



# The role of affect in international opportunity recognition and the formation of international opportunity beliefs

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## Abstract

Despite the significance of individual factors in how entrepreneurs recognize international opportunities either by active search or passive discovery, prior research has typically focused on cognitive aspects overlooking affect as a critical driver of this process. Drawing upon broaden-and-build and affect-as-information theories, we explore how courage, hope, fear of failure, and anticipated regret, as stable affective dispositions, can influence entrepreneurs' active and passive international opportunity recognition (IOR). Also, based on the mental model theory, we examine whether both processes can lead entrepreneurs to differently form opportunity desirability and feasibility beliefs to judge the opportunities recognized in the foreign market. Based on data from a sample of 172 international entrepreneurs, we find that hope and anticipated regret are positively related to active IOR. Hope and courage are positively related to passive IOR, and fear of failure and anticipated regret are negatively related to passive IOR. Moreover, active IOR better informs opportunity desirability and feasibility beliefs than passive IOR, which indeed only predicts feasibility. These findings are original and novel and thus add value to the flourishing literature on the individual-level factors that influence IOR processes and the emerging literature on how international opportunity desirability and feasibility beliefs are formed to evaluate IOs.

**Keywords** International opportunity recognition · International opportunity evaluation · Dispositional affect · International opportunity beliefs · International entrepreneurs

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## 1 Introduction

International opportunity recognition (IOR), defined as “the way an entrepreneur discovers the opportunity to exchange products and services with a new or existing partner in a new international market” (Angelsberger et al. 2017, p. 25), represents the cornerstone of international entrepreneurship (IE) process (Chandra et al. 2009; Tabares et al. 2021). From the entrepreneur’s perspective, the IE process begins with the emergence of an international opportunity (IO) either by active or passive search. Active IOR claims for the discovery of IOs through a systematic, purposeful, rational, and deliberate search process (Ciravegna et al. 2014b; Chetty et al. 2018), while passive IOR states that IOs are found in moments of insight through serendipitous encounters or fortuitous discoveries (Zaefarian et al. 2016; Kiss et al. 2020).

Although the difference between these two approaches is widely promulgated in the literature, four aspects restrict its understanding and development. First, recent review studies (Filser et al. 2020; Terán-Yépez et al. 2021) state that IOR research is limited and that more research is needed to understand which factors determine both active and passive IOR. Second, most of the studies that address this issue are conceptual (cf. Angelsberger et al. 2017). Thus, its understanding is limited mainly to theoretical assumptions. Third, most of the scarce empirical investigations that address IOR approaches are qualitative (e.g., Galan and Torsein 2021; Tuomisalo 2019; Zaefarian et al. 2016) rather than quantitative. Therefore, these results are limited to a relatively small sample of cases. Fourth, some empirical studies (e.g., Lorenz et al. 2018) have examined IOR as an overall construct neglecting the distinction between purposeful search and serendipitous discovery. These four aspects can lead to premature and incorrect conclusions about this phenomenon and can be obscuring important considerations that make us far from understanding (1) What drives international entrepreneurs to recognize IOs either by active or passive search and (2) How these two approaches determine the next stages of the IE process (e.g., IO evaluation). Indeed, both questions have recently been proposed as key objectives of IE research (Di Gregorio et al. 2021).

Focusing on the first question, the few empirical studies that address this issue have mainly explored international experience (Hilmersson and Papaioannou 2015), international orientation (Chandra et al. 2009), and international knowledge (Kraus et al. 2017) as individual factors conditioning whether the discovery of IOs is either through purposeful search or serendipitous discovery. Although these features provide a crucial understanding of the IOR process, the general state of knowledge on IOR could benefit from pinpointing further internal factors that elucidate the IOR perspectives. In this study, we propose that affect is relevant for explaining the IOR perspectives. This idea is based on recent studies which suggest that examining the IE process focusing on cognitive processes in isolation of affective processes could lead to an incomplete understanding of international entrepreneurs’ minds (Muzychenko and Liesch 2015; Kuratko et al. 2020). Indeed, the literature argues that IE is an emotional journey (Benevolo et al. 2021) and that international entrepreneurs’

cognitive and behavioral processes vary depending on their affective processes (Glavas et al. 2017; Korhonen and Leppäaho 2019). For example, previous findings show that affect-related traits can influence international decision-making process (Basly and Saunier 2020), international entrepreneurial orientation (Muzychenko and Liesch 2015), and international opportunity evaluation (IOE) (Chandra 2017). However, although it has been suggested that affect may influence the diverse stages of the IE process, empirical research on the role of positive and negative affect in IE and, specifically, in IOR is still anecdotal (Riquelme and Alqallaf 2020; Terán-Yépez et al. 2021). As such, in this paper, we take IOR research one step further and examine whether the affect experienced persistently over time by entrepreneurs (i.e., dispositional affect) plays a role in determining whether an IO is identified actively or passively. This type of affect refers to an individuals' stable tendency to experience specific positive and negative emotions and feelings across time (Watson and Clark 1984).

At this point, even though it could be assumed that affective factors may impact an entrepreneur regardless of the domestic or international nature of the opportunity recognition, we believe it is relevant to provide arguments on what is different in the international context compared to the domestic context concerning the role of affect. In this regard, scholars have argued that IOR is a more complex process in which affect may play an even more relevant role than in domestic OR (Dillon et al. 2020; Terán-Yépez et al. 2021), as operating in environments characterized by change (e.g., international markets) brings out the use of affect in behavior, judgment, and decision making (Muzychenko and Liesch 2015). Compared to the domestic market, the international market tends to generate situations of greater ambiguity, uncertainty, and perceived risk for entrepreneurs, mainly due to its dynamism and constant evolution (Muzychenko and Liesch 2015; Filser et al. 2020). Adding to the less information available and known by entrepreneurs about international markets compared to their local environment, the aspects mentioned above may make entrepreneurs even more driven by their affect (Glavas et al. 2017). Indeed, affect has been suggested as a valuable source of information for international entrepreneurs as it may influence the decision to pursue international activity (Dillon et al. 2020). Moreover, the IE literature suggests that positive dispositional affect may help entrepreneurs manage the risks and uncertainty of the international environment (Muzychenko and Liesch 2015; Benevolo et al. 2021), while on the contrary, negative dispositional affect may imply viewing the international market with more uncertainty and less confidence (Alon et al. 2013; Dong and Muzychenko 2018).

We continue our rationale by highlighting that the role of affect in the domestic context cannot be simply extended to the international context, as there is preliminary evidence that suggests that affect can impact on the entrepreneur's mind differently depending on whether the entrepreneur operates in a national or international context (Alon et al. 2013; Dong and Muzychenko 2018). This argument seems to be in line with recent research (e.g., Jafari-Sadeghi et al. 2021) that shows that it is relevant to investigate the effect of individual-level factors in both domestic and international entrepreneurship to enrich the differences that exist between both contexts. In the same vein, we argue that while the role of affect on domestic opportunity recognition has been widely addressed (e.g., Baron 2008;

Hayton and Cholakova 2012), the role of affect in IOR has yet to be investigated more thoroughly. In particular, the question remains as to how positive and negative dispositional affect can impact on IOR.

Focusing on the second question, the literature argues that afterward identifying an IO, the IE process continues with a series of actions to evaluate the opportunity, including determining whether it is desirable and feasible enough to pay more attention (Nowiński and Rialp 2016; Bolzani and Boari 2018). As such, not all opportunities identified in the international market are able to survive the evaluation process (Oyson and Whittaker 2015; Tabares et al. 2021). Although IOR and IOE are two intertwined and interdependent processes, they have been studied as single, separate processes (Tabares et al. 2021; Di Gregorio et al. 2021). This research gap is remarkable since little is known about how each IOR perspective might impact entrepreneurs' IOE. Thus, going deeper with our assumptions, we seek to understand how international entrepreneurs develop opportunity desirability and feasibility beliefs of an IO (that could jeopardize or favor its exploitation) by examining to what extent an active or passive IOR conditions their formation. Previous research argues that such evaluation involves intense perceptual and interpretative processes about the information of the recognized IO and the willingness to pursue such IO (Williams and Wood 2015; Bolzani et al. 2021). Therefore, bearing in mind that identifying an IO in one way or another entails great differences in the acquisition of information (De Clercq et al. 2012; Kraus et al. 2017) and the intentionality to recognize them (Tabares et al. 2021), we claim that the mind of an international entrepreneur could evaluate an IO differently depending on the way s/he has recognized it.

In summary, the research questions (RQ) to be answered are therefore:

**RQ1** What is the role of positive and negative dispositional affect as an antecedent of active and passive IOR?

**RQ2** To what extent active and passive IOR can predict opportunity desirability and feasibility beliefs?

For answering RQ1, we build on the two most promising theoretical approaches on how affect influence the entrepreneurial process, that is, broaden-and-build (Fredrickson 2004) and affect-as-information (Clore et al. 2001a) perspectives, to argue that courage, hope, anticipated regret, and fear of failure, as stable affective dispositions, play a significant role in shaping the way an entrepreneur identifies IOs. To answer RQ2, we examine the extent to which active and passive IOR can predict opportunity desirability and feasibility beliefs based on the mental model theory (Johnson-Laird 1983).

Addressing these research questions, our study provides two main contributions to research. First, we contribute to the emerging literature on the individual-level factors that influence IOR processes (e.g., Hilmersson and Papaioannou 2015; Kraus et al. 2017; Terán-Yépez et al. 2021) by providing the first study of how positive and negative stable affective dispositions impact the IOR process,

showing their influence over purposeful search and serendipitous encounters of IOs. Theoretically, it helps to understand affect implications for IE and provide valuable insights for international entrepreneurs (e.g., Glavas et al. 2017; Dillon et al. 2020). Second, we also contribute to the emerging literature into how international opportunity desirability and feasibility beliefs are formed to evaluate IOs (e.g., Nowiński and Rialp 2016; Bolzani and Boari 2018; Bolzani et al. 2021) by providing evidence into how these beliefs are distinctively formed depending if the IO was actively or passively recognized. Thus, we also advance the IE literature by enriching the link between IOR and IOE as two intertwined and interdependent processes (e.g., Tabares et al. 2021; Di Gregorio et al. 2021). We provide a consistent theoretical framework and empirically test this relationship to frame these processes from a cognitive-affective perspective. Therefore, we offer a better understanding of how the international entrepreneurial mindset works, more specifically, how international entrepreneurs seek and make sense of new IOs and when this is most likely to occur.

## 2 Conceptual foundations

### 2.1 IOR perspectives

When analyzing IOR, the literature establishes two perspectives on how entrepreneurs recognize IOs: active search and passive discovery. In active IOR, entrepreneurs rationally and proactively search for and gather information to recognize IOs (Chetty et al. 2018; Tuomisalo 2019). The search initiative derives from the international entrepreneur's own decision (Zaefarian et al. 2016). Typical actions for this type of IOR are conducting export market research (Ciravegna et al. 2014b) or seeking to address international customers' unmet needs or unresolved problems (Harms et al. 2009; Tuomisalo 2019). Typically, entrepreneurs who carry out an active search for IOR are looking for a missing piece of information, and therefore are usually clear about the data s/he is searching for (Chandra et al. 2009).

Conversely, in passive IOR, IOs are recognized through serendipitous encounters, also called fortuitous or accidental discoveries (Kiss et al. 2020; Hilmersson et al. 2021). Although these IOs are identified without any planned search, they are not pure luck (Chandra et al. 2009; Galan and Torsein 2021); entrepreneurial alertness, intuition, and acumen act as critical enablers (Chandra et al. 2009; Kraus et al. 2017). Examples of this type of discovery include identifying IOs by reading newspapers, unexpected conversations, or during holidays (Ciravegna et al. 2014a; Zaefarian et al. 2016). Thus, in passive IOR, there are no specific market problems to solve, and there is no purposeful information seeking; hence intentions to find an IO are low (Chetty et al. 2018).

At this point, although we do not deny the possibility that active and passive IOR can occur simultaneously, we align with previous theoretical and empirical investigations (cf. Tabares et al. 2021) that argue there is a predisposition towards one or the other. Such predisposition is exhibited through a greater or lesser degree of activeness (or passiveness) for the identification of an IO (Ciravegna et al. 2014b).

Previous evidence also suggests that some individual factors lead to this predisposition (cf. Hilmersson and Papaioannou 2015; Kraus et al. 2017), and that identifying an IO through one mechanism or the other leads to differences in exploitation and firm performance (cf. De Clercq et al. 2012; Ciravegna et al. 2014b). Therefore, what is suggested in this study is that entrepreneurs will tend to identify IOs in one way or another based on affective aspects and, depending on the IOR mechanism, they will evaluate the IOs differently.

## 2.2 Dispositional affect

Affect can be defined over different time frames. Affect experienced over time is referred to as dispositional (trait) affect, while affect experienced in a specific moment is referred to as state (event-generated) affect (Watson and Clark 1984). While previous literature on entrepreneurship has identified evidence that, in general, both dispositional and state affect produce similar effects (Baron 2008; Baron et al. 2011), scholars suggest that because each stage of the entrepreneurial process spreads over extended periods of time, dispositional affect may be more directly relevant for entrepreneurship literature (Baron et al. 2011; Bernoster et al. 2020). Indeed, recent studies have proposed that dispositional affect is a key component in understanding the entrepreneurial mindset, in the sense that it is often dispositional affect that can drive it (Kuratko et al. 2020; Pidduck et al. 2021). In this study, we adopt a personological orientation (rather than motivational orientation), that is, we focus on dispositional affect (Cacciotti and Hayton 2015; Bernoster et al. 2020), which is defined as an individual's stable and underlying propensity to experience particular positive and negative emotions and feelings across many situations (Watson and Clark 1984). Particularly, we focus on examining courage and hope as positive affective dispositions and anticipated regret and fear of failure as negative affective dispositions, mainly based on two reasons. First, these affective dispositions have been suggested as commonly experienced by entrepreneurs (Cacciotti and Hayton 2015; Ebert et al. 2019; Benevolo et al. 2021). Second, they have been proposed as having relatively high effects on the IE context (Alon et al. 2013; Dong and Muzychenko 2018; Riquelme and Alqallaf 2020). Table 1 summarizes what has been previously studied on each of these four stable affective dispositions and includes also two relevant studies on the role of affect in general in IE. It is worth noting that the literature review reflected in Table 1 allows us to corroborate that there is a research gap in that the role of positive and negative stable affective dispositions may be relevant to understanding why some international entrepreneurs actively identify IOs while others do so passively.

## 2.3 Desirability and feasibility beliefs in the IOE phase

Afterward recognizing an IO, the IE process continues with various actions to evaluate it in entrepreneurs' minds (Harms et al. 2009; Chandra 2017; Bolzani and Boari 2018). We know that for the evaluation, entrepreneurs adopt a future-oriented posture in which they think about what will happen if they exploit the

**Table 1** Publications on the role of fear of failure, anticipated regret, courage, and hope on entrepreneurship and IE

Author/s (year)	Type of article (Sample)	IE or entrepreneurship stage	Purpose/Approach	Theory/ies or Framework	Findings/Proposals/Conclusions	Suggestions for future research
<i>Affect in general in international entrepreneurship</i>						
Dillon et al. (2020)	Conceptual	IO recognition	Examine the role of affect in the nascent service internationalization literature Affect as a valuable source of information for international entrepreneurs Few studies have examined individual-level processes, such as affect in the IE domain	Emotion regulation Theory	IOR is influenced by affect The choice of emotion regulation strategy may influence the type of new ideas and opportunities pursued by international entrepreneurs	Future studies should aim to empirically examine the propositions as proposed

**Table 1** (continued)

Author/s (year)	Type of article (Sample)	IE or entrepreneurship stage	Purpose/Approach	Theory/ies or Framework work	Findings/Proposals/Conclusions	Suggestions for future research
Glavas et al. (2017)	Empirical -Qualitative (18 international entrepreneurs)	IE in general	Insight into the role of positive and negative emotions and how they influence international entrepreneurial behavior Affect may influence the decision to pursue international activity yet affect' influence in IE research has primarily been neglected Few empirical studies provide insight into the role of affect in IE	Cognitive appraisal Theory and Emotional regulation Theory	Emotional experience of international entrepreneurs is multi-dimensional	Greater theoretical and empirical research is required to appropriately detail and develop the affect implications in IE Studying both positive and negative emotions can provide valuable insights for international entrepreneurs
<i>Fear of failure (FF)</i> Alon and Lerner (2008)	Empirical—Quantitative (428 Chinese entrepreneurs)	IO recognition	Test how the characteristics of the entrepreneur are associated with entrepreneurial firms' export expectations FF would prevent people from starting an international business	Entrepreneurial proclivity	An entrepreneur's FF will decrease the likelihood of exporting	The study of individual entrepreneurs may yield interesting insight into their process of going global



**Table 1** (continued)

Author/s (year)	Type of article (Sample)	IE or entrepreneurship stage	Purpose/Approach	Theory/ies or Framework work	Findings/Proposals/Conclusions	Suggestions for future research
Alon et al. (2013)	Empirical—Quantitative (1595 Chinese entrepreneurs)	IO recognition	Explain the export behavior of Chinese entrepreneurial firms FF may be one of the obstacles to expanding overseas	Entrepreneurial proclivity	FF decreases the likelihood of entrepreneurs to internationalize	Examine whether context specific influences in other countries alter the relationships between individual variables (e.g., fear of failure) and the internationalization process
Dong and Muzychenko (2018)	Conceptual	IO evaluation	Theorize about FF in IE FF may affect the exporting behavior of SMEs The findings about the role of FF in the entrepreneurship context cannot be simply extended to the international entrepreneurship context	No theory	FF affects IO evaluation	Explore how FF affects entrepreneurs at different internationalization stages

**Table 1** (continued)

Author/s (year)	Type of article (Sample)	IE or entrepreneurship stage	Purpose/Approach	Theory/ies or Framework work	Findings/Proposals/Conclusions	Suggestions for future research
Giotopoulos and Vettas (2018)	Empirical—Quantitative (912 Greek early-stage entrepreneurs)	IE in general	Explore the antecedents of export-oriented entrepreneurship FF is a factor that is likely to affect the export-driven entrepreneurship	No theory	FF seems to have a positive effect on international entrepreneurship FF facilitates the export intensity	—
<i>Anticipated regret (AR)</i>						
Bouderbala (2019)	Empirical—Quantitative (266 Tunisian university students)	Entrepreneurial intention	Identify the role of AR in forming students' entrepreneurial intentions	Theory of planned behavior	AR has a direct and positive influence on entrepreneurial intention Entrepreneurial training increases AR	Relatively little is known about the role of anticipatory regret in the initial phases of entrepreneurship Better understand the genesis of AR and its impact on the different stages of the entrepreneurial journey

**Table 1** (continued)

Author/s (year)	Type of article (Sample)	IE or entrepreneurship stage	Purpose/Approach	Theory/ies or Framework work	Findings/Proposals/Conclusions	Suggestions for future research
Hatak and Snellman (2017)	Empirical—Quantitative (234 Finnish latent entrepreneurs)	Entrepreneurial gestation	Offer an initial investigation to develop the emotional underpinning of early-stage entrepreneurship Anticipatory negative affect can arise among latent entrepreneurs AR plays a significant role in converting important plans into subsequent actions AR can act as a behavioral push towards engaging in business gestation activities	Regret regulation theory	AR as a feeling for doing, by pushing latent entrepreneurs towards engaging in business start-up behavior AR may stimulate entrepreneurs toward undertaking various detail-oriented research activities as opposed to rushing in and acting on their gut feelings	Further nuanced research that examines how and to what effect AR impact throughout the different phases of the entrepreneurial process would be welcome Study the relationship (AR—nascent entrepreneurial activity) in other contexts would be required to better understand the interplay of AR, cognition and behavior in the broader entrepreneurship context

**Table 1** (continued)

Author/s (year)	Type of article (Sample)	IE or entrepreneurship stage	Purpose/Approach	Theory/ies or Framework	Findings/Proposals/Conclusions	Suggestions for future research
Neneh (2019)	Empirical—Quantitative (227 South African university students)	Entrepreneurial behavior	The study aims to determine whether or not AR is instrumental in translating entrepreneurial intentions to actual business start-up activities AR is often seen as a key motivation for action	Regret regulation theory	AR acts as a behavioral push that forces students with high levels of entrepreneurial intentions to act fast on their intentions as they highly recognize entrepreneurial inaction as regrettable AR encourages and motivates students to engage in business gestation activities	Examine the role of AR in other contexts Exploit the role of AR in other stages of the entrepreneurial process
<i>Courage (COU)</i> Bockorny and Youssef-Morgan (2019)	Empirical—Quantitative (152 US Mid-west entrepreneurs)	Entrepreneurship in general	Entrepreneurs' courage is positively related to their psychological capital Entrepreneurs' courage is positively related to their life satisfaction The first study to investigate courage empirically in the context of entrepreneurship	No theory	Courage promotes a positive and thoughtful approach to entrepreneurship that leads to life satisfaction	--

Table 1 (continued)

Author/s (year)	Type of article (Sample)	IE or entrepreneurship stage	Purpose/Approach	Theory/ies or Framework work	Findings/Proposals/Conclusions	Suggestions for future research
Ebert et al. (2019)	Empirical—Quantitative (390,341 respondents from 283 US metropolitan regions)	Entrepreneurial intention and entrepreneurial survival	Examine the impact that regional courage has on entrepreneurial activity and entrepreneurial survival	No theory	Courage is positively related to entrepreneurial activity, but negatively related to entrepreneurial survival	—
<i>Hope (HOP)</i>						
Fatma et al. (2021)	Empirical -Qualitative (32 Tunisian entrepreneurs)	Business venture success	Hope can lead an individual to engage in risky decisions, events or projects. Hope can positively affect new venture success	Security, potential and aspiration level (SPA) Theory	Hope has great impact on new venture launched by female entrepreneurs compared to male entrepreneurs	Future research should look more closely into the effect of managerial psychology on small firms Explore how entrepreneurial psychology and affect can influence venture success
Li (2011)	Empirical—Quantitative (217 Chinese students)	New venture judgment	In terms of affect, the impetus to create a new venture is likely to be represented in terms of how people hope to start up a new venture	No theory	Entrepreneur's hope of creating a successful new venture significantly increases the attractiveness and perceived success likelihood of the new venture	—

IO they are evaluating (Ivanova et al. 2018; Bolzani et al. 2021). This evaluation mainly considers entrepreneurs' feasibility and desirability beliefs judging if those identified IOs constitute an attractive action path (Williams and Wood 2015; Bolzani et al. 2021). Feasibility is referred as the belief that exploiting an IO is viable with the resources that the international entrepreneur possesses (Nowiński and Rialp 2016). Hence, it constitutes a mental "comparison" between the resources (e.g., means, capabilities, skills, and information) that an international entrepreneur possesses with the required resources he/she requires to exploit the IO (Bolzani and Boari 2018). The closer this comparison is, the more viable the IO will be perceived (Ivanova et al. 2018). On the other hand, desirability could be understood as the belief that successfully exploiting an IO would fulfill the international entrepreneur's goals, desires, and needs (Nowiński and Rialp 2016). This belief is based on the international entrepreneur's judgment about the objective or reward of exploiting an IO (Bolzani et al. 2021).

### 3 Theoretical framework

#### 3.1 Broaden-and-build and affect-as-information theories

We rely on broaden-and-build (Fredrickson 2004) and affect-as-information (Clore et al. 2001a) theories to address how positive and negative affect influence IOR perspectives. The broaden-and-build theory, argues that positive affect helps activate and broaden the scope of attention and the repertoire of possible actions, while negative affect reduces the scope of attention (Fredrickson 2004). This theory also claims that positive (negative) affect fosters (hinders) more exploratory thoughts and engenders (prevents) creative fluency and flexibility (Fredrickson and Branigan 2005). This fluency and flexibility allow people to easily perceive connections between ideas and link them (Isen 2008). With reference exclusively to positive affect, this theory postulates that it helps individuals maintain a sense of control over challenges, which encourages people to focus on new opportunities and possibilities rather than limitations (Fredrickson 2001; Lam et al. 2014).

The affect-as-information theory establishes that individuals behave based on the information they receive when implicitly asking themselves how they feel (Clore et al. 2001a). Positive affect serves as a signal that individuals are on the right track (that things are going well) (Clore et al. 2001b). As a result, positive affect pushes people towards proactive behaviors as it fosters a vision of the future (Foo et al. 2009), but at the same time, it indicates to the individuals that such proactivity may be moderated as they may feel that things are generally going well (Schwarz and Clore 1996). Meanwhile, negative affect serves as feedback that something is wrong and requires more effort in the form of time and personal attention (Clore et al. 2001b). Thus, negative affect signals the need for more focused and deliberate information processing to overcome that negativity (Schwarz and Clore 1983; Emich and Lu 2021).

### 3.2 Mental model theory

To explain how each IOR perspective may lead to differently form international opportunity desirability and feasibility beliefs to judge the opportunities recognized in the foreign market, we draw on the mental model theory (Johnson-Laird 1983). This theory has been widely utilized to explain how people form beliefs and make assessments. Its basic premise is that as individuals process information, they form mental models to predict and evaluate future situations (Johnson-Laird 1983; Gentner and Stevens 2014). These mental models are formed as individuals interpret and internalize new information (Johnson-Laird 1983) and are molded depending on “the degree to which situation characteristics are related to the goals, motives, and needs of the perceiver” (Wood et al. 2014, p. 255).

### 3.3 An integrative framework

To carry out the theorization of our study and contribute to the IE field’s theory development, we propose a combined approach between the two affective theories and the cognitive theory presented in the previous sections.

Although broaden-and-build and affect-as-information theories overlap a great deal, their integration through their mutual exclusivities has been found relevant to explaining applied psychology aspects in business and management settings (e.g., Lam et al. 2014; Emich and Lu 2021). These theories suggest that positive affect may lead individuals to exhibit greater action tendency (proactive behaviors) and increased use of higher-level processing. However, only the broaden-and-build theory concurrently argues that positive affect broadens the scope of attention (alertness, awareness and intuition) and the repertoire of possible actions, which fosters the fluency and flexibility necessary to see beyond that of proactive behavior alone. Alternatively, the affect-as-information theory suggests that even if both positive and negative affect drives the individual toward proactive attitudes, positive affect can also lead to moderate such proactive effort. This theory also postulates that negative affect signals to individuals that only proactive behavior can lead them to cope with the negativity they feel.

Based on these premises, it can be suggested that, in our context, positive affect could encourage IOR processes. We theorize that as positive affect signals individuals that things are going well and encourage them to focus on new opportunities and possibilities, may both facilitate entrepreneurs to engage in proactive and deliberate behaviors and increase the scope of attention to see what was hitherto not suspected to exist at all. The relationship between negative affect and the IOR approaches may be explained by two underlying processes. On the one hand, we suggest that negative affect would serve as a warning sign that current progress is below the expectations and may lead entrepreneurs to increase their effort level in IOR activities. That is, negative affect increases the intensity to act. On the other hand, we argue that negative affect, by reducing the scope of attention and

hindering the most exploratory thoughts, creative fluency, and flexibility inhibits the entrepreneurs' alertness, intuition, and acumen, necessary for IOR.

Considering that international entrepreneurial theoretical frameworks that ignore the significant connection between affect and cognition will inevitably be poorly specified (Muzychenko and Liesch 2015; Kuratko et al. 2020), we propose that the mental model theory can complement the above affective theories to explain the general framework of this study focused on pre-international-entrepreneurial phases, that is, IOR and IOE. The IE literature reveals that both phases are interrelated processes that are based on different mechanisms (Di Gregorio et al. 2021). We conceptualize these processes within a cognitive-affective framework, in which IOs are first actively or passively recognized guided by positive or negative stable affective dispositions. After recognizing a new IO, entrepreneurs evaluate the feasibility and desirability of exploiting the identified IO through cognitive mechanisms (Wood et al. 2014). Indeed, mental model theory suggests that, from their cognitive models, entrepreneurs form mental images of the IO that depend on the relationship between the recognized IO and the entrepreneur's goals, desires, and willingness of having pursue the IO (Williams and Wood 2015; Haaja 2020; Bolzani et al. 2021). As self-centered mental images, beliefs of IO feasibility and desirability and their formation will then vary depending on the entrepreneurs' intention and willingness related to the search of the IO. An active search demonstrates a willingness to pursue an IO, and literature suggests that more willingness leads to more desirability and feasibility to exploit an IO (Wood et al. 2014). As such, since international entrepreneurs who passively identified an IO had neither the willingness nor the intention to recognize it, their mental images about the desirability and feasibility are likely to be more conservative and opaque than those who identified the IO through an active search.

## 4 Hypotheses development

### 4.1 Dispositional affect as an antecedent of the IOR perspectives

Next, we discuss how courage and hope as positive affective dispositions, and anticipated regret and fear of failure as negative affective dispositions can predict active and passive IOR.

Although there is not a commonly agreed definition for courage in psychology, in this study we follow the conceptualization that courage has received in entrepreneurship. That is, courage is seen as a trait affect that promotes persistence and the ability to act despite fear, even when faced with opposition (Brockmeyer and Youssef-Morgan 2019; Ebert et al. 2019). Empirical evidence that relates courage to sensation-seeking (Muris 2009) and predisposition to take risks (Howard and Alipour 2014) suggest that courageous individuals seem to have a wide sort of characteristics that favor international entrepreneurial behavior, as international entrepreneurs must have the courage to face the challenges that the international environment brings (Bartlett and Ghoshal 2000; Haaja 2020). In general, courageous international entrepreneurs are likely to be more confident, and therefore they are open to embrace



uncertainty and try new things (Haaja 2020). Indeed, Ebert et al. (2019) demonstrate that there is a greater entrepreneurial activity in regions where people have high levels of courage. Thus, we argue that courage may favor both active and passive IOR. On the one hand, courage has been addressed as an important push for proactive involvement in entrepreneurial gestation activities as courageous entrepreneurs usually have a “can do” and “will do” attitude (Bockorny and Youssef-Morgan 2019). Therefore, courage may push international entrepreneurs to pursue IOs intentionally. On the other hand, courage acts as an enhancer to conquer unknown territory (Koellinger 2008), as it provides individuals a broader scope of attention and repertoires of thought (Fredrickson and Branigan 2005) and thus increases international entrepreneurial alertness and intuition. This will make them not only retrieve stored information but be more open to perceiving new information in passive search situations. According to this discussion, we hypothesize that:

**H1** Courage is positively related to (a) active and (b) passive IOR.

Hope, as a dispositional affect, is the constant feeling that events will turn out for the best and that alternative routes can be found to achieve these goals (Snyder et al. 1991, 2002). Hopeful individuals have a higher probability of participating in the entrepreneurial process, starting a new venture, and building a successful business (Li 2011; Fatma et al. 2021). Consistent with the broaden-and-build theory, the literature postulates that hope acts as a factor that increases entrepreneurs' perceptiveness of opportunities, enhances their capacity to engender ideas, and leads them to engage in risky decisions and activities (Gerleve and Flatten 2019; Fatma et al. 2021). Besides, recent evidence suggests that positive affective dispositions, such as hope, can be highly effective in favoring the IE process (Basly and Saunier 2020) and in seeing IOR as a desirable activity (Muzychenko and Liesch 2015). Thus, we expect a positive relationship between hope and both active and passive IOR. On the one hand, hope as a factor that increases entrepreneurs' ambitions and that improves their efficacy to develop the market (Gerleve and Flatten 2019), may push them to get actively involved in strategic planning activities (Snyder et al. 1991) and to increase their planning repertoire to pursue an IO intentionally. On the other hand, as hope increases entrepreneurs' scope of attention, it makes them particularly sensitive to perceive opportunities through a creative mindset (Rego et al. 2012). Thus, hope may strengthen international entrepreneurs' alertness and improve their perception of many events occurring in the international environment. Formally stated:

**H2** Hope is positively related to (a) active and (b) passive IOR.

Building on the broaden-and-build theory, it is expectable that courage and hope may have a greater relationship with passive IOR than active IOR. Through courage and hope, international entrepreneurs may arrive at a higher state of alertness where they increase their creative fluidity, flexibility, and perception by thinking outside the box (Fredrickson and Branigan 2005; Fatma et al. 2021).

Therefore, international entrepreneurs broaden their mental horizons and create a greater state of awareness that allows them to notice that which has hitherto not been suspected of existing at all (Hilmersson et al. 2021). Courage and hope would then induce international entrepreneurs to stay aware of new incoming information while not searching for an IO and to identify IOs through a special sensitivity; for example, by spontaneously connecting the new information they receive with previously stored information (Zaefarian et al. 2016; Tabares et al. 2021).

The affect-as-information theory reinforces our expectation that courage and hope may have a stronger relationship with passive IOR. As a compelling information signal that things are going well, positive affect may moderate international entrepreneurs' effort and proactive behavior toward tasks (Foo et al. 2009). Although the broaden-and-build effect may facilitate both active and passive IOR, the information provided by positive affect may moderate their effort to actively identify IOs. This does not mean that entrepreneurs decrease focused attention or stop actively pursuing an IO, but it does mean that they moderate their effort as it may indicate to them that there is no urgency to engage in change behaviors at the present time (Lam et al. 2014). Therefore, we argue that hopeful and courageous international entrepreneurs will be more prone to identify IOs serendipitously rather than purposefully since they are driven by a high state of perceptiveness that will allow them to identify IOs beyond an organized and methodical process. Formally stated:

**H3** Courage has a stronger positive association with passive than active IOR.

**H4** Hope has a stronger positive association with passive than active IOR.

Anticipated regret is defined here as the constant experience of the regret that individuals experience as a result of comparing the anticipated outcome of their decision not to act with the outcome they would have experienced had they acted (Loewenstein and Lerner 2003; Neneh 2019). Previous literature argues that anticipated regret acts as an affective push that forces individuals to engage in entrepreneurial gestation activities (Hatak and Snellman 2017; Neneh 2019). Anticipated regret will make international entrepreneurs regret that they did not identify an IO earlier (Glavas et al. 2017) and may push them to pursue an opportunity in the international market. However, research has also shown that international entrepreneurs with negative affect will perceive an IO as riskier and thus see the international market with more uncertainty (Riquelme and Alqallaf 2020). As such, research on anticipated regret argues that individuals prefer choices that minimize their potential negative consequences (Tochkov 2009). In this vein, it seems plausible that anticipated regret drives international entrepreneurs to put more effort into seeking and gathering information to recognize IOs (Foo et al. 2009). They will be more persuaded to identify IOs through a rational, systematic process to minimize the potential adverse outcomes and risks of the international market. In contrast, anticipated regret will make international entrepreneurs

narrow their passive search and alertness since it will lead to low levels of attention and limit information exploration in work and non-work contexts (Fredrickson 2004; Savolainen 2014). Thus, entrepreneurs will leave out a wide range of events occurring in the international environment. Formally stated:

**H5** Anticipated regret is positively related to (a) active IOR and (b) negatively related to passive IOR.

Fear of failure is the individual's stable disposition to experience shame or humiliation as a consequence of failure (Atkinson 1966; Cacciotti and Hayton 2015). This negative affect could both inhibit and motivate entrepreneurial behavior and decision-making (Cacciotti et al. 2016). Experiencing fear of failure leads international entrepreneurs to view circumstances with more uncertainty (Alon et al. 2013), and thus it narrows their scope of attention (Fredrickson and Branigan 2005; Savolainen 2014). As international markets could be seen as unfamiliar business environments filled with risks and uncertainty, fear of failure plays an even more critical role than in "domestic" entrepreneurship (Dong and Muzychenko 2018). Indeed, Alon et al. (2013) argued that international entrepreneurs' fear of failure declines their proneness to internationalize. Besides, affect-as-information theory establishes that negative affect acts as a risk enhancer and generates pessimistic behaviors, but it may also increase individuals' effort to mitigate risk perception (Foo et al. 2009). In our context, this could mean that fear of failure pushes international entrepreneurs to search for information exhaustively and from trusted sources to identify IOs. Indeed, Cacciotti et al. (2016) postulate that fear of failure is likely to lead entrepreneurs to focus on specific information, possibly waiting to visualize a bigger picture of the opportunity. Following this line of reasoning, we postulate that fear of failure would stimulate the purposeful search and inhibit the serendipitous discovery of IOs. Formally stated:

**H6** Fear of failure is positively related to (a) active IOR and (b) negatively related to passive IOR.

## 4.2 IOR perspectives and the formation of opportunity beliefs

We theorize that although both active and passive IOR may lead to forming international opportunity desirability and feasibility beliefs, active IOR leads to higher opportunity feasibility and desirability beliefs than passive IOR. In active IOR, the search initiative comes from the entrepreneurs themselves pushed either by positive or negative affect, and frequently, they are clear about what they are looking to find (Tuomisalo 2019). Indeed, entrepreneurs search for a specific missing piece of information to identify a sought-after IO rather than looking for an entirely new IO (Kontinen and Ojala 2011). This involves that the entrepreneur's intentions and willingness to identify an IO are high (Zaefarian et al. 2016), making the search process somehow predictable and therefore that the discovered

IO is perceived as proximate to the entrepreneur's goals, desires, resources, and needs (Bolzani and Boari 2018). By perceiving the IO as proximate, entrepreneurs should form strong desirability and feasibility beliefs of exploiting it. Similarly, the literature indicates that entrepreneurs who have actively recognized an IO show a stronger and clearer commitment to exploit the IO (Ciravegna et al. 2014b). The logic is that IOs discovered through an active, systematic way reduce the potential adverse effects and cognitive biases that emerge in the IOR process (Chandra et al. 2009) since international entrepreneurs rely on trusted information sources and, therefore, these IOs are seen as appropriate and safer to exploit (Miocevic and Morgan 2018; Tabares et al. 2021). Following this line of reasoning, it is proposed that IOs identified actively will fit entrepreneurs' desires, goals and resources and thus will lead them to visualize the exploitation of the IO as attractive, easy to realize, and controllable (Williams and Wood 2015; Bolzani et al. 2021).

In passive IOR, international entrepreneurs unwillingly recognize an IO guided through their intuition and/or serendipity by unintentionally broadening their search scope and thinking outside the box (Zaefarian et al. 2016). This leads entrepreneurs to identify unexpected IOs, which may come from unfamiliar knowledge areas (Hilmersson et al. 2021). Given their accidental appearance, it can be argued that entrepreneurs will be faced with an entirely new IO (Kontinen and Ojala 2011), which indeed would imply a reinvention of entrepreneurs' goals, desires, and/or resources to exploit it. As such, passively identified IOs may be seen as less proximate, and therefore be perceived as uncertain, risky, and less safe to exploit, promoting seeing an IO with less confidence and safety than IOs recognized actively (Chandra et al. 2009). This should translate into more conservative and faint mental images about exploiting the IO's desirability and feasibility. Thus, we argue that it seems plausible that IOs identified actively fit more with the entrepreneurs' goals, desires, and resources so that they can see those IOs with greater desirability and feasibility. Formally stated:

**H7** Active IOR is positively related to (a) opportunity desirability belief and (b) opportunity feasibility belief.

**H8** Passive IOR is positively related to (a) opportunity desirability belief and (b) opportunity feasibility belief.

**H9** Active IOR has a stronger positive association with (a) opportunity desirability and (b) opportunity feasibility belief than passive IOR.

Figure 1 shows the hypothesized model tested in this study.

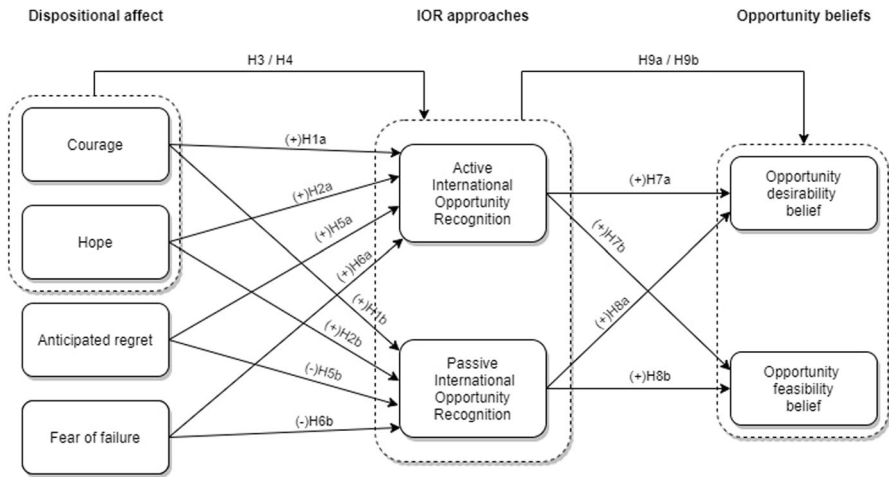


Fig. 1 Conceptual model

## 5 Empirical investigation

### 5.1 Method

#### 5.1.1 Data collection and sample

We collected data from international entrepreneurs operating in the region of Andalusia (southern Spain). Prior literature suggests using a regional sample to reduce the influence of environmental elements and uncontrolled external interference (e.g., Elston and Weidinger 2019). Andalusia was the second-largest exporting region (11% of total Spain) and the one that contributed most to Spain’s export growth in 2019 (Spanish Institute for Foreign Trade 2020). Indeed, it should be pointed out that in 2015 there were 18,293 Andalusian exporting companies, while in 2020, these already reached 22,294 (Andalusian Agency of Foreign Promotion 2021), which demonstrates the dynamism of the Andalusian foreign sector and the active and essential role of international entrepreneurs in this region. Actually, the literature highlights that Andalusian international entrepreneurs and companies have high international orientation and proactivity (Moral-Pajares et al. 2015).

Following previous suggestions (e.g., Murnieks et al. 2020), we contacted participants through multiple channels. Thus, we used the Andalusian Agency of Foreign Promotion, Andalusian export company associations, and Andalusian business incubators as sources for contacting international entrepreneurs. For the data collection, a questionnaire was initially developed in English. It was then translated into Spanish and reviewed by eleven experts; six scholars and five international entrepreneurs. From this review, it was necessary to make small changes due to the study setting. Finally, a back-translation was made, where differences affecting the nature of the selected items were not found.

The final sample comprises 997 international entrepreneurs, out of which we received 172 valid questionnaires, representing a 17.3% effective response rate, which is consistent or slightly exceeds that of other studies endeavoring research with entrepreneurs as sample (e.g., Murnieks et al. 2020). We applied a series of t-tests that compared the first 15 answers (early respondents) with the last 15 replies (late respondents), confirming that there are no significant differences; hence non-response bias is not a serious concern (Armstrong and Overton 1977). Given that the most complex regression in the research model has four predictors, assuming a medium effect size of 0.15 and a power of 0.95 being alpha 0.05, a minimum sample size of 129 international entrepreneurs was needed. This calculation was made using the G\*Power program (Memon et al. 2020). Consequently, the final sample (n=172) meets the initial sample size requirements. In our sample, the international entrepreneurs were 42 years old on average, and 59.3% (102) were male. They belonged to nine different industries, possessed an average of 10 years of international entrepreneurial experience, and 48.8% (84) had international work experience (outside their home country). The majority had completed a bachelor's (48.3%) or a master's (44.8%) degree.

### 5.1.2 Variables and measures

The measuring items were mainly adapted from validated scales used in prior studies. All items were measured by a seven-point Likert scale (1 = totally disagree to 7 = totally agree). The complete list of variables and items used can be found in the Appendix.

*Affect* Because we investigate affect experienced persistently over time by entrepreneurs (i.e., dispositional affect), we took previously developed scales that focused on measuring stable affect and that, in some cases, have already been used for this purpose in the entrepreneurial context. To measure *courage*, we utilize a five-item scale developed by Howard and Alipour (2014), used in the entrepreneurial context by Ebert et al. (2019). *Hope* was assessed using a six-item scale taken from Snyder et al. (2002), which was created on the premise that people are likely to have a dispositional hope that applies in all situations and at all times. The measure of *anticipated regret* was captured with three items adapted from Hatak and Snellman's (2017) and Ding's (2018) studies. The three items capture the constant tendency to regret not recognizing an opportunity in the international market. Finally, *fear of failure* was measured with a five-item scale developed by Conroy et al. (2002), used in the entrepreneurial context by Wood et al. (2014). This scale was developed to measure an individual's stable propensity to experience fear of failure.

*International opportunity recognition* To capture active and passive IOR, we adapted previous scales to our context (Nicolaou et al. 2009; Kuckertz et al. 2017; Lorenz et al. 2018). Active IOR was measured by six items that capture the deliberate investment in time, the effort to explore relevant information, and the active search to recognize IOs, while passive IOR was assessed by five items that reflect the serendipitous emergence of an IO and the sensitivity and lack of intentionality to identify an IO.

*Desirability and feasibility beliefs* These two constructs were measured by adapting the scales developed by Ivanova et al. (2018). Each construct was measured by three items.

*Control variables.* Five control variables were included to account for possible sources of variation: gender (1=female; 2=male), age (in years), education level (five levels), international entrepreneurial experience (in years), and international work experience (1=yes; 2=no). We found it relevant to include these control variables because previous studies have indicated that sociodemographic and experience-based factors could influence the IE process (Schulz et al. 2009) and, more specifically, the formation of international opportunity desirability and feasibility beliefs (Bolzani and Boari 2018; Riquelme and Alqallaf 2020; Bolzani et al. 2021). For example, research has found that males tend to evaluate IOs as more attractive than females (Riquelme and Alqallaf 2020). Additionally, literature suggests that entrepreneurs' age and education may explain why individuals differentially evaluate the feasibility and desirability of an IO (e.g., Wood and McKelvie 2015; Bolzani and Boari 2018). For instance, it is suggested that the older the entrepreneurs, the more they consider IOs as desirable to pursue (Riquelme and Alqallaf 2020). Finally, as it is common to draw on one's prior experience as a common judgment tactic in any entrepreneurial cognitive process, we control for international entrepreneurial experience and international work experience, since international entrepreneurs are heterogeneous in the number of their experiences and it may impact IOE (Bolzani et al. 2021).

### 5.1.3 Data analysis

Partial least squares structural equation modeling (PLS-SEM) technique (Henseler et al. 2009) was chosen to test our research model based on two main reasons: (1) The research model proposed in this study is complex (i.e., it has a high number of constructs, indicators, and relationships); and (2) Our sample size is small (but representative) since our population is also small (Hair et al. 2019). Mode A (reflective measures) has been selected as the estimation method since its use is recommended when there exist causal priority from the construct to the indicators (Diamantopoulos and Winklhofer 2001) and when there are expected correlated items, i.e., when the construct is not a combination of the indicators, and therefore these are mutually interchangeable (Jarvis et al. 2003). SmartPLS 3.0 software was used to assess the model.

### 5.1.4 Common method bias

Previous literature states that common method bias (CMB) should be considered in questionnaire-based studies when the same person answers to the independent and dependent variables (Podsakoff et al. 2012). Thus, as a priori approach, we took steps to avoid CMB from the design phase of the questionnaire. To this end, we applied several of the remedies (e.g., ensure the anonymity of participants) proposed by Podsakoff et al. (2012) and MacKenzie and Podsakoff (2012). As a posteriori approach, we applied the measured latent marker variable (MLMV) method since it



is the only effective statistical remedy suggested to detect and control CMB in PLS models (Chin et al. 2013). The MLMV should pertain to a different domain of the variables included in the hypothesized model and must be extracted from a different unit of analysis. Therefore, we incorporated an adaptation of the Hamedoglu and Potas (2012) organizational exhibitionism scale as an MLMV variable in the survey. The results showed (a) That the model with the inclusion of the MLMV presented a worse fit than the originally proposed model and (b) That the coefficients of the paths did not present significant differences between them and were consistent with the original estimates. Consequently, CMB was not a serious problem for this study.

## 5.2 Results

### 5.2.1 Measurement model

As our estimation method has been set in Mode A (reflective), we applied well-established traditional measures to assess internal reliability and validity (Hair et al. 2011; Henseler et al. 2016). Table 2 shows the indicator loadings and weights, Cronbach's Alfa ( $\alpha$ ), composite reliability (CR), and average variance extracted (AVE). Indicator loadings have values higher than the recommended 0.707 (Carmines and Zeller 1979), except for COU4; however, we decided to keep this item, since it is part of a well-established scale in the literature (Howard and Alipour 2014), and since its exclusion does not increase the value of the AVE or CR but rather decreases them (Hair et al. 2011). Cronbach's Alfa and CR of all variables are higher than 0.70 and lower than 0.95, which are the critical values to be considered (Hair et al. 2019; Nunnally 1978). This confirms that all variables meet the requirement of construct reliability. Finally, the AVE for each of the constructs exceeds the cut-off level of 0.50 (Fornell and Larcker 1981), confirming our measures' convergent validity. Additionally, in Table 3, the discriminant validity is assessed by applying the Heterotrait-Monotrait Ratio (HTMT) 0.85 criteria, which is stricter than other classical criteria such as Fornell-Larcker criterion and cross-loadings (Henseler et al. 2015). As can be observed, all constructs attain discriminant validity. All these results as a whole state the validity of our measurement model.

### 5.2.2 Structural model

The structural model assessment begins with the evaluation of the global fit model computed by the standardized root mean square residual (SRMR), which calculates the root mean square discrepancy between the correlations observed and the model-implied correlations (Henseler et al. 2016). Our hypothesized model achieves an SRMR of 0.077, which means an appropriate fit considering the cut-off of 0.080 suggested by Hu and Bentler (1999). From here, to continue with the evaluation of the structural model, we assess the sign, size, and meaning of the structural path coefficients, the  $f^2$ , and the  $R^2$  and the  $Q^2$  values for predictive relevance. Following Streukens and Leroi-Werelds's (2016) suggestions, 10,000 resamples (bootstrapping technique) were used to generate t-statistics to evaluate the statistical significance of



**Table 2** Measurement model evaluation

Construct/indicators	Weight	Loading	$\alpha$	CR	AVE
<i>Courage (COU) (reflective)</i>			0.813	0.868	0.569
COU1	0.247	0.748			
COU2	0.221	0.752			
COU3	0.277	0.815			
COU4	0.223	0.686			
COU5	0.354	0.765			
<i>Hope (HOP) (reflective)</i>			0.848	0.888	0.570
HOP1	0.215	0.731			
HOP2	0.242	0.795			
HOP3	0.209	0.707			
HOP4	0.240	0.756			
HOP5	0.229	0.740			
HOP6	0.190	0.795			
<i>Fear of failure (FOF) (reflective)</i>			0.860	0.899	0.642
FOF1	0.219	0.789			
FOF2	0.312	0.881			
FOF3	0.235	0.763			
FOF4	0.251	0.802			
FOF5	0.225	0.766			
<i>Anticipated regret (ARR) (reflective)</i>			0.872	0.922	0.797
ARR1	0.347	0.873			
ARR2	0.397	0.922			
ARR3	0.375	0.882			
<i>Passive international opportunity recognition (PIO) (reflective)</i>			0.903	0.928	0.720
PIO1	0.293	0.890			
PIO2	0.209	0.812			
PIO3	0.235	0.795			
PIO4	0.241	0.882			
PIO5	0.198	0.860			
<i>Active international opportunity recognition (AIO) (reflective)</i>			0.914	0.933	0.700
AIO1	0.176	0.770			
AIO2	0.217	0.854			
AIO3	0.157	0.767			
AIO4	0.209	0.871			
AIO5	0.208	0.861			
AIO6	0.223	0.889			
<i>Opportunity desirability belief (ODB) (reflective)</i>			0.791	0.878	0.707
ODB1	0.412	0.876			
ODB2	0.358	0.771			
ODB3	0.417	0.870			
<i>Opportunity feasibility belief (OFB) (reflective)</i>			0.884	0.928	0.811
OFB1	0.345	0.892			

**Table 2** (continued)

Construct/indicators	Weight	Loading	$\alpha$	CR	AVE
OFB2	0.375	0.885			
OFB3	0.390	0.924			

**Table 3** Discriminant validity (HTMT)

	1	2	3	4	5	6	7	8
1. Courage								
2. Hope	0.476							
3. Fear of failure	0.480	0.415						
4. Anticipated regret	0.107	0.075	0.456					
5. Passive IOR	0.335	0.370	0.528	0.387				
6. Active IOR	0.201	0.230	0.153	0.669	0.447			
7. Op. desirability belief	0.287	0.136	0.095	0.224	0.095	0.446		
8. Op. feasibility belief	0.341	0.334	0.106	0.604	0.190	0.803	0.516	

the path coefficients. Table 4 includes the path coefficients, t-values, and effect size ( $f^2$ ) of the structural model estimation and the list of supported and non-supported hypotheses, while Fig. 2 depicts the model with the path coefficients, significance, and  $R^2$  values.

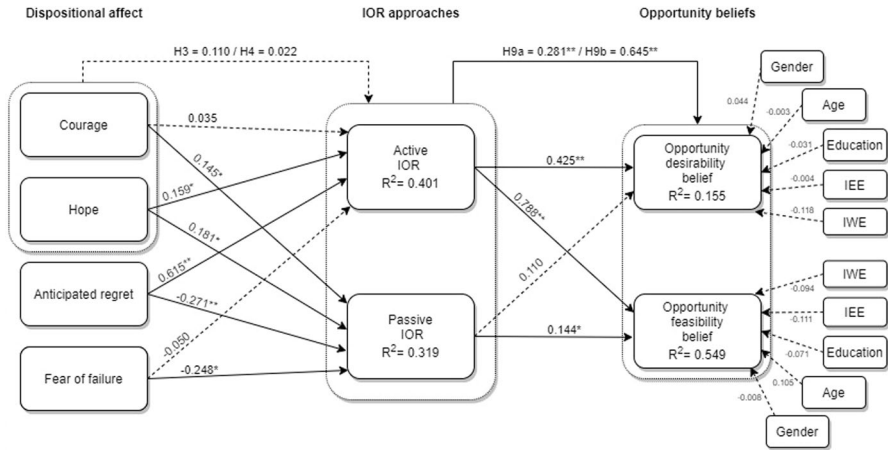
The analysis shows that eleven of our sixteen hypotheses are supported. The exceptions are for the effects of courage (H1a) and fear of failure (H6a) on active IOR, passive IOR on opportunity desirability belief (H8a), and the greater effects of both courage (H3) and hope (H4) over passive than active IOR. Regarding the effect size ( $f^2$ ), the effect of courage on passive IOR (H1b), hope on active and passive IOR (H2a,b), anticipated regret on passive IOR (H5b), fear of failure on passive IOR (H6b), and passive IOR on opportunity feasibility belief (H8b) could be considered as weak. The effect of active IOR on opportunity desirability belief (H7a) could be considered as moderate, and the effect of anticipated regret on active IOR (H5a) and active IOR on opportunity feasibility belief (H7b) could be considered as strong (Cohen 1988).

To estimate the hypotheses H3, H4, H9a, and H9b, we applied the approach suggested by Rodríguez-Entrena et al. (2018), which consists of analyzing if significant differences exist between two parameters estimates. In this vein, hypotheses H3 and H4 are not supported, which means that hope and courage do not possess a greater effect size on passive IOR over active IOR, while H9a and H9b are supported, which show that active IOR possesses a significantly greater effect on opportunity desirability and feasibility beliefs than passive IOR. Finally, it should be said that none of the control variables have significant effects and therefore are not a source of variation. Indeed, by including only the control variables in a model, we confirm that none of them unfold significant linear effects and generate rather weak  $R^2$

**Table 4** Structural model results

Hypothesis	Impact of	On	Path coefficient	t-value	f <sup>2</sup>	Hypothesis supported
H1a+	Courage	Active IOR	0.035	0.462	0.000	No
H1b+	Courage	Passive IOR	0.145	1.834*	0.022	Yes
H2a+	Hope	Active IOR	0.159	2.313*	0.033	Yes
H2b+	Hope	Passive IOR	0.181	2.373*	0.037	Yes
H3	Courage	Passive IOR > Active IOR	0.110 <sup>a</sup>	0.804	–	No
H4	Hope	Passive IOR > Active IOR	0.022 <sup>a</sup>	0.166	–	No
H5a+	Anticipated regret	Active IOR	0.615	10.020**	0.481	Yes
H5b-	Anticipated regret	Passive IOR	-0.271	3.437**	0.083	Yes
H6a+	Fear of failure	Active IOR	-0.050	0.685	0.003	No
H6b-	Fear of failure	Passive IOR	-0.248	2.860*	0.055	Yes
H7a+	Active IOR	Opportunity desirability belief	0.425	5.664**	0.179	Yes
H7b+	Active IOR	Opportunity feasibility belief	0.788	19.222**	1.153	Yes
H8a+	Passive IOR	Opportunity desirability belief	0.110	1.329	0.012	No
H8b+	Passive IOR	Opportunity feasibility belief	0.144	2.614*	0.039	Yes
H9a	Active IOR > Passive IOR	Opportunity desirability belief	0.281 <sup>a</sup>	3.408**	–	Yes
H9b	Active IOR > Passive IOR	Opportunity feasibility belief	0.645 <sup>a</sup>	10.877**	–	Yes

Two-tailed test. <sup>a</sup> Coefficient differences. \**p* < 0.05; \*\**p* < 0.01



**Fig. 2** Hypothesis testing results, *IEE* International entrepreneurial experience; *IWE* International work experience. Dotted lines reflect the non-significant relationships. \* $p < 0.05$ ; \*\*  $p < 0.01$

**Table 5** Predictive Relevance of Indicators of the Model

	R <sup>2</sup>	R <sup>2</sup> significance	Q <sup>2</sup>	Q <sup>2</sup> significance
Active IOR	0.401	Moderate	0.272	Medium
Passive IOR	0.319	Moderate	0.213	Low
Opportunity desirability belief	0.155	Weak	0.103	Low
Opportunity feasibility belief	0.549	Moderate	0.438	Medium

values (0.021 for opportunity desirability belief and 0.056 for opportunity feasibility belief). Figure 2 shows the path coefficients of the control variables.

Moreover, our research model seems to possess appropriate predictive power (in-sample prediction) for all endogenous variables (see Table 5), specifically for the opportunity feasibility belief, which attains the largest coefficient of determination (R<sup>2</sup> = 0.549). Likewise, our model shows predictive performance (out-of-sample prediction), which denotes the ability to predict accurate values for individual cases (Evermann and Tate 2016). For this purpose, the Q<sup>2</sup> values in PLS Predict were calculated (Table 5).

## 6 Discussion and conclusions

While scholars acknowledge that IOR represents the cornerstone of the IE process (Angelsberger et al. 2017; Tabares et al. 2021), little is known about what drives international entrepreneurs to recognize IOs either by active or passive search (Filser et al. 2020; Terán-Yépez et al. 2021) and how these two IOR perspectives influence the next stages of the IE process (Tabares et al. 2021; Di Gregorio et al.

2021). This paper presents the first study into the role of dispositional (trait) positive and negative affect as antecedents of IOR perspectives. Specifically, we examine if hope, courage, fear of failure, and anticipated regret, as stable affective dispositions, influence active and passive IOR differently. This study is also one of the first that empirically connects IOR with IOE, two intertwined and interdependent processes. Explicitly, we analyze whether the two IOR perspectives can lead international entrepreneurs to form international opportunity desirability and feasibility beliefs differently. As such, we add evidence to both the emerging literature on the individual-level determinants of active and passive IOR (e.g., Hilmersson and Papaioannou 2015; Kraus et al. 2017) and the flourishing literature on how international opportunity desirability and feasibility beliefs are formed to evaluate IOs (e.g., Nowiński and Rialp 2016; Bolzani and Boari 2018; Bolzani et al. 2021). Moreover, we also theoretically and empirically reinforce the link between IOR and IOE.

We add to the stream of literature on the individual-level determinants on active and passive IOR by showing that stable affective dispositions, depending on if they are positive or negative, may have a different impact on each IOR perspective. Particularly, and in line with our expectations, we find that hope and anticipated regret are positively and significantly related to active IOR, and that courage and hope are positively and significantly related to passive IOR, while fear of failure and anticipated regret are negatively and significantly related to passive IOR. However, contrary to our expectations, we find no relationship between courage and fear of failure with active IOR. Likewise, we have also found no support for our assumption that courage and hope are more related to active than passive IOR.

The findings suggest that courage seems to lead to identify IOs serendipitously, but it does not seem to be a sufficient determinant that pushes an entrepreneur to an active search for IOs. This finding might be related to the idea that courageous individuals are more likely to be sensation seekers (Muris 2009). As such, courageous entrepreneurs will search out new situations that suppose taking risks in the pursuit of newness, which is more associated with passive than active IOR. Somehow, the results unravel and refine the view of recent research that found that courageous individuals manifest greater entrepreneurial activity (Ebert et al. 2019). While our findings suggest that courage may not push international entrepreneurs to carry out strategic planning activities to pursue IOs actively, they also suggest that courage facilitates the serendipitous encounters of IOs since it helps entrepreneurs broaden their scope of attention and thinking repertoires. In this way, courage is relevant to identifying IOs without looking for them, which may raise international entrepreneurial activity.

Furthermore, our results also show that when an international entrepreneur is hopeful, s/he enhances his/her perceptual fields to discover IOs whether they are looking for them or not, i.e., actively or passively. This finding adds evidence to previous research that suggests that hope increases the entrepreneurs' chances of participating in the entrepreneurial process and launching a new venture (Li 2011; Fatma et al. 2021). It is shown that hope provides entrepreneurs with alternative routes to identify business opportunities in the international market. As such, our findings suggest that hope allows entrepreneurs to see IOR as a desirable activity and, therefore, heightens their ambitions of identifying an IO by conducting strategic planning

activities. Moreover, our results also suggest that hope strengthens the activation of the international entrepreneur's intuition and alertness and makes them aware of new information that arrives by increasing their perceptiveness and thinking outside the box.

In short, we can argue that hope and courage generally enhance the possibility of identifying an opportunity in the foreign market, although with the nuances discussed above. The finding that both positive stable affective dispositions do not have a greater relationship with passive IOR than active IOR is of special relevance since it may suggest that courage and hope exert a similar effect on the minds of entrepreneurs in order for them to identify an IO.

Besides, our findings suggest that when an international entrepreneur is under the influence of negative affective dispositions, such as fear of failure or anticipated regret, s/he appears to view the circumstances with more uncertainty and risk that narrow their scope of attention. These results extend previous research that argues that negative affect limits information exploration (Hayton and Cholakova 2012). Our findings also indicate that entrepreneurs leave out a wide range of situations in the international environment, which harms passive IOR. Thus, negative affect, specifically fear of failure and anticipated regret, is ultimately seen as a barrier to entrepreneurs being able to recognize an IO passively. However, as discussed, negative affect can also motivate and encourage entrepreneurial behavior (Cacciotti et al. 2016) and the pursuit of IOs. Nevertheless, to this end, it is seen as necessary to increase the effort of information search and, therefore, the rationality of decisions to avoid possible negative consequences (Tochkov 2009). In the context of our study, we show that anticipated regret acts as an affective push that fosters information-seeking to discover IOs actively. These findings complement prior evidence suggesting that anticipated regret becomes an affective impulse that promotes engagement in entrepreneurial gestation activities (Hatak and Snellman 2017; Bouderbala 2019; Neneh 2019). However, they contradict other studies which claim that negative affect constantly acts as a barrier in the international entrepreneurial process (Alon and Lerner 2008; Alon et al. 2013; Riquelme and Alqallaf 2020). Thus, we add evidence that anticipated regret can act as both a barrier and a push towards international business.

Additionally, and contrary to our expectations, we have found that fear of failure is negatively but not significantly related to active IOR. A possible reason for this counterintuitive result is found in the affect-as-information theory. As negative affect serves as a call for pessimistic behaviors and fear of failure has a superior negative valence than other negative affective dispositions (e.g., anticipated regret), even active IOR is insufficient to make the entrepreneur overcome the fear of failure s/he can perceive. In this regard, further investigating other negative affective dispositions in the IOR phenomenon would be relevant.

In addition, we contribute to the stream of literature that investigates how international opportunity desirability and feasibility beliefs are formed to evaluate IOs. Particularly, our results uncover that active and passive IOR differently inform opportunity desirability and feasibility beliefs. In this sense, we also add some relevant insights to the flourishing literature on the link between IOR and IOE. We show that while both forms of IOR positively inform the opportunity feasibility belief, active

IOR highly relates to the formation of such belief compared to passive IOR. It seems that identifying IOs via an active search behavior induces more confidence and commitment in performing the necessary tasks to achieve successful exploitation of the IO. The willingness to identify an IO demonstrated through the active search led entrepreneurs to create a stronger cognitive basis and judge more favorably the merits of an IO and its feasibility (Chandra 2017). Additionally, regarding the formation of desirability belief, we also found a positive relationship between active IOR and such belief, but we have found no evidence for the effect of passive IOR on desirability belief. This implies that if the IO is actively identified, the entrepreneur will consider that the successful exploitation of this IO would fulfill his/her desires and see it as profitable and attractive. Or, put another way, if an entrepreneur identifies an IO actively, s/he will believe that they are better able to exploit it and that they will obtain better economic returns if exploited in comparison with an entrepreneur who recognizes an IO passively.

In summary, these findings extend the assumptions that the more the IO identified fit goals, desires, willingness, and needs of the entrepreneur, the greater the feasibility and desirability beliefs to exploit the opportunity (Oyson and Whittaker 2015; Bolzani et al. 2021). This finding is of special relevance since the beliefs of opportunity are an important driver of international business action, and therefore greater feasibility and desirability beliefs can lead to an increase in the exploitation rate of IOs (Nowiński and Rialp 2016; Miocevic and Morgan 2018; Bolzani and Boari 2018). In this vein, our findings imply that actively identified IOs are better valued and evaluated than passive ones, suggesting that these IOs tend to be more exploited. These results align with previous literature suggesting that entrepreneurs who actively search for an IO will likely exploit the IO faster and more intensively (Ciravegna et al. 2014b). Finally, the fact that we have found no effect of the passive IOR on opportunity desirability reflects that apparently, only an active, systematic process to identify IOs results in desirability belief formation. That is, active IOR is critical to understanding the entrepreneur's judgment about the potential reward of exploiting an IO.

## 6.1 Contributions to research

This research makes at least two main theoretical contributions. First, we contribute to the emerging literature on the individual-level factors explaining why international entrepreneurs are driven to recognize IOs by active or passive search. Prior studies have highlighted cognitive and experience-based factors to explain why differences in IOR may exist (e.g., Hilmersson and Papaioannou 2015; Kraus et al. 2017). We go one step further by analyzing how positive and negative affect influence these processes, and therefore we extend the knowledge in this stream by adding new factors to the debate on how individual-level aspects influence IOR. We specifically offer one of the first empirical papers investigating the role of positive and negative stable affective dispositions in IE, and the first to examine their role on IOR approaches (see Table 1).

As a theoretical basis for our study, we build a coherent fit between broaden-and-build and affect-as-information theories, the two most promising theoretical approaches to understanding how affect impacts on the entrepreneurship process. In doing so, we answer recent calls for theoretical and empirical research on the role of positive and negative stable affective dispositions in IOR to provide valuable insights into the IE literature (e.g., Glavas et al. 2017; Dillon et al. 2020). Our study thus extends prior conceptual and case study-based studies that supposed that IOR might be influenced by dispositional affect, by directly linking positive and negative stable affective dispositions to IOR. As a relevant addition, we investigate the role of four stable affective dispositions (i.e., courage, hope, fear of failure, and anticipated regret) and show that they may affect each IOR perspective differently. By including them into the debate on the individual-level factors that influence IOR, we consider the emotional aspect of the entrepreneurial mindset, which is a crucial element although little studied yet. Often it is the affect what drives the entrepreneurial mindset (Kuratko et al. 2020; Pidduck et al. 2021), and thus understating how it influences international entrepreneurial behavior is of great relevance. Thus, this empirical investigation represents a first starting point towards a better understanding of how positive and negative affect act as an individual-level determinant of the IOR process.

Second, we contribute to the flourishing literature on how IO feasibility and desirability beliefs are formed for evaluating IOs. Previous studies in this field have mainly examined the effect of individual-level factors (e.g., social network ties, entrepreneurs' international business skills, and entrepreneurial experience) or perceived environmental conditions (e.g., governmental financial and regulatory support) (e.g., Nowiński and Rialp 2016; Bolzani and Boari 2018; Bolzani et al. 2021). However, prior research has failed to evidence how the way the IO was recognized determines the formation of opportunity desirability and feasibility beliefs. It is important to understand how opportunity beliefs are formed since they have been recognized as a relevant driver for international entrepreneurial action (Bolzani et al. 2021). Using the mental model theory, we demonstrated that opportunity beliefs are differently formed and shaped depending on how the IO was identified. While we cannot directly study the mental models of international entrepreneurs, our findings are indicative of the basic premises of the mental model theory. Thus, our results suggest that entrepreneurs shape their opportunity beliefs depending on how the IO characteristics are related to the perceiver's goals, desires, and needs. More specifically, our findings show that international entrepreneurs who actively recognized an IO should be more likely to evaluate the IO as more feasible and desirable to exploit than international entrepreneurs who passively identified an IO. Our results, therefore, align with more general findings that suggest that active IOR leads to a faster and more intensive internationalization (Ciravegna et al. 2014b). As such, this investigation provides a first insight on the relevance of the way of identifying an opportunity in the international market, in understanding the formation of beliefs about the feasibility and desirability of exploiting the opportunity and thus their effect in the IOE process. This is particularly relevant since IE is a process of various stages, and IOR and IOE are two intertwined and interdependent processes, which, however, have been scarcely studied as a whole (Tabares et al. 2021; Di Gregorio et al.



2021). Thus, we also enrich the link between IOR and IOE as two interrelated and interdependent processes.

## 6.2 Practical implications

The results offer practical implications for IE practice and education. First, it is relevant for international entrepreneurs to be aware that their cognitive processes and behavior could be influenced by subjective processes such as affect. This might contrast with the presumptions of international entrepreneurs that the recognition of IOs depends only upon objective information. Thus, by recognizing the subjectivity of IOR, international entrepreneurs should consider how positive and negative dispositional affect will influence their IO search behavior. For example, they should be aware that being hopeful can predispose them to expand their search spectrum and identify IOs in both an active and passive manner. Likewise, being courageous will favor alertness to discover opportunities in the international market. At a firm level, these results can be also beneficial for companies operating internationally which face a wide variety of market challenges, to be aware that, for example, entrepreneurial individuals with hopeful future expectations are prone to be “versatile” in identifying IOs since involving those in the firm’s activity can increase the possibilities of recognizing new IOs. In addition, to take advantage of entrepreneurs who are likely to actively identify international opportunities derived from their dispositional affect, companies interested in expanding to the international market could add personality tests in their recruitment processes as additional criteria for selecting personnel for the company.

On the contrary, our results also warn international entrepreneurs that if they experience negative affect, their exploration of information will be limited, and therefore their alertness will be inhibited. However, an exhaustive search for information could mitigate the doubts generated by the negative affect, i.e., this type of affect would lead entrepreneurs to activate an active search for identifying IOs. Thus, entrepreneurs who feel anticipated regret should know that this can encourage them to carry out strategic planning activities to identify an opportunity in the market, and therefore they should let themselves be carried away by that stable affective disposition.

Second, it is also crucial for international entrepreneurs to recognize that opportunity desirability and feasibility beliefs are distinctively formed and shaped depending on if they discover an IO actively or passively, i.e., those beliefs are open to the influence of their information search behavior. In this regard, international entrepreneurs should be aware that discovering IOs through serendipity may decrease their perceived feasibility of its exploitation. Furthermore, they also should know that their opportunity desirability belief appears not to be influenced by their accidental encounters of IOs. On the contrary, international entrepreneurs must know that identifying IOs through active search highly informs their opportunity desirability and feasibility beliefs because the mind will see this type of IOs as very close to fulfilling the entrepreneur’s goals, desires, and needs. This means that international entrepreneurs should be aware that actively recognized IOs will be seen as more

viable and attractive, and possibly this will translate into a higher rate of exploitation of these IOs. At a certain point, the mind of the international entrepreneur will automatically assess a passively recognized IO as less viable and desirable. Therefore, we recommend that international entrepreneurs carry out a more in-depth evaluation process of passively identified IOs to complement the mental evaluation that may be biased.

Our results also have implications for IE education. Generally, educational programs focus on developing skills in objective aspects (e.g., internationalization strategies, entry mode, market selection), but there is a lack of teaching on how psychological aspects (e.g., affect, information processing, cognitive processes) can influence the IE process. In this vein, our results show that it would be relevant for future international entrepreneurs to receive instruction about strategies to recognize and regulate their affect and educate them on how their international entrepreneurial search behavior could influence the formation and judgment of IO beliefs.

### 6.3 Limitations and future research

This study has some limitations that highlight relevant avenues for future research. First, our sample was based in southern Spain, and while it is an interesting context for testing our conceptual model, our results may not be generalizable to other contexts. Therefore, it will be necessary to examine if our results are valid in other countries or even cultural contexts since our unit of analysis is the individuals, and their behavior based on their affect and cognitions could also be influenced by the cultural context where they are embedded (GEM 2020). Second, as our study is based on cross-sectional data, it is not possible to assume any definite conclusions regarding causality. Therefore, future research using longitudinal data would enhance understanding the interrelationships examined in this study.

Third, even if we applied priori and posteriori approaches to control CMB, we acknowledge that maybe using a single informant to collect the data for independent and dependent variables is not ideal. Understanding that our research is focused on studying the entrepreneur's mind, it is difficult not to use the formula of a single respondent for all variables. However, future studies could link individual variables (of the entrepreneur's mind) with firm variables (e.g., performance) to study how the international entrepreneur's mind processes influence the firm. In this way, two or more data sources could be intermixed. Fourth, even if we used five control variables to account for possible differences based on sociodemographic and experience-based factors, the inclusion of variables of a different nature could have reinforced our results. In such a way, future investigations should use, for example, personality dimensions (such as BIG 5) of the respondents as control variables to examine which personality traits exhibit the affective factors.

Fifth, even if we address positive and negative affect, we focus on two positive (hope and courage) and two negative (fear of failure and anticipated regret) stable affective dispositions. Therefore, future studies must explore the effects of other positive and negative stable affective dispositions in active and passive IOR processes and further advance the relationship between affect and cognition in the international entrepreneurial context. Likewise, although the previous literature assumes similar effects, future research should also study the impact of state affect on IOR processes or even carry out studies where the effect of the two types of affect (i.e., dispositional and state) on IOR approaches are compared.

## 6.4 Conclusion

Drawing on broaden-and-build, affect-as-information, and mental model theories, we conducted an empirical study to advance the incipient body of IE literature by developing a model that examines the effect of positive and negative dispositional affect on active and passive IOR and how both processes impact the formation of IO beliefs. The model was tested using a sample of 172 Spanish international entrepreneurs. The results suggest that, in general, positive affect encourages both active and passive search to recognize IOs, while negative affect inhibits passive search and promotes active search. This reflects that the relationship between negative affect and IOR is not that simple. Additionally, our results elucidate that active IOR better informs opportunity desirability and feasibility beliefs than passive IOR, which only predicts feasibility. Thus, we also enrich the link between IOR and IOE as two interrelated and interdependent processes. These insights might shed light and open the way on the relevance of empirically studying IE as a process. Our suggestion is to converge as a theoretical foundation the broaden-and-build, affect-as-information, and mental model theories to understand better how entrepreneurs seek and make sense of new IOs and when this is most likely to occur. This convergence might inspire future studies that delve into the affective and cognitive determinants of international opportunities' identification and evaluation to investigate further how international entrepreneurs' minds work.

## Appendix

See Table 6.

**Table 6** Questionnaire items

Construct/ indicators	
<i>Courage (COU)</i> (Howard and Alipour 2014)	
Please indicate your level of agreement with each of the following statements (Likert scale 7-points)	
COU1	Even if I feel terrified, I will stay in that situation until I have done what I need to do
COU2	I will do things even though they seem to be dangerous
COU3	If I am worried or anxious about something, I will do or face it anyway
COU4	If there is an important reason to face something that scares me, I will face it
COU5	I tend to face my fears
<i>Hope (HOP)</i> (Snyder et al. 2002)	
Please indicate your level of agreement with each of the following statements (Likert scale 7-points)	
HOP1	If I find myself in a jam, I could think of many ways to get out of it
HOP2	I energetically pursue my goals
HOP3	There are lots of ways around any problem that I face
HOP4	I see myself as being pretty successful
HOP5	I can think of many ways to reach my goals
HOP6	I am meeting the goals that I have set for myself
<i>Fear of failure (FOF)</i> (Conroy et al. 2002)	
Please indicate your level of agreement with each of the following statements (Likert scale 7-points)	
FOF1	When I am failing, I am afraid that I might not have enough talent
FOF2	When I am failing, it upsets my “plan” for the future
FOF3	When I am not succeeding, people are less interested in me
FOF4	When I am failing, important others are disappointed
FOF5	When I am failing, I worry about what others think about me
<i>Anticipated regret (ARR)</i> (Adapted from Hatak and Snellman 2017; Ding 2018)	
Please indicate your level of agreement with each of the following statements (Likert scale 7-points)	
ARR1	I usually regret not identifying an interesting international business opportunity
ARR2	I tend to be affected not to identify an interesting international business opportunity
ARR3	I am usually disappointed not to identify an interesting international business opportunity
<i>Passive international opportunity recognition (PIO)</i> (Adapted from Kuckerts et al. 2017; Lorenz et al. 2018; Nicolaou et al. 2009)	
Please indicate your level of agreement with each of the following statements regarding the identification of the business opportunity that you are currently pursuing (developing) in the international market	

**Table 6** (continued)

Construct/ indicators	
PIO1	I had a "state of alert" or special sensitivity to detect the opportunity in the international market
PIO2	It is difficult to explain how I came up with the international business idea; it just came to me spontaneously
PIO3	I got the international business idea from conversations with other people
PIO4	I had the intuition to identify the opportunity in the international market
PIO5	Although it was not my intention, I identified the opportunity to initiate a new business in the international market
<i>Active international opportunity recognition (AIO) (Adapted from Kuckerts et al. 2017; Lorenz et al. 2018; Nicolaou et al. 2009)</i>	
Please indicate your level of agreement with each of the following statements regarding the identification of the business opportunity that you are currently pursuing (developing) in the international market	
AIO1	I researched international markets to identify the business opportunity through an organized/ methodical process
AIO2	I intentionally searched for foreign customer needs for which I have developed a solution subsequently
AIO3	In the search for the international opportunity, I took my time
AIO4	I examined and questioned existing solutions (own and/or competitors') in a purposeful way to generate a new international business idea
AIO5	I looked for information to generate new ideas for products or services focused on the international market
AIO6	I regularly analyzed the international environment to find a business opportunity
<i>Opportunity desirability belief (ODB) (Adapted from Ivanova et al. 2018)</i>	
Concerning the business opportunity that you are currently pursuing (developing) in the international market, indicate your degree of agreement with the following statements	
ODB1	Exploiting this international opportunity constitutes a profitable business opportunity for me
ODB2	I think that successful exploitation of this international opportunity would fulfill my wishes
ODB3	Exploiting this opportunity in the international market is a desirable business opportunity for me
<i>Opportunity feasibility belief (OFB) (Adapted from Ivanova et al. 2018)</i>	
Concerning the business opportunity that you are currently pursuing (developing) in the international market, indicate your degree of agreement with the following statements	
OFB1	I am confident that I can perform the tasks necessary to achieve successful exploitation of this international opportunity

**Table 6** (continued)

Construct/ indicators	
OFB2	I believe that I have the necessary knowledge to exploit this international opportunity successfully
OFB3	I think that exploiting this international opportunity would be a feasible business opportunity

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**Data availability** The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

**Code availability** Not applicable.

## Declarations

**Conflicts of interest** The authors have no relevant financial or non-financial interests to disclose.

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