneur: 'the greater the relatedness of the knowledge underlying the opportunity to that possessed by the individual, the more feasible a potentially valuable opportunity seems' (Mitchell and Shepherd, 2010: p. 141). Desirability is related to the value of the expected outcome of an opportunity (Fitzsimmons and Douglas, 2011) and, in turn, to the resource efficiency of that opportunity, which justifies assigning resources to that opportunity rather than an alternative (Wood and Williams, 2014). Scholars have conceptualised this value, which forms the desirability opportunity-image component, as an opportunity's potential for considerable increases in efficiency and effectiveness (Haynie et al., 2012).

In sum, entrepreneurs, as decision makers, create an image of their opportunities to analyse if those opportunities are personally desirable and feasible in order to decide a course of action (Krueger, 1993). As noted, positive affect leads to a favourable image of the opportunity. This association suggests a positive mediation effect of the image of the opportunity in the relationship between positive affect and the willingness to act entrepreneurially. Therefore, we hypothesise the following:

Hypothesis 3. A favourable image of the opportunity positively mediates the relationship between positive affect and the willingness to act entrepreneurially.

According to Mitchell and Shepherd (2010), when entrepreneurs use external information to create cognitive representations of their opportunities and evaluate their potential, they focus not

only on the perceived attributes of those opportunities but also on cognitive representations of the self and their own potential: namely, self-efficacy (Verheul et al., 2005). Self-efficacy hinges on individual cognition (Hmieleski and Baron, 2008) and helps individuals assess, regulate, and enhance their own abilities to attain personal goals (Hmieleski and Baron, 2008; Zimmerman, 2006). Consequently, according to Diener et al.'s (2020) affect-to-cognition-to-outcome route and, more specifically, based on the relationship between affect and cognition, positive affect broadens one's cognitive perception of the self. Positive affect may promote more positive evaluations by entrepreneurs of their own abilities as they activate affectively congruent information and memories (Baron, 2008) and therefore, perceive more positive skilled behaviours and fewer negative unskilled behaviours in themselves (Forgas, 2002). This reasoning leads to our next hypothesis:

Hypothesis 4. Positive affect leads to a higher perceived self-efficacy.

Following Diener et al.'s (2020) affect-to-cognition-to-outcome route and its mediational effect, positive affect promotes larger thought-action repertoires (Fredrickson, 2001), guiding cognition to a favourable perception of oneself and building positive entrepreneurial outcomes (Dalborg and Wincent, 2015). Individuals with positive affect perceive higher self-efficacy; this belief subsequently leads to a higher willingness to act entrepreneurially. Self-efficacy is deemed to be an individual's belief in his or her abilities to execute the behaviour required to achieve given accomplishments (Bandura, 1977; Barbosa et al., 2007). Thus, self-efficacy is a cognitive representation of one's abilities. Specifically, individuals with a strong sense of self-efficacy have a higher tendency to act upon an opportunity (Drmovšek et al., 2010). Entrepreneurs with higher perceived self-efficacy tend to take greater risks believing they can overcome impediments to opportunities using their skills (Krueger and Dickson, 1994). In addition, when assessing opportunities, entrepreneurs with a high degree of self-efficacy belief perceived opportunities to be more positive when they do not strictly align with personal values (Shepherd et al., 2013). Indeed, individuals with higher perceived self-efficacy are more prone to believe they have an actionable idea, even if this appears unlikely, (Drmovšek et al., 2010; Rauch and Frese, 2007) and are generally more willing to pursue an entrepreneurial career (Kickul et al., 2009). This connection leads to a positive mediation effect of perceived self-efficacy in the relationship between positive affect and the willingness to act entrepreneurially. Thus, we propose the following hypothesis:

Hypothesis 5. Perceived self-efficacy positively mediates the relationship between positive affect and the willingness to act entrepreneurially.

Method

Sample and survey

To test our hypotheses, we used a sampling frame of entrepreneurs who were actually assessing business opportunities. Some have already studied the influence of affective components in opportunity evaluation (Foo, 2011; Grichnik et al., 2010; Ivanova et al., 2018; Welpé et al., 2012). Most have employed experimental studies, mostly conjoint analysis, with samples of experienced entrepreneurs or business students; they offer theoretical cases of entrepreneurial opportunities to analyse their judgements regarding given situations. This approach has some weaknesses. First, when using a sample of established businesses, there is the risk of success bias. Such bias occurs when researchers base their analysis on entrepreneurs who have positively evaluated their business

opportunities, successfully creating a venture but overlook those who were not successful in this task (Aldrich, 1999; Davidsson and Honig, 2003). Second, theoretical cases with limited choice options may enhance comparison between participants, but do not take into account all relevant information, nor the affective importance of real situations (Gigerenzer, 1984; Wood and Williams 2014) This is crucial in the emotional and uncertain context of entrepreneurship. Thus, our study aims to take into consideration this personal-risk approach by focusing on the affect of entrepreneurs assessing opportunities they are actually developing.

The focus of our analysis is the opportunity-evaluation phase of the entrepreneurial process, or the stage before starting a new firm, which corresponds with the definition of the Global Entrepreneurship Monitor of nascent entrepreneurship. Nascent entrepreneurship includes those individuals who have taken some steps to start a new business, such as developing a business plan, organising a team, engaging in marketing efforts, or beginning to save money (Arenius and Minniti, 2005; Hatak and Snellman, 2017). In order to study nascent entrepreneurs and how they evaluate their opportunities, we collected data from those taking part in training programmes in incubators in Spain. Business incubators allow entrepreneurs to spend time on developing the necessary knowledge and competencies to create a firm and also, to explore the real potential of their opportunities (Choi and Shepherd, 2004; Rice, 2002).

Our data collection was conducted in collaboration with six business incubators in Spain with four- to six-month training programmes held in 2018 and 2019 in which participants presented a business opportunity to be evaluated. Through this collaboration, we were able to contact 216 entrepreneurs to undertake a survey obtaining 129 questionnaires with a response rate of 59.72%. From the initial sample of 129, nine questionnaires were rejected because of incomplete information, leaving a final sample of 120 entrepreneurs. This sample size is consistent with, and exceeds many, other empirical studies on opportunity evaluation using samples of entrepreneurs (Wood and McKelvie, 2015). The final sample comprised 74 men and 46 women with average business experience and start-up experience of one year and an average age of 27 years old. Using hierarchical linear modelling, we found no differences between the incubators ($p > 0.10$, ICC = 7.49%), indicating that our findings are not conditioned by the different incubators included in our analyses and supporting the use of ordinary least squares (OLS).

Measures

Positive affect. We measured the positive affective trait using a scale extensively employed in entrepreneurship research (Baron and Tang, 2011; Rutherford and Holt, 2007), the Positive and Negative Affect Schedule (PANAS) (Watson et al., 1988), translated into Spanish by Sandín et al. (1999). This scale is consistent with the circumplex affect model and the varimax rotation of arousal and valence such that the positive and negative affect factors emerge as the differentiated axes that constitute this PANAS scale (Larsen et al., 2002; Watson et al., 1988). As noted, we focus on the positive affect dimension. Further, this PANAS scale can be used for different time frameworks: from the present moment to measure affective states to across time more generally to measure affective traits. In our study, we selected the 10 items measuring positive affect – interested, excited, strong, enthusiastic, proud, alert, inspired, determined, attentive and active. We measured affective traits by assessing general affect that is, how the respondents feel on average. Following Watson et al. (1988), we identified the categories of affect through a principal component analysis. The results showed a one-component solution via complementary criteria: eigenvalue, scree plot and interpretability. The variables we used for affective traits in our analyses were the factor scores of the principal component analysis (see Table 1). Internal reliability (i.e. Cronbach's alpha) was 0.76.

Table 1. Exploratory factor analyses of positive affect.

	Positive affect
Interested	0.741
Excited	0.557
Strong	0.677
Enthusiastic	0.720
Proud	0.298
Alert	0.409
Inspired	0.556
Determined	0.664
Attentive	0.405
Active	0.687
Eigenvalues	3.479
% of variance	34.792
Kaiser-Meyer-Olkin test of sampling adequacy	0.839
Bartlett's sphericity test	240.815
Df	45
Sig	0.000

Image of the opportunity. We measured the attributes of the image of the opportunity – environment, feasibility and desirability – by adapting Haynie et al.'s (2009) scale for the attributes of business opportunities. The respondents were asked to rate, on a 7-point scale, if (1) the market position for their opportunity was highly defensible; (2) their opportunity was strongly related to their existing knowledge, skills and abilities; and if (3) their opportunity exhibited the potential for considerable increases in efficiency and effectiveness. The scale demonstrated acceptable internal reliability (Cronbach alpha = 0.67). We also identified the image of the opportunity through a principal component analysis. The results showed a one-component solution via complementary criteria: eigenvalue, scree plot and interpretability. The variable we used for the image of the opportunity was the factor score of the principal component analysis (see Table 2).

Self-efficacy. We measured self-efficacy using the widely employed new general self-efficacy scale (NGSES) developed and validated by Chen et al. (2001). The respondents were required to rate the extent to which they agreed with eight statements on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree). Example items from the NGSES are 'When facing difficult tasks, I am certain that I will accomplish them' and 'Compared to other people, I can do most tasks very well'. Internal reliability was satisfactory (Cronbach alpha = 0.93). We also identified self-efficacy through a principal component analysis. The results showed a one-component solution via complementary criteria: eigenvalue, scree plot and interpretability. The variable we used for self-efficacy was the factor score of the principal component analysis (see Table 3).

Willingness to act. To capture a participant's willingness to act, we asked them to rate, on a 10-point scale, the extent to which 'This opportunity would allow me to quit/not search for new employment'. This item is similar to that previously used by Welpe et al. (2012).

Table 2. Exploratory factor analyses of the image of the opportunity scale.

	Image of the opportunity
The market position for the opportunity is highly defensible	0.854
The opportunity is highly related to the entrepreneur's existing knowledge, skills and abilities	0.713
This opportunity exhibits the potential for considerable increases in efficiency and effectiveness	0.771
Eigenvalue	1.833
% of variance	61.088
Kaiser-Meyer-Olkin test of sampling adequacy	0.614
Bartlett's sphericity test	
Approximated chi-squared distributions	62.008
Df	3
Sig	0.000

Table 3. Exploratory factor analyses of the self-efficacy scale.

	Self-efficacy
I will be able to achieve most of the goals that I have set for myself	0.808
When facing difficult tasks, I am certain that I will accomplish them	0.862
In general, I think that I can obtain outcomes that are important to me	0.818
I believe I can succeed at most any endeavour to which I set my mind	0.844
I will be able to successfully overcome many challenges	0.880
I am confident that I can perform effectively on many different tasks	0.743
Compared to other people, I can do most tasks very well	0.782
Even when things are tough, I can perform quite well	0.771
Eigenvalue	5.308
% of variance	66.348
Kaiser-Meyer-Olkin test of sampling adequacy	0.917
Bartlett's sphericity test	
Approximated chi-squared distributions	650.679
Df	28
Sig	0.000

Control variables. We included four control variables related to entrepreneur characteristics: age, gender, formal education and management experience. Age has been shown to relate to both entrepreneurial intention and behaviour (Morris and Venkatesh, 2000; Rauch and Hulsink, 2015). Gender (1 = male, 0 = female) has also been related to differences in evaluations of new business opportunities – namely, men are more likely than women to positively perceive opportunities (Gupta et al., 2013). Finally, level of formal education (1 = no formal education, 6 = Ph.D.) and years of management experience have been found to be important sources of human capital (Davidsson and Honig, 2003), skills and self-confidence (Delgado-García et al., 2012; Ucbasaran et al., 2008).

Table 4. Descriptive statistics and correlations matrix.

	M	SD	1	2	3	4	5	6	7	8
1. Positive affect	0	1	1							
2. Image of the opportunity	0	1	0.22*	1						
3. Self-efficacy	0	1	0.08	0.28**	1					
4. Age	26.48	7.45	0.05	-0.13	-0.02	1				
5. Gender	0.62	0.49	0.02	0.10	-0.02	-0.08	1			
6. Formal education	3.70	0.92	-0.02	0.27**	0.23*	-0.05	0.02	1		
7. Management experience	0.93	2.46	0.21*	0.06	0.18*	0.43**	-0.05	-0.09	1	
8. Willingness to act	7.02	2.33	0.08	0.38**	0.07	-0.02	0.31**	-0.04	0.06	1

† $p < 0.1$, * $p < 0.05$, ** $p < 0.01$.

Results

Table 4 presents the means, standard deviations and correlations of the variables. To test the hypotheses of the model proposed above, we used regression analyses (OLS). To test the mediation, we used Baron and Kenny's approach (1986) as well as the bootstrapping procedure provided by the SPSS macro programme PROCESS (Hayes, 2017). The results of these analyses are shown in Tables 5 and 6. The results for Model 3 (Table 5) fail to support Hypothesis 1, which suggests a direct and positive relationship between an entrepreneur's positive affect and the willingness to act entrepreneurially.

Hypothesis 2 proposes a positive relationship between positive affect and the image of the opportunity. The results for Model 1 (Table 5) show a significant and positive relationship between positive affect and the image of the opportunity ($B = 0.20$, $p < 0.05$). Thus, these results support Hypothesis 2.

Hypothesis 3 proposes a mediating effect of the image of the opportunity in the relationship between positive affect and the willingness to act entrepreneurially. According to Baron and Kenny (1986), three conditions must be met to establish mediation. First, the independent variable must influence the mediator. The results for Model 1 in Table 5 show a positive and significant relationship between positive affect and the image of the opportunity ($B = 0.20$, $p < 0.05$), thereby meeting the first condition and justifying further testing of a possible mediating effect.

Model 3 in Table 5 shows a non-significant effect for positive affect and the willingness to act entrepreneurially. Even if Baron and Kenny's (1986) second condition (i.e. there should be a relationship between the independent and the dependent variables) is not achieved, there can still be mediation. As MacKinnon et al. (2007) argue, non-achievement of the second condition can be explained as an effect of inconsistent mediation. Such inconsistent mediation occurs when the relationship between the independent and dependent variables is opposite in sign to the relationship between the independent and mediating variables, as well as opposite in sign to the relationship between the mediating and dependent variables. Model 4 shows a significant and positive coefficient for the mediating variable namely, the image of the opportunity ($B = 0.96$, $p < 0.01$), in its relationship with the willingness to act entrepreneurially. This significant effect meets Baron and Kenny's (1986) third condition that the mediator must influence the dependent variable. Moreover, the Sobel test is significant (Sobel test statistic = 2.016; p -value = 0.044), suggesting an indirect effect of positive affect on the willingness to act through the image of the opportunity. To test this indirect effect, we also used the bootstrapping procedure provided by the SPSS macro programme PROCESS (Hayes, 2017). This analysis (results shown in Table 6) indicates a significant positive indirect effect (standardised indirect effect = 0.0817; 95% confidence interval = 0.04, 0.176).

Table 5. Results of the mediation analysis.

	Model 1	Model 2	Model 3	Model 4
<i>Dependent variables</i>	Image of the opportunity	Image of the self	Willingness to act	Willingness to act
Independent variable				
Positive affect	0.20*	0.06	0.17	-0.02
Mediating variables				
Image of the opportunity				0.96**
Self-efficacy				0.01
Control variables				
Age	-0.03*	-0.02	-0.00	0.03
Gender	0.17	-0.05	1.47**	1.31**
Formal education	0.29*	0.26**	-0.12	-0.40†
Management experience	0.05	0.06	-0.01	-0.06
Number of observations	120	120	120	120
R ²	0.16	0.08	0.10	0.25
F	4.36**	1.99†	2.60*	5.19**

Standardised coefficients are shown.

† $p < 0.1$, * $p < 0.05$, ** $p < 0.01$.

Consistently, Hypothesis 4, which proposes that the image of the opportunity mediates the relationship between positive affect and the willingness to act entrepreneurially, is supported. The results for Model 2 show a non-significant relationship between positive affect and self-efficacy. Hypothesis 4, which proposes a positive and significant relationship between positive affect and self-efficacy is therefore, not supported.

Hypothesis 5 proposes a mediating effect of self-efficacy in the relationship between positive affect and the willingness to act entrepreneurially. Model 2 in Table 5 shows a non-significant relationship between positive affect and perceived self-efficacy. This non-significant relationship between the independent and the mediating variable does not meet Baron and Kenny's (1986) first condition for testing a possible mediation effect. Thus, these results fail to support Hypothesis 5, as is also reflected in the indirect effect results shown in Table 6.

Discussion

To date, opportunity evaluation has been approached as a cognitive exercise (Haynie et al., 2009) to discern the personal attractiveness – feasibility, desirability and environment – of opportunities (Mitchell and Shepherd, 2010) and whether this evaluation leads entrepreneurs to action. In the contemporary era, a limited number of studies have focused upon the role of affect and emotions in opportunity evaluation (Foo, 2011; Grichnik et al., 2010; Ivanova et al., 2018; Welpe et al., 2012). There is some evidence revealing the influence of affect, either on opportunity evaluation or on the willingness to act entrepreneurially. This has not explored, however, cognitive representations such as the images of the opportunity and of the self, underlying opportunity evaluation and how affect can influence both opportunity evaluation and the willingness to act entrepreneurially as related

Table 6. Indirect effect of positive affect on the willingness to Act entrepreneurially.

Dependent variable	Willingness to act			
	Coefficient	Boot standard error	Boot lower limit 95% CI	Boot upper limit 95% CI
Indirect effects				
Total	0.082	0.044	0.002	0.177
Mediating variables				
Image of the opportunity	0.082	0.044	0.004	0.176
Self-efficacy	0.000	0.010	-0.024	0.019

variables. Entrepreneurial action involves risk taking and uncertainty after the entrepreneur has assessed whether an opportunity is worthwhile (Brockhaus, 1980; McMullen and Shepherd, 2006). Opportunity evaluation is a cognitive process whereby entrepreneurs make the decision to take the risks related to new venture creation (Foo, 2011; Grichnik et al., 2010). Our research focuses on how a nascent entrepreneur's positive affect namely, the positive affective trait, influences opportunity evaluation and the subsequent willingness to act entrepreneurially, leading us to analyse two different routes between affect and the willingness to act.

The route linking positive affect and the willingness to act through the image of the opportunity – the affect-to-cognition-to-outcome route – reveals a significant relationship. First, positive affect positively influences opportunity evaluation in terms of perceived feasibility, desirability and environment (the image of the opportunity). This result is consistent with psychological arguments suggesting that positive affect broadens individual cognitive scope (Fredrickson, 2001) and arguments that positive affect activates available congruent positive information and generates more positive perceptions and expectations (affective congruency). More specifically, this result is consistent with previous experimental research in entrepreneurship suggesting that individuals with positive affect tend to evaluate opportunities more favourably than those who do not experience such affect (Baron et al., 2012; Grichnik et al., 2010; Ivanova et al., 2018). Second, consistent with Mitchell and Shepherd (2010), our results show that the image of the opportunity is positively related with a willingness to act. This suggests that nascent entrepreneurs rely on opportunity-specific attributes particularly, feasibility and desirability (Wood and Williams, 2014) but also the environment (Shepherd et al., 2007) to create the image of the opportunity and to evaluate their entrepreneurial opportunities (Fitzsimmons and Douglas, 2011; Mitchell and Shepherd, 2010).

Our evidence also reveals a non-significant relationship between positive affect and a willingness to act entrepreneurially. This may be explained by the opposite effects of positive affect on the willingness to act that occur through the indirect (affect-to-cognition-to-outcome) and direct (affect-to-affect-to-outcome) routes. Whereas the indirect route shows a positive influence of positive affect on the willingness to act through the image of the opportunity, the direct route suggests a negative impact of positive affect on this willingness to act. This opposite effect is consistent with Grichnik et al. (2010), who show that positive affect leads to positive opportunity evaluation, but based on affect maintenance theory (Isen and Patrick, 1983), they argue that positive affect also leads to lower willingness to allocate time and resources in a new venture.

Two alternative explanations regarding anticipated and anticipatory affective states may explain how the effects of positive affect on the willingness to act diverge between the two routes. First, according to Isen (2000) and her perspective on anticipated potential losses, probability and utility information have different impacts on risk-taking decisions (Isen, 2000; Mano, 1992), such as those

related to entrepreneurial action (McMullen and Shepherd, 2006). On one hand, based on the affect-to-affect-to-outcome route, positive affect increases the expected probability of success, leading individuals to be more venturesome (Lyubomirsky et al., 2005) and to take the risks associated with acting entrepreneurially (Brundin and Gustafsson, 2013). On the other hand, positive affect increases the negative utility, or the perceived danger, of potential losses⁵ (Isen, 2000; Mano, 1992). Moreover, research has suggested that individuals with positive affect prioritise information related to potential losses above information related to potential gains (Isen, 2000; Nygren et al., 1996). The stronger impact of utility information leads individuals with positive affect to take more risk-averse positions (Isen, 2000) and therefore, negatively influences the willingness to act entrepreneurially.

Second, the discrepancy between indirect and direct routes may be explained through the effect of anticipatory affective states; for example, visceral states such as anxiety or fear on risk-taking decisions (Loewenstein et al., 2001). As argued, unlike affective traits, affective states feed back into the opportunity evaluation process and may condition the appraisal of new cognitive representations (Lazarus, 1991). The intensity of the feedback of affective states conditions two different types of reactions to risk-related decisions (Loewenstein et al., 2001). If the intensity of the feedback of affective states is low, individuals may cognitively evaluate a risk relying on variables such as probability; for example, the expected probability of success of an opportunity or, probability information (Isen, 2000; Nygren et al., 1996). However, if the intensity is higher, they respond to factors such as the immediacy of the same risk, focusing on their affective states; for example, anxiety, through minimal cognitive processing (Loewenstein et al., 2001; Zajonc, 1980). These two types of reactions when individuals respond to risky situations point to a discrepancy between direct affective reactions to (affect-to-affect-to-outcome route) and cognitive evaluations of (affect-to-cognition-to-outcome route) the same risk (Loewenstein et al., 2001). These reactions could also help explain the discrepancy between the direct influence of an entrepreneur's positive affect on their willingness to act entrepreneurially and the indirect influence of their positive affect through cognitive evaluations of the opportunity and of themselves.

Both explanations regarding the anticipated and anticipatory effects, the opposite effects of positive affect on probability and utility and the different ways affective states interact with risks decisions, may counteract each other. This leads to the aforementioned inconsistent mediation and thus, to a non-significant effect for the affect-to-affect-to-outcome route. Yet, these explanations suggest that both affective traits and states may jointly influence the willingness to act entrepreneurially and help to understand the role of the phenomenon of an entrepreneur's subjective feelings, defined by Cardon et al. (2012) as entrepreneurial emotion, as a whole.

Regarding the influence of positive affect on the willingness to act on an entrepreneurial opportunity through self-efficacy, our results show a non-significant effect of positive affect on perceived self-efficacy. The findings also show that perceived self-efficacy does not have a mediating effect between positive affect and the willingness to act. This non-significant effect is inconsistent with arguments by Mitchell and Shepherd (2010), that when deciding to act on an opportunity, individuals combine the cognitive representation of their opportunity (the image of the opportunity) with the cognitive representation of themselves (the image of the self). This non-significant effect may be due to the influence of fear of failure on self-efficacy. Specifically, entrepreneurs with high self-efficacy and high fear of failure may feel that taking action might devalue their self-estimation and this reduces their willingness to act (Mitchell and Shepherd, 2011). Again, the tendency to avoid potential losses of pride and self-estimation and the effect of anticipatory affective states such as fear of failure, may condition the influence of perceived self-efficacy on the willingness to act. Additionally, entrepreneurial self-efficacy includes both goal and control beliefs. Whereas goal beliefs are related to an entrepreneur's perception of capabilities to

achieve goals, control beliefs are related to controlling positive and negative thoughts, thereby, preventing the escalation of cognitive biases (Drnovšek et al., 2010). Control beliefs may decrease the impact of goal beliefs in entrepreneurial action and therefore, reduce an individual's willingness to act entrepreneurially. Another explanation for this non-significant effect may relate to using nascent entrepreneurs as a sample subject. Although previous research has demonstrated the influence of self-efficacy on entrepreneurial intentions (Chen et al., 1998; Zhao et al., 2005), prior analyses have tended to focus on individuals at an earlier stage of the entrepreneurial process, usually university students. Therefore, self-efficacy may influence entrepreneurial intentions at earlier stages, but once individuals have taken some steps to start a new business, self-efficacy may not exert such an influence.

Limitations and future lines of research

We cannot conclude without considering limitations these need to be taken into account when interpreting the results and extending their generalisability. The main limitation relates to the average age and prior experience of our sample. Following previous research (Choi and Shepherd, 2004), we chose entrepreneurship training programmes in incubators because they generate the ideal atmosphere for opportunity evaluation as they are specifically designed for entrepreneurs to explore the attractiveness of their opportunities (Rice, 2002). As these incubator programmes are aimed to develop knowledge and competencies for business creation, most of their participants are young entrepreneurs. Previous research has found differences between experienced and non-experienced entrepreneurs when assessing their opportunities (Baron and Ensley, 2006), so future research could compare possible differences between novice and experienced entrepreneurs. Another limitation of our study relates to our focus on entrepreneurs as individuals. Previous research has pointed to an interaction between the cognition of entrepreneurs as individuals and their social context, which shapes entrepreneurial judgements and goals over time (Haynie et al., 2010; Schwarz, 1998). Future research may draw on this socially situated cognition argument (Cornelissen et al., 2012; Dew et al., 2015) to study the interaction between entrepreneur affect and their social context and how this influence may vary along the opportunity-evaluation process.

The results also suggest potential lines of future research. First, our study shows that positive affect positively influences the generation of the image of the opportunity. Given that the feasibility, desirability and environment of this image are the focal entrepreneur's perceptions, we do not know if the image of the opportunity reflects the real attributes of the opportunity and thus its real attractiveness. Future studies could explore whether positive affect generates a biased image of the opportunity, for instance, by comparing an entrepreneur's image of the opportunity with an independent opinion represented by an external assessment (Perry-Smith and Coff, 2011). Second, we found that the effect of affective states feeding back into the opportunity-evaluation process may create a discrepancy between entrepreneurs' direct affective reactions to and cognitive evaluations of opportunities and themselves. Future research may explore this effect by employing qualitative research methods based on interviews with open-ended questions (Molina-Azorín et al., 2012). Third, we focused on Watson and Tellegen's (1985) definition of positive affect, which is based on valence and activation dimensions. Future studies may differentiate high and low activated components of positive affect. For instance, future research could study how passion (i.e. positive and high activated components of affect) influences the cognitive representation of the opportunity and subsequent decision to act entrepreneurially. Finally, consistent with previous research on opportunity evaluation (Mitchell and Shepherd, 2010, 2011), we requested nascent entrepreneurs to

report their willingness to act on their opportunities. Future research may explore whether this willingness ultimately leads nascent entrepreneurs to exploit their opportunities.

Conclusions

This article offers several contributions to the entrepreneurship literature. First, we extend previous research that explores the effects of positive affect and emotions on opportunity evaluation and the willingness to act by considering all of them as related variables. We also contribute to the limited research focusing on the cognitive mechanisms underlying opportunity evaluation (Mitchell and Shepherd, 2010; Wood and McKelvie, 2015). In particular, we focus on how the image of the opportunity developed by an entrepreneur, together with his or her image of the self, contributes to a willingness to act on the opportunity. Our evidence shows that the image of the opportunity operates as an intermediate cognitive mechanism between an entrepreneur's positive affect and a willingness to act on opportunities. This study also has implications regarding the individual-opportunity nexus as it shows that opportunity attributes, such as feasibility, are subjectively evaluated and influenced by individual affect. We also extend previous literature by focusing on a sample of nascent entrepreneurs evaluating their own opportunities rather than employing an experimental approach.

We employed a field study for several reasons. First, psychology research has indicated that the influence of affect on cognition and behaviour is particularly relevant when a situation requires substantive processing, and the latter is more likely when the information is relevant to the focal individual (Fiedler 1990; Forgas 1995). Second, our study aims to take into account this relevant information in a real situation by asking individuals to evaluate their opportunities rather than a theoretical case for which the potential losses of a decision do not have personal consequences. Third, we extend previous literature that largely focused on affective states (Grichnik et al., 2010; Welpe et al., 2012) by incorporating the affective traits perspective. This has received limited attention to date (Foo, 2011). Our focus on affective traits is more consistent with the generation of positive enduring outcomes, such as the willingness to act entrepreneurially. Focusing on affective traits may also help researchers avoid some incorrect interpretations regarding the measurement of states and avoid reverse causality when studying an entrepreneur's evaluation process as they assess opportunities they are actually developing.

Turning to the practical implications of our research, entrepreneurs should be aware that their decisions to act on their opportunities come from a subjective view influenced by affect. Even if an opportunity's feasibility, desirability and environment seem to be attributes that can be objectively assessed, their evaluation is the result of subjective processes influenced by an entrepreneur's affective traits. Once entrepreneurs identify the affective subjectivity of their assessments, they are more likely to search for external advice, for example, from experts, colleagues, incubators, to help them objectively assess their opportunities and lead them to more successful outcomes. Such external advice can also be improved by developing a better understanding of the influence of affect on opportunity evaluation enriching business guidance with training on emotional intelligence (Ngah and Salleh, 2015; Shepherd, 2004) and its corresponding dimensions, namely appraisals of one's own and the affect of others, as well as the regulation and use of affect (Wong and Law, 2002).

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Notes

1. This ‘personal’ adjective that accompanies opportunity evaluation refers to an entrepreneur engaging in a first-person assessment of an opportunity. Following Haynie et al. (2009), our study refers to opportunity evaluation as a first-person – rather than a third-person – assessment.
2. According to Russell’s (2003) definition, mood can be considered a prolonged form of core affect with no object.
3. Although Fredrickson’s seminal study of 1998, in which she formulates the broaden-and-build theory, refers to positive emotions, in her research from 2001, she develops this theoretical model further and refers to both positive emotions and affect: namely, since ‘positive emotions include a component of positive affect, they too function as internal signals to approach or continue’ (Fredrickson, 2001: 219).
4. Passion has content related to ‘intense positive emotion’ and includes different highly activated positive states, such as joy and excitement (Cardon et al., 2009; Cardon et al., 2013).
5. As indicated by Mano (1992) and Isen (2000), the utility of a decision is equal to the probability of the positive outcome multiplied by the utility of that outcome plus the probability of the negative outcome (losing) multiplied by the negative utility (disutility) of that negative outcome (Edwards, 1961). Thus, positive affect increases the negative utility of a potential loss, thus, reducing risk-taking propensity (Isen, 2000).

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