Erasmus School of Economics

The relationship between entrepreneurial perceptions and entrepreneurial intention in Europe: The moderating role of age

Bachelor Thesis

International Bachelor Economics and Business Economics

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Abstract:

Prior research investigated the relationship between entrepreneurial perceptions and entrepreneurial intentions. However, there is no common consensus that defines the moderating role of age in these relationships. Therefore, this contribution aims to propose a new framework that will enable assessing the relationship between entrepreneurial perceptions and entrepreneurial intention with the moderating role of age. For this, survey data was collected from the Global Entrepreneurship Monitor (GEM) which measures entrepreneurial intention, perceived capability, perceived opportunity, perceived successful status of entrepreneurs, age, gender, and education. Out of the 80,692 survey responses collected from 19 European countries, only 52,322 answers were deemed valid. Using the binary logistic regression and the moderation analysis, this contribution found evidence for the positive associations between entrepreneurial intention and perceived opportunity, perceived capability, and the perception of the status of successful entrepreneurs. In addition to that, results indicate that age only positively moderates the relationship between the perceived capability and entrepreneurial intention, indicating that the older a person gets, the higher the effect of the perceived capability to influence the intention to engage in entrepreneurial activities. Future research should add to the proposed framework by including more personal and external characteristics to further understand how age shapes different entrepreneurial profiles.

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1. Introduction

Entrepreneurship is the process of discovering, evaluating, and exploiting different opportunities to create useful products and services for various end-users (Bohlmann et al., 2017; Shane & Venkataraman, 2000). It can open venues for successful careers (Branchet et al., 2011; Halvorsen & Morrow-Howell, 2017; Nyock Ilouga et al., 2014), mostly during periods of economic uncertainty (Funken & Gielnik, 2015). However, many authors indicate that the extent to which entrepreneurship can be attractive varies with age (Halvorsen & Morrow-Howell, 2017).

It is important to note that entrepreneurs are the essence of job creation in many countries (Sahut et al., 2015). This urges scholars, researchers, and policymakers to further deepen their understanding related to the personal profiles that have a high probability to engage in successful entrepreneurial activities. Understanding the characteristics of entrepreneurs will enable putting in place the necessary policies and infrastructure to help non-entrepreneurs become entrepreneurs, which itself will help to advance the economy (e.g., creating new job opportunities and creating more products/services). Moreover, identifying the impact of age on entrepreneurial intention will also enable focusing efforts and optimizing resource allocation to specific age segments. For instance, many individuals think of entrepreneurship as a career choice made by youth (Nyock Ilouga et al., 2014). However, Fairlie (2013) indicates that a large share of seniors, or individuals above 50 years old, consider entrepreneurship as a late-career alternative.

In psychological research, many authors highlight the importance of age in shaping the decision of engaging in entrepreneurial activities (Bohlmann et al., 2017). According to Baltes (1987), the psychological and physiological characteristics are enhanced or downgraded throughout the lifespan of individuals. For example, the older people get, the more some physical abilities decline. However, other abilities that include knowledge, skills, intelligence, and many others increase. The existing literature also suggests that age has a direct influence on people's motives, goals, and orientations (Truxillo et al., 2015).

Academics and scholars often assume that age is negatively correlated with engaging in entrepreneurial activities (Lévesque & Minniti, 2006). However, prior contributions mostly include age as a control variable, which makes its relationship with entrepreneurship ambiguous and not clear (Kanfer et al., 2013). Exceptions include papers that assessed the

mediating role of age in the relationship between entrepreneurship, venture growth (Lévesque & Minniti, 2006), business growth (Gielnik et al., 2017), and perceived opportunity (Bohlmann et al., 2017).

In addition to the age variable, various academics highlights the importance of different perceptions in shaping the entrepreneurial intention and behavior of individuals (Li et al., 2021). For instance, many authors indicate that having the ability to perceive new opportunities leads individuals to have a positive entrepreneurial intention or become entrepreneurs (Tripopsakul, 2018; Tsai et al., 2016). Additionally, other authors also indicate that having a positively perceived capability to start and manage a new business increases the individual's chance to become an entrepreneur (Peng et al., 2015). However, there is no clear consensus that explains if different entrepreneurial perceptions change over time or have different impacts based on the age group. Intuitively, the perception of self-capability might exhibit a higher influence on the intention to become an entrepreneur for seniors compared to the youngest segments. However, the perception of the status of successful entrepreneurs might exhibit more influence on youth compared to elderly people. For this, the current paper contributes to the existing literature by considering entrepreneurial perceptions and age when investigating entrepreneurial behavior.

Using the Global Entrepreneurship Monitor (GEM), data related to different entrepreneurial perceptions, entrepreneurial intention, and demographic variables from 19 European countries is collected to address the following question:

> *"Do entrepreneurial perceptions play a different role in the intention to engage in entrepreneurial activities when comparing the 50+ population to the population that is younger than 50 years old?"*

Specifically, this research investigates the impact that the perceived opportunity, perceived capability, and the perception of the status of successful entrepreneurs exhibit on entrepreneurial intention while assessing the role of age (e.g., comparing individuals younger than 50 years old and individuals that are 50 or more) in moderating these relationships (Ainsworth, 2015; Bohlmann et al., 2017). In addition to adding to the existing literature, answering this research question will enable having a deeper understanding of entrepreneurs' characteristics. It will help policymakers to implement the right strategies for each age segment and capture individuals that are most likely to become entrepreneurs in the future. For instance, if the perceived opportunity does not significantly motivate the oldest segment

to become entrepreneurs, regulatory bodies should not promote economic growth opportunities to this segment. Rather, than that, the regulatory bodies should make use of other strategies to encourage senior individuals to become entrepreneurs.

The rest of the paper is as follows. Chapter 2 will present the literature related to the link between entrepreneurial perception and the intention to engage in entrepreneurial activities. The same section will introduce the effect of age in moderating the relationship between entrepreneurial perceptions and entrepreneurial intention, will present the conceptual framework, and will develop the hypotheses that will be tested in a later section of the research. Chapter 3 will present the source of the data used in this study and the rationale behind the sample selection. While chapter 4 will define the main variables and the quantitative method, chapter 5 will present the results of the suggested model. Finally, chapter 6 will discuss and conclude the paper, highlight some of the limitations of the current work, and provide avenues for future work.

2. Theoretical framework

Entrepreneurship is any effort made to create a business startup that includes, but is not limited to, self-employment and the creation of a new business entity (Prince et al., 2021). It is important to highlight the diversity in entrepreneurship research as it attracts various researchers from various fields such as business administration, economics, and many others (Carlsson et al., 2013). These academics are amongst others focused on predicting personal profiles that are most likely to become entrepreneurs and propose frameworks that account for internal and environmental determinants (Autio et al., 2001; Ayalew & Zeleke, 2018; Mirjana et al., 2018; Saraih et al., 2018; Strydom et al., 2020; Tripopsakul, 2018). In this study, the focus is mainly on the relationship of personal characteristics with entrepreneurial intention.

This section presents an overview of the study of age in entrepreneurship, defines what is entrepreneurial intention, and presents the relationship between age and entrepreneurial intention (Section 2.1, 2.2. & 2.3). Following this, this chapter also develops the different hypotheses between the perceived opportunity and entrepreneurial intention with the moderating role of age (Section 2.4), between the perceived capability and entrepreneurial intention with the moderating role of age (Section 2.5), and between the perception of the status of successful entrepreneurs and entrepreneurial intention with the moderating role of age (Section 2.6). Finally, this chapter will also discuss the impact that some demographic

variables (e.g., gender and education) exhibit on entrepreneurial intention (Section 2.7) and present the conceptual framework (Section 2.8).

2.1.Entrepreneurial intention

Prior literature indicates that entrepreneurial intention (EI) is the most important determinant to predict start-up creation, which is the reason many scholars investigate the direct and indirect determinants that influence it (Martins et al., 2019; Tsai et al., 2016). According to Krueger and Carsrud (1993), identifying the determinants of EI is essential to understanding the entrepreneurial process. By definition, EI refers to the state of mind that comes before taking any measure to start an entrepreneurial activity (Esfandiar et al., 2019; Krueger et al., 2000). It also refers to the state of mind that shifts an individual's attention towards engaging in an entrepreneurial activity such as founding a new company (Moriano et al., 2011).

Initially, authors were mainly concerned about assessing the link between various personality traits and the intention to engage in entrepreneurial activities (McClelland, 1961). After this, the authors shifted their interest to identify the extent to which EI is affected by demographic variables such as age, education, and religion(Reynolds et al., 1994; Storey, 2016). However, these approaches were criticized by many authors for their conceptual limitations, their methodological limitations, and their assumptions related to the homogeneity of entrepreneurs (Gartner, 1988; Santos-Cumplido & Liñán, 2007; Veciana et al., 2005). Recent literature indicates that EI can be caused by many factors that include: perceived self-efficacy, perceived social norms, and knowledge in entrepreneurship (Liñán et al., 2010; Tsai et al., 2016).

Esfandiar et al. (2019) highlight that EI is best assessed through a combination of intention models, which forecasts the inception of new companies and entrepreneurial behavior, and the influence of individual factors (Krueger et al., 2000). The literature suggests that the most common intention models are the theory of planned behavior (TPB) and Shapero's model of the entrepreneurial event (SEE) (Esfandiar et al., 2019). The TPB has been extensively used in the entrepreneurship literature and is based on the premise that the attitude towards the behavior's outcome, the impact of surroundings (e.g., parents and friends), and the perceived behavioral control directly affect intention, which itself impact actual behavior (Ajzen, 1991). While the SEE model also consists of three main elements and suggests that individuals' perceived feasibility, perceived desirability, and propensity to act are all predictors of EI (Shapero & Sokol, 1982).

Many other contributions suggested new frameworks to predict EI (Krueger & Carsrud, 1993; Moriano et al., 2011; Samydevan et al., 2021; Shinnar et al., 2012; Tsai et al., 2016; Zhao et al., 2005). Tsai et al. (2016) propose a new framework that links the perceived capability to EI with the moderating role of gender, perceived opportunity, and fear of failure. Moreover, Ambad and Damit (2016) investigate the role of perceived relational support, perceived structural support, personal attitude, and perceived behavioral control in determining EI among undergraduate students in Malaysia.

In addition to assessing the role of perceived opportunity, self-efficacy/capability, subjective norms, perceived behavioral control, social recognition, and demographic variables in predicting EI, many authors introduced new variables that include entrepreneurial education (Fragoso et al., 2020), compatibility (Ezeh et al., 2020), role models (Hou et al., 2019), entrepreneurial passion (Hou et al., 2019; Vallerand et al., 2010).

The remaining part of the literature review will discuss the variables that are associated with EI. These variables include age as a moderating variable, perceived opportunity, perceived capability, perceived status as independent variables, and gender as well as education as control variables.

2.2. Age, entrepreneurship, and entrepreneurial intention

While several studies assessed the impact of gender as well as many other demographic variables in entrepreneurship research, literature on the influence of age is still limited (Ng & Feldman, 2010). The contributions that investigate the role of age relate mainly to job attitudes (Ng & Feldman, 2010), entrepreneurship behavior, and entrepreneurship motivation (Minola et al., 2015).

Many authors indicate that senior individuals (e.g., over 50 years old) have more skills, capabilities, means, and opportunities to start their businesses (Curran & Blackburn, 2001; Hatak et al., 2015). Yet, prior contributions also indicate that seniors take less initiative to engage in entrepreneurial activities compared to the younger groups (Curran & Blackburn, 2001; Kautonen, 2008).

Lévesque and Minniti (2006) investigated the role that age plays in shaping entrepreneurial careers and elucidate the concept throughout the opportunity cost of time. The authors found a negative association between age and entrepreneurial activities because the older individuals are, the less motivated they are to invest capital, knowledge, and time in projects or

businesses that are uncertain or have an indeterminate payback period (Fung et al., 2001; Lévesque & Minniti, 2006). In addition to that, Parker (2009), Boden (1999), and Blanchflower (2004) indicate that seniors often argue that converting to self-employment is a risky option, requires more effort, and requires long working hours. Therefore, the older a person gets, the lower the chances to become an entrepreneur (Arenius & Minniti, 2005; Carter et al., 2001). In the work of Axelrad and Tur-Sinai (2021), the authors indicate that out of 16,412 people from 18 different countries, only an insignificantly small portion of individuals switch to self-employment between 50 years old and retirement age. According to the same source, the main factors that limit switching careers at an old age relate to health issues and marital status.

While many researchers were interested in assessing the determinants of EI, only a few attempted to understand the true impact of age (Bohlmann et al., 2017; Sahinidis et al., 2021). The age of business owners and entrepreneurs is significantly ignored in predicting EI (Gielnik et al., 2012, 2018; Kautonen et al., 2013; Sahinidis et al., 2021). Among the most recurring results, most authors found that age and EI are negatively associated (Curran & Blackburn, 2001; Gielnik et al., 2012; Kautonen, 2008; Lévesque & Minniti, 2006; Simoes et al., 2016), others found a positive association between the two variables (Arenius & Minniti, 2005; Parker, 2009), and the last group of authors found no relationship (Ayalew & Zeleke, 2018; Nguyen, 2018; Strydom et al., 2020).

For example, in the contribution of Tsai et al. (2016), authors found evidence of the negative impact that age exhibits on both the perceived opportunity and EI. This aligns with the contribution of Sahinidis et al. (2021). This last paper compared the impact of different age categories on EI. Results indicate that the 26-34 age group has a relatively higher EI compared to the rest of the age groups, which supports the fact that youth are more likely to have a positive EI compared to the older segments. Finally, Tripopsakul (2018) found that age negatively impacts EI using Polish and Thai samples. both Poland and Thailand. Since the majority of prior studies found that age has a negative relationship with EI, the following thesis hypothesizes that:

- **H_1: Age has a negative association with EI.**

2.3. Perceived opportunity

Feasible opportunities are the root of all entrepreneurial activities (Stevenson & Jarillo, 2007). However, perceived opportunities are subjective measures as they differ from one individual to another (Stevenson & Jarillo, 2007), and as they are assessed based on multiple criteria (Esfandiar et al., 2019). For instance, Shapero and Sokol (1982) suggest that the perceived entrepreneurial opportunity is based on both the extent of its desirability and feasibility relative to the individual. Generally, Shane and Venkataraman (2000) define an opportunity as any situation where the cost of products, services, and raw materials is lower than their selling price.

Many contributions found evidence related to the association between perceived opportunity and EI (Bohlmann et al., 2017; Tripopsakul, 2018; Tsai et al., 2016). For instance, the study of Bohlmann et al.(2017) indicates that the perceived opportunity positively impacts entrepreneurial engagement. But in the contribution of Tsai et al. (2016), empirical findings indicate that the perceived capability has a significant positive impact on males in Taiwan and has a significant positive impact regardless of gender in China. Also, the contribution of Xuan (2020) found a significant positive indirect effect of perceived opportunity on EI. Hence, this study suggests the following hypothesis:

- ***H_{2a}: The perceived opportunity has a positive relationship with EI.***

The literature also discusses the link between age and perceived entrepreneurial opportunities (Bohlmann et al., 2017). Commonly, entrepreneurial motivation decreases throughout the lifespan of individuals, which has both a direct and indirect impact on the perceived opportunity (Carstensen et al., 1999; Henry et al., 2017; Zacher & Frese, 2009). According to Bohlmann et al. (2017), the perception of opportunity is highly correlated with age. To note, external or contextual factors include environmental constraints that might either increase or lower the perceived opportunity (Bohlmann et al., 2017). For instance, Kautonen et al. (2011), and Hershey et al. (2002) suggest that in Western societies, retirement is usually the most preferred option after the age of 60. Hence, the older individuals get, the fewer opportunities are perceived. On the other hand, internal or individual age-related factors such as the perceived time left and information processing time, usually lead to a decrease in the perceived opportunity over time (Bohlmann et al., 2017). It is important to highlight that prior literature failed to identify if the perceived opportunity explains EI of the elderly in the same way as it affects young people, in other words, if age moderates this relationship. For

instance, Bohlmann et al. (2017) found evidence that the perceived opportunity negatively mediates the relationship between age and EI. To note, the prior research investigated the mediation role and not the moderating role of age.

With many years of experience, seniors most of the time specialize in specific industries, which makes them know the market needs in the industry where they perform, know the suppliers, and sometimes know their clients' profiles. Therefore, perceiving new opportunities might not have a strong impact on seniors' EI as they usually take advantage of their backgrounds to start businesses in areas where they specialize. However, young individuals are not as experienced as individuals that are 50 years old or more. This means that perceiving new opportunities is essential to starting a business for youth. Based on this, it can be concluded that perceived opportunities are more important for young individuals compared to seniors. In other words, perceived opportunities exhibit a strong influence on EI of individuals that are younger than 50 compared to older individuals. Hence, in this study, it is hypothesized that:

- ***H_{2b}: Age negatively moderates the relationship between the perceived opportunity and EI.***

2.4.Perceived capability

The perceived capability, or self-efficacy, is an old concept borrowed from the social learning theory (Bandura, 1977). It is defined as the belief in one's capability to meet a demand for a situation through monitoring self-motivation, making use of cognitive resources (e.g., intelligence and experience), and doing a set of needed actions (Wood & Bandura, 1989). In entrepreneurship, the perceived self-efficacy is defined as the degree of awareness of an individual's competency, and the belief in one's capability of becoming an entrepreneur in the future (Krueger et al., 2000; Prabhu et al., 2012). This aligns with the definition of Barbosa et al. (2007) that further adds the condition of maintaining an optimistic view while realizing entrepreneurial goals.

According to Liñán and Chen (2009), Autio et al. (2001), Kickul, and Gundry (2002), the perceived capability is the ability of an individual to identify, establish, and develop business ideas, in addition to realizing opportunities. Self-efficacy enables measuring individuals' confidence in completing jobs effectively and successfully (Dao et al., 2021). Also, it can be used as a proxy to measure the performance within a group (Esfandiar et al., 2019). The

existing literature indicates that the perceived capability can be used to predict individuals' EI (Franke & Lüthje, 2004) and whether a person will become a real entrepreneur or not (Chen et al., 1998).

In the study of Tsai et al. (2016), the authors used the Global Entrepreneurship Monitor (GEM) dataset to assess the impact of perceived capability on entrepreneurial intention. Results indicate that the perceived capability positively impacts EI. This aligns with the findings of Peng et al. (2015) as the authors found that self-efficacy has a significant and positive impact on farmers in China. A similar relationship is also found in other countries (Bohlmann et al., 2017; Tripopsakul, 2018).

Many authors investigated the impact of self-efficacy on EI among university students (Saraih et al., 2018). For instance, Saraih et al. (2018) found that self-efficacy is highly associated with EI while studying 345 Malaysian students. Similar results were confirmed when testing the same relationship on Nigerian students (Iro-Idoro & Evelyn, 2015), US students (Shinnar et al., 2014), and Indonesian students (Rachmawan et al., 2015).

Based on the discussed literature, this research hypothesizes that:

- ***H_{3a}: The perceived capability has a positive association with EI.***

It is important to note that no contribution analyzed the moderating role of age in the relationship between perceived capability and EI. It is common sense that the level of knowledge and capability changes over time (Bohlmann et al., 2017). For many authors, the older a person gets the higher his/her knowledge (Salthouse, 2012) due to the larger years of experience and variety of job positions (Bohlmann et al., 2017). Hence, seniors are more likely to start a business as they have all the necessary skills acquired through prior years of experience. However, the youngest segment has fewer years of experience and is less secure about starting an entrepreneurial journey. This indicates that the perceived capability has a stronger association with EI for seniors when compared to non-seniors. In the context of this study, the moderating role of age in the link between perceived capability and EI is investigated, and it is hypothesized that:

- ***H_{3b}: Age positively moderates the association between perceived capability and EI.***

2.5. Perception of the status of successful entrepreneurs

EI is highly affected by the social and public images that individuals have about actual entrepreneurs (Rodrigues et al., 2020). In the context of this status, the perception of the status of successful entrepreneurs refers to the degree of respect that this type of person receives from other individuals. According to Mirjana et al. (2018) and Shepherd and Krueger (2017), it is of prime importance that individuals perceive entrepreneurship as both personally and socially desirable before deciding to become entrepreneurs. Fernandes et al. (2018) also add that if individuals believe that their actions will have a positive impact (e.g., on surroundings and community), they will be highly likely motivated to become entrepreneurs.

In a study in Poland, the perception of achieving a higher status was not found to impact EI. In a sample of 3000 Thai citizens, the perception of the successful status of entrepreneurs positively impacts EI (Tripopsakul, 2018). This aligns with the findings of many authors who also found a significant positive relationship between external perceptions such as the perceived success of entrepreneurs and EI (Martínez-González et al., 2022; Mitchell et al., 2000; Mueller et al., 2002).

Based on the discussed literature, this thesis hypothesizes the following:

- ***H_{4a}: The perception of the status of successful entrepreneurs has a positive relationship with EI.***

To the author's knowledge, the relationship between the perception of entrepreneurs' high status and age has not been addressed in prior studies. In addition to that, no relationship between the perception of the status of successful entrepreneurs and EI with the moderating role of age has been investigated.

According to Corcoran et al. (2011), people learn about themselves through social comparison. However, Goethals and Darley (1987) indicate that the older people get, the less is their tendency to engage in all forms of social comparison. It is very common to find young individuals setting goals and objectives that relate to being successful and respected. For instance, many young people want to have bigger houses, better transportation means, and more luxurious activities in their lives, which is not the case for most seniors. This might be explained by the lack of experience and responsibility of youth. For this, it is assumed in this research that the perception of successful entrepreneurs exhibits more influence on

individuals' decision to engage in entrepreneurship for people that are younger than 50 years old compared to 50+ people. This is formulated as:

- ***H_{4b}: Age negatively moderates the relationship between the perception of the status of successful entrepreneurs and EI.***

2.6. Entrepreneurship, gender, and education

The existing literature indicates that men consider entrepreneurial careers more than women (Veciana et al., 2005), and usually have a higher perception of personal efficacy (Langowitz & Minniti, 2017; Veciana et al., 2005; Zhao et al., 2005). In addition to that, many contributions explain the reason men are more dominant in entrepreneurship (Davidsson, 2006; Delmar & Davidsson, 2000). For instance, the contribution of Camelo-Ordaz et al. (2016) highlights that using the GEM dataset, women reported high fear of failure levels compared to men in all countries except Japan, which aligns with the contributions of Kwong et al. (2009), Neelakantan (2010), and Wagner (2006).

Scholars and academics found evidence that EI is directly influenced by gender (Koellinger et al., 2013; Malach-Pines & Schwartz, 2008). In the study of Shinnar et al. (2012), the authors found evidence that gender moderates the relationship between EI, the perceived fear of failure, and the lack of competency in some countries. Empirical findings indicate that the perceived lack of competency and risk of failure exhibit more influence on the intention to engage in entrepreneurial activities for women compared to men in both Belgium and the US. In the case of Spain, the authors used data from 21,697 non-entrepreneurs and 2,899 entrepreneurs (Camelo-Ordaz et al., 2016). Results indicate that gender significantly impacts EI of non-entrepreneurs, which is not the case for entrepreneurs. But in the contribution of Tripopsakul (2018), the author found no impact of gender on EI in both Poland and Thailand.

In addition to gender, academics and scholars also studied the role of education or entrepreneurial education in entrepreneurial behavior (Hou et al., 2019). Peterman and Kennedy (2017) indicate that high levels of education lead to enhancing the skills related to the identification of market opportunities and calculating their associated risks. Hence, the higher the chances to engage in entrepreneurial activities. For instance, Hou et al. (2019) found evidence that higher levels of education positively impact entrepreneurial intention among university students in China. This aligns with the contributions of Rideout, Gray (2013), and Chen et al. (1998).

The current research will also include gender and educational level as control variables and will assess their impact on EI in the case of European individuals.

2.7. Conceptual framework

The above sections developed the different hypotheses that will be used to investigate the relationship between entrepreneurial perceptions and entrepreneurial intention with a focus on the moderating role of age. Therefore, the proposed conceptual framework of the study is summarized in the following diagram.

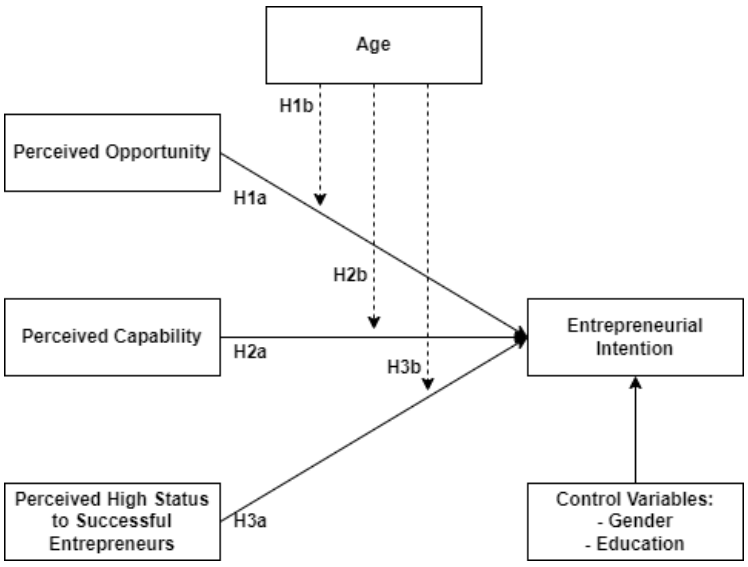

Figure 1: The proposed conceptual framework

3. Data and sample selection

The following chapter discusses the source of the data that will be used to assess the hypotheses that are developed in the prior section. In addition to that, this section will also present the sample selection process.

3.1.Data sources

To investigate the impact of different entrepreneurial perceptions on EI with a moderating role of age, the data was collected from the Global Entrepreneurship Monitor (GEM). This latter organization distributes surveys related to entrepreneurship to both entrepreneurs and non-entrepreneurs all over the world. The GEM collects data on an individual basis throughout in Adult Population Survey (APS) and covers more than 180 countries, with a minimum response rate of at least 2000 individuals per country (GEM, 2022c).

For more than 22 years, the GEM organization collects data related to entrepreneurship in a way to capture various entrepreneurial variables. Generally, the dataset measures different entrepreneurial perceptions (e.g., perceived capability), entrepreneurial attitudes (e.g., attitude towards seeing entrepreneurs), and entrepreneurial intentions (e.g., the intention to start a business in the future) (GEM, 2022a).

In addition to that, the GEM dataset also includes variables that capture entrepreneurial activity, respondents' attributes (e.g., demographic variables such as age, education, and gender; motivational aspects), cultural/social/economic/political context, and social values associated to entrepreneurs (GEM, 2022b).

3.2.Sample selection

To answer the research question, the data collected from the GEM dataset is from the year 2018, and initially covered 19 European countries that are: Russia, Greece, Netherlands, France, Spain, Italy, Switzerland, Austria, United Kingdom, Sweden, Poland, Germany, Luxembourg, Ireland, Cyprus, Bulgaria, Croatia, Slovakia, and Slovenia.

Initially, the total number of observations accounted for 80,692 responses. However, many questions enabled respondents to have the option of refusing to answer. In the context of this study, the data was adjusted in a way to get rid of responses with missing values and showcase refusal to answer at least one specific question. After this adjustment, the total number of observations decreased by almost 34% to account for 53,322 valid responses. It is

important to highlight that Luxembourg did not have the age variable, which led to omitting this country from the analysis.

Table 1: Number of APS individual responses per country

	Number of observations (Initial)	Number of observations (Cleaned data)
Russia	2,002	1,349
Greece	2,000	1,867
Netherlands	2,258	1,586
France	2,002	1,533
Spain	23,100	16,849
Italy	2,003	1,513
Switzerland	2,448	1,789
Austria	4,540	2,205
United Kingdom	9,002	5,592
Sweden	5,078	1,788
Poland	8,000	4,914
Germany	4,250	3,406
Luxembourg	2,008	0
Ireland	2,001	1,513
Cyprus	2,000	1,689
Bulgaria	2,000	1,117
Croatia	2,000	1,357
Slovenia	2,000	1,373
Slovakia	2,000	882
Total number of observations	**80,692**	**52,322**

3.2.1. Participants and procedures

As previously mentioned, the data for the year 2018 is collected from the GEM dataset. More specifically, from the APS. This dataset is widely recognized by various researchers and reflects past and present development in the entrepreneurship field (Bohlmann et al., 2017). The data used in this study was collected from people from 18 different European countries between 18 and 96 years old with a mean age of 43.49 years (standard deviation: 14.28 years). It is important to note that the data collection process is undertaken in each country by professional companies that are always supervised by research institutes. In addition to that, all the parties that were involved in the data collection are under the supervision of the global

entrepreneurship research association (GERA) (Bohlmann et al., 2017). This latter organization makes sure to standardize data on an international level (e.g., the similarity of questions and translation). The dataset is mostly known for its reliability among scholars and a large number of observations, which makes it the most used database in entrepreneurship research (Bergmann et al., 2014; Ho & Wong, 2006).

4. Methodology

The following chapter discusses the variables that will be used to investigate both the relationship between entrepreneurial perceptions and EI and the moderating role of age in such relationships. Therefore, the following section will present the main variables (dependent vs. independent variables), moderating variables, and control variables. Following this, this chapter will also develop a model for each hypothesis and discuss the statistical method that will be used to analyze them.

4.1.Variables

4.1.1. Main variables

4.1.1.1. Entrepreneurial intention (EI)

Entrepreneurial intention indicates if a respondent is willing to start a business in the upcoming three years or not (Khursheed et al., 2018). To measure individuals' intentions, the following question is used. "Do you intend to start a business in the next three years?" (Puriwat & Tripopsakul, 2015). If the respondent indicates that s/he intends to start a business in the upcoming three years, a value of 1 is assigned to EI variable. In the case where the respondent indicates that s/he does not intend to start a business in the coming three years, a value of 0 is assigned to EI variable.

4.1.1.2. Perceived opportunity (PO)

Perceived opportunity is measured by assessing whether the respondent can identify an opportunity in the market in their area of living (Khursheed et al., 2018). It is measured by asking each respondent the following question: "In the next 3 months, will there be good opportunities for starting a business in the area where you live?" (Bohlmann et al., 2017). This variable simply shows whether a given respondent can recognize a business opportunity where to invest or not. In the case where the individual recognizes an opportunity, a value of 1

is assigned to the PO variable. However, if the individual does not recognize any opportunity, a value of 0 is assigned to the PO variable.

4.1.1.3. Perceived capability (PC)

Concerning the perceived capability, which is also referred to in prior literature as perceived skills or perceived self-efficacy, it measures the extent to which respondents feel they have the necessary capability to start and manage a business in whatever field (Khursheed et al., 2018). This variable is measured by agreeing or not agreeing to the following statement: "I have the knowledge, skill, and experience required to start a new business?" (Bohlmann et al., 2017). This statement has only two close-ended answers that are: "yes" or "no". The data is coded in a way that yes is assigned a value of 1, and no is assigned a value of 0. Prior researchers used this scale and validated it (Levie & Autio, 2008).

4.1.1.4. Perception of the status of successful entrepreneurs (STATUS)

Concerning the perception of the status of successful entrepreneurs, it measures the extent to which respondents agree or disagree with the statement that entrepreneurs have a high status within their countries. This variable is binary and is measured using the following question: "In my country, those successful at starting a new business have a high level of status and respect." (GEM, 2022b). If the respondent agrees with this prior statement, a value of 1 is assigned. But when the respondent does not agree that successful entrepreneurs have a high level of status and respect, a value of 0 is assigned. Compared to the previously discussed variables, this one is the least used determinant of EI in the literature.

4.1.2. Moderating variable

As shown in the literature review, the age variable will be used as a moderator to assess the relationship between the perceived opportunity and EI, the perceived capability and EI, and the perceived high status of entrepreneurs and EI. To note, the GEM data provides the exact age of each respondent (Bohlmann et al., 2017; Khursheed et al., 2018; Levie & Autio, 2008; Puriwat & Tripopsakul, 2015). But as this study compares seniors and non-senior individuals, the age variable was converted to a binary variable where 0 = individuals younger than 50 years old, and 1 = individuals that are 50 years old or more.

4.1.3. Control variables

The following thesis uses two main control variables that are assumed to have a direct impact on EI as discussed in section 2.7. First, gender is a binary variable where 0 = males and 1 = females. Education was assessed using nine answers that range from 0 (no education) to 8 (Doctoral education).

4.2.Analytical techniques

The following study investigates the relationship between entrepreneurial perceptions and EI with the moderating role of age. To check the different hypotheses developed in chapter 2, binary logistics regression and moderation analyses will be used.

The binary logistics regression is used because of the nature of the variables in this study. This latter type of statistical analysis is used to identify the underlying causes and effects analysis for variables that consists of a binary response (e.g., male vs. female)) (Srimaneekarn et al., 2022), which is the case of this study as EI has either the value of 0 or 1. More specifically, this method is suitable for using different factors to predict a response probability of a new case/event (Bangdiwala, 2018). This method requires fewer assumptions to be met compared to the linear regression analysis, which includes no perfect multicollinearity (Harris, 2021).

Assuming that P represents the probability of an event and (1-P) represents the probability of the non-occurrence of the event of concern. The logit function, which is the most commonly used with this type of data (Srimaneekarn et al., 2022), is the natural log of the odds ratio (OR). This latter is simply the ratio of the probability of occurrence over the probability of non-occurrence as depicted in the following formula:

$$ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 X_{1j} + \beta_2 X_{2j} + \beta_3 X_{3j} + \cdots \quad (1)$$

Where:

β_0: is the intercept.

β_j: is the logit coefficient before removing the natural log effect. Where j corresponds to each variable in the model.

X_{ji}: represents each variable j in the model, where i represents the individual's observations.

But to derive the real probability of the event of interest, the formula should be re-written to become:

$$\frac{p}{1-p} = e^{\beta_0} + e^{\beta_1 X_{1i}} + e^{\beta_2 X_{2i}} + e^{\beta_3 X_{3i}} + \cdots \quad (2)$$

Or

$$P = \frac{e^{\beta_0+\beta_1 X_{1i}+\beta_2 X_{2i}+\beta_3 X_{3i}+\cdots}}{1+e^{\beta_0+\beta_1 X_{1i}+\beta_2 X_{2i}+\beta_3 X_{3i}+\cdots}} \quad (3)$$

Finally, the statistical form of the binary logistic regression model can be rearranged to become:

$$P = \frac{1}{1+e^{-(\beta_0+\beta_1 X_{1i}+\beta_2 X_{2i}+\beta_3 X_{3i}+\cdots)}} \quad (4)$$

With regards to the moderating effect, it enables identifying if the relationship between two variables is moderated by a third variable. This type of analysis is made by including an interaction term between the moderator and the independent variable as a multiplication. Hence, the models that will be analyzed in this thesis can be depicted and written using the following formulas and graphs.

4.3.Models

The current section presents the different models that will be used to assess the different hypotheses discussed in chapter 2. Each model includes the control variables discussed in chapter 3 section 3.1.3.

4.3.1. Model A

The first relationship that will be assessed in this research is the direct impact of age on EI as depicted in figure 2.

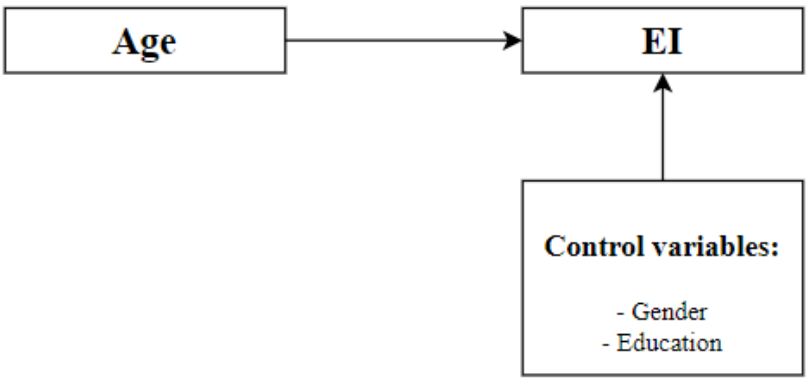

Figure 2: Depiction of hypothesis H_1

The following model is used to assess the direct impact of age on EI:

$$P(EI) = \frac{1}{1+e^{-(\beta_0+\beta_1 Age_i+\beta_2 gender_i+\beta_3 education_i)}} \qquad \text{(Model A)}$$

4.3.2. Model B

The second relationship that will be assessed in this research is the impact of the perceived opportunity on EI with the moderating role of age. For this, model B1 and model B2 can be depicted such as:

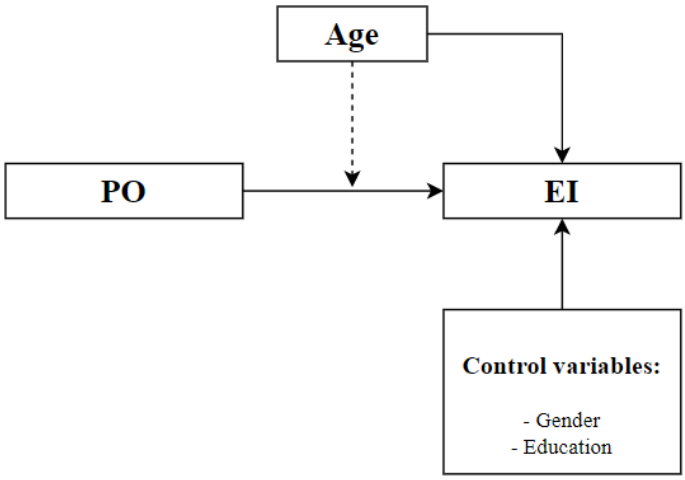

Figure 3: Depiction of hypotheses H_{2a} and H_{2b}

The following model is used to test the impact of perceived opportunity on EI:

$$P(EI) = \frac{1}{1+e^{-(\beta_0+\beta_1 PO_i+\beta_2 Age_i+\beta_3 gender_i+\beta_4 education_i)}} \qquad \text{(Model B1)}$$

But to test for the moderating effect of the age in the same relationship, the following model is used:

$$P(EI) = \frac{1}{1+e^{-(\beta_0+\beta_1 PO_i+\beta_2 Age_i+\beta_3 gender_i+\beta_4 education_i+\beta_5 PO*AGE_i)}} \quad \text{(Model B2)}$$

4.3.3. Model C

The second relationship that will be investigated in this thesis is the link between perceived capability and EI with the moderating role of age (Figure 4).

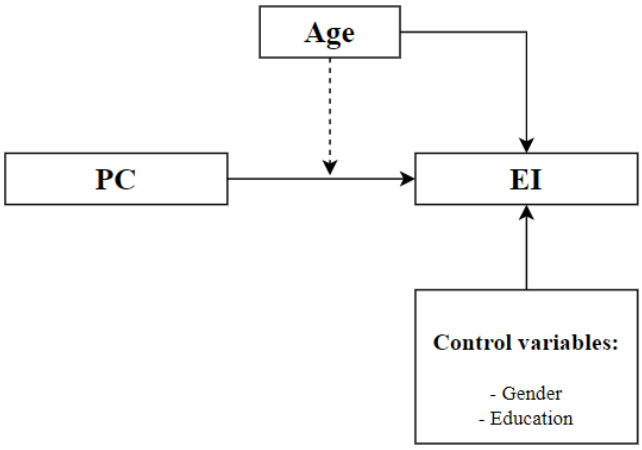

Figure 4: Depiction of hypotheses H_{3a} and H_{3b}

The following model is used to test the impact of perceived capability on EI:

$$P(EI) = \frac{1}{1+e^{-(\beta_0+\beta_1 PC_i+\beta_2 Age_i+\beta_3 gender_i+\beta_4 education_i)}} \quad \text{(Model C1)}$$

To assess the moderating role of the age in the relationship between PS and EI, the next model is used:

$$P(EI) = \frac{1}{1+e^{-(\beta_0+\beta_1 PC_i+\beta_2 Age_i+\beta_3 gender_i+\beta_4 education_i+\beta_5 PS*AGE_i)}} \quad \text{(Model C2)}$$

4.3.4. Model D

The impact of status on EI with the moderating role of age is also investigated in this research as discussed in chapter 2 (Figure 5).

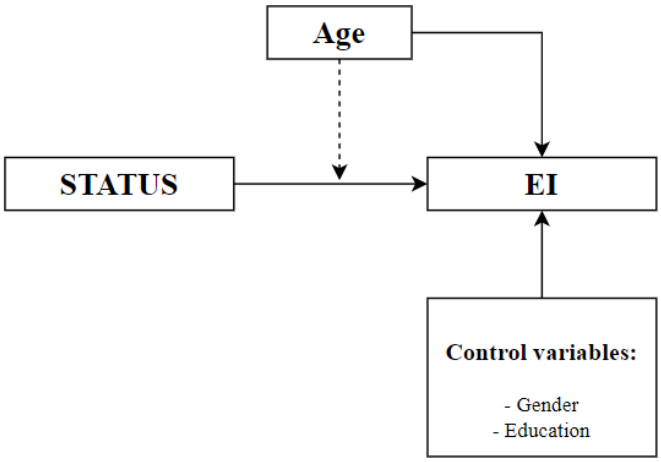

Figure 5: Depiction of hypotheses H_{4a} and H_{4b}

To investigate the relationship between the perception of the status of successful entrepreneurs and EI, the following model is used:

$$P(EI) = \frac{1}{1+e^{-(\beta_0+\beta_1 STATUS_i+\beta_2 Age_i+\beta_3 gender_i+\beta_4 education_i)}} \qquad \text{(Model D1)}$$

For the moderating role of the age in the relationship between STATUS and EI, it is given by the following model:

$$P(EI) = \frac{1}{1+e^{-(\beta_0+\beta_1 STATUS_i+\beta_2 Age_i+\beta_3 gender_i+\beta_4 education_i+\beta_5 STATUS*AGE_i)}} \qquad \text{(Model D2)}$$

5. Results

The current chapter shows the descriptive statistics of the valid survey responses. In addition to that, this chapter also presents the assumptions checking before performing the binary logistic regression and validates the models. Finally, the chapter showcases the results of the models.

5.1.Descriptive statistics

The 52,322 valid answers are based on respondents from 18 European countries who have different educational levels (Table 2). According to the survey, 1.82% of respondents have no education or pre-primary education at maximum, 9.69% have either primary education or first stage of basic education, 15.26% have the second stage of basic education or lower secondary, 32.11% achieved secondary education, 12.10% have a high school diploma, 1.37% have short-cycle tertiary education, 19.16% have bachelor's degrees, 7.56% have master's degrees,

and 0.92% of total respondents have a doctorate. These respondents account for 51% of males and 49% of females, with almost 63% of them younger than 50 years old.

60.11% of total respondents indicated that they did not perceive any potential business idea in the upcoming 6 months, which is the opposite of the remaining 39.89%. For the perceived self-efficacy or perceived capability, only 46.34% of total respondents believe they have the necessary skills to start a business. The survey indicates that almost 65% perceive successful entrepreneurs as being more respected and having a high-status level, and only 10.37% that want to start a business in the upcoming three years.

Table 2: Descriptive statistics (n = 52,322)

Item	Question	Response	Number of respondents	% of total population
Age	What is your age?	Younger than 50 years old	32,782	62.65%
		50+ years old	19,540	37.35%
Gender	What is your gender?	Male	26,585	50.81%
		Female	25,737	49.19%
Education	What is your educational level?	Pre-primary education	953	1.82%
		Primary education or the first stage of basic education	5,072	9.69%
		The lower secondary or second stage of basic education	7,983	15.26%
		(Upper) secondary education	16,803	32.11%
		Post-secondary non-tertiary education	6,333	12.10%
		Short-cycle tertiary education	717	1.37%
		Bachelor or equivalent	10,025	19.16%
		Master or equivalent	3,953	7.56%
		Doctor or equivalent	483	0.92%
EI	Do you intend to start a business in the next three years?	Yes	46,894	89.63%
		No	5,428	10.37%
PO	In the next 3 months, will there be good opportunities for starting a business in the area where you live?	Yes	31,452	60.11%
		No	20,870	39.89%
PC	I have the knowledge, skill, and experience required to start a new business?	Yes	28,076	53.66%
		No	24,246	46.34%
STATUS	In my country, those successful at starting a new business have a high level of status and respect.	Yes	18,550	35.45%
		No	33,772	64.55%

5.2.Models' diagnosis and models' fit

Before performing the binary logistic regression, it is of prime importance to meet certain assumptions of the models. In addition to that, the model fit of the models that will be presented in section 5.3, is assessed in the following sub-sections.

5.2.1. Correlations

The Spearman correlation analysis is conducted and is summarized in table 3. Based on the analysis, all correlations between the variables are significant under a 1% significance level. The correlation results indicate that age and gender are negatively correlated with EI, PO, PC, and STATUS variables. This means that men and individuals that are younger than 50 years old are more likely to have a positive EI, PO, PC, and STATUS compared to women and 50+ individuals. However, a positive correlation is found between the educational level and EI, PO, PC, and STATUS.

Table 3: Spearman's rho correlation coefficients (n = 52,322)

	EI	**PO**	**PC**	**STATUS**	**Education**	**Gender**	**Age**
EI	-						
PO	0.12**	-					
PC	0.17**	0.19**	-				
STATUS	0.03**	0.12**	-0.03**	-			
Education	0.08**	0.20**	0.12**	0.07**	-		
Gender	-0.06**	-0.06**	-0.15**	-0.02**	0.02**	-	
Age	-0.13**	-0.04**	-0.04**	-0.02**	-0.06**	0.03**	-
**. Correlation is significant at the 0.01 level (2-tailed).							

5.2.2. Multicollinearity analysis

Many contributions indicate that there should be no multicollinearity among the variables in binary logistic regression (Stoltzfus, 2011). For this, and using multicollinearity statistics, the tolerance for each variable, given that EI is the dependent variable, was at least 0.919. As a rule of thumb, the tolerance should be at least 0.1 to show the absence of multicollinearity, which is confirmed in Table 4. This is further confirmed by the variance inflation factor (VIF), that have low values. Normally, VIF values of less than 10 indicate the absence of multicollinearity (Salmerón et al., 2018), which is the case for these variables.

Table 4: Multicollinearity analysis

Independent variable: EI	Collinearity Statistics	
	Tolerance	VIF
EDU	0.948	1.055
PO	0.919	1.088
PC	0.934	1.070
STATUS	0.979	1.021
Gender	0.974	1.027
Age	0.994	1.006

5.2.3. Other assumptions checking

Other assumptions of the binary logistic regression include having a large sample size. According to Srimaneekarn et al. (2022), 50 events or observations is the minimum acceptable sample size for the selected method. In the context of this study, and as it is previously mentioned, the sample size accounts for 52,322. This number is considered very high.

5.3.Estimation results

Table 6 summarizes the regression results of the binary logistic models discussed in chapter four. The table shows the resulted coefficients of the model, the standard error, and the odds ratio (OR), which is the exponential of the coefficient. An OR lower than 1 indicates that as the predictor increases, the event is less likely to occur and vice versa.

According to the contribution of Hemmert et al. (2016), a Nagelkerke R-square between 0.05 and 0.25 is acceptable in social sciences. In the context of this study, the resulted models have Nagelkerke R-Squares with values between 0.054 and 0.101, with the highest model fit for both model C1 and model C2. In addition to that, all the log-likelihood values are high, which confirms the fitness of the models.

The results of model A indicate that there is a negative relationship between age and EI ($\beta = -0.968$, $OR = 0.380$, $p < 0.01$). The resulted OR is less than 1, which indicates that as the age increases, EI is less likely to be positive, which supports H1.

Concerning model B1, results indicate that PO is positively associated with EI ($\beta = 0.645$, $OR = 1.906$, $p < 0.01$), and the resulted OR suggests that when an individual perceives an opportunity, the more likely his/her EI will be positive. This supports H2a. However, model

B2 showed that age did not moderate the relationship between PO and EI ($\beta = 0.027$, OR = 1.027, $p > 0.10$). Therefore, hypothesis H2b is rejected.

With regards to model C1, results indicate that the relationship between PC and EI is positive ($\beta = 1.079$, OR = 2.941, $p < 0.01$). This means that having a positive PC increases the probability of EI to be positive as well, which supports H3a. The results of model C2 indicate that age positively moderates the relationship between PC and EI ($\beta = 0.297$, OR = 1.346, $p < 0.01$), which supports hypothesis H3b.

When investigating the association between STATUS and EI, model D1 indicates that a significant positive relationship exists between these variables ($\beta = 0.121$, OR = 1.128, $p < 0.01$), which supports H4a. However, model D2 found evidence to reject H4b ($\beta = -0.078$, OR = 0.925, $p > 0.10$), which originally hypothesized that age negatively moderates the relationship between STATUS and EI.

Finally, the gender variable resulted in a negative and significant coefficient in all the models of the study. This confirms that males are more likely to have a positive EI compared to females. In addition to that, the education variable exhibits a positive and significant relationship with the dependent variable in all models. This means that having a higher educational level increases the chance for an individual to have a positive EI.

Table 6: Binary logistic regression estimation results for all models (Independent variable: EI)

	Model A			Model B1			Model B2			Model C1			Model C2			Model D1			Model D2		
	Coef.	S.E.	OR	Coef.	S.E.	OR	Coef.	S.E.	OR	Coef.	S.E.	OR	Coef.	S.E.	OR	Coef.	S.E.	OR	Coef.	S.E.	OR
Constant	-1.76***	0.05	0.17	-2.00***	0.06	0.14	-1.99***	0.06	0.14	-2.50***	0.06	0.08	-2.45***	0.06	0.09	-1.84***	0.06	0.16	-1.85***	0.06	0.16
Age	-0.97***	0.04	0.38	-0.96***	0.04	0.39	-0.97***	0.05	0.38	-0.96***	0.04	0.38	-1.17***	0.07	0.31	-0.97***	0.04	0.38	-0.92***	0.06	0.40
PO				0.65***	0.03	1.91	0.64***	0.03	1.90												
PO*Age							0.03	0.07	1.03												
PC										1.08***	0.03	2.94	1.02***	0.04	2.77						
PC*Age													0.30***	0.08	1.35						
STATUS																0.12***	0.03	1.13	0.14***	0.04	1.15
STATUS*Age																			-0.078	0.08	0.93
Gender	-0.43***	0.03	0.65	-0.39***	0.03	0.68	-0.39***	0.03	0.68	-0.28***	0.03	0.76	-0.28***	0.03	0.76	-0.42***	0.03	0.66	-0.42***	0.03	0.66
Education	0.13***	0.01	1.14	0.10***	0.01	1.10	0.10***	0.01	1.10	0.10***	0.01	1.11	0.10***	0.01	1.11	0.13***	0.01	1.14	0.13***	0.01	1.14
Log likelihood	33472.86			33002.97			33002.97			32238.31			32224.46			33457.68			33456.61		
Nagelkerke R-Square	0.054			0.072			0.072			0.101			0.101			0.055			0.055		

*p<0.1; **p<0.05; ***p<0.01

6. Discussion & Conclusion

Entrepreneurs are the core of job creation in many economies (Sahut et al., 2015). Therefore, understanding the personal profiles that are more likely to become entrepreneurs can help policymakers to put in place the necessary policies and efficiently allocate resources to accompany them. For this, the current research proposes a new framework to assess the role of entrepreneurial perceptions in predicting EI of Europeans.

According to prior literature, the age of entrepreneurs was significantly ignored in predicting EI (Gielnik et al., 2012, 2018). Also, previous work showed mixed results related to the nature of the relationship between age and EI (Kautonen et al., 2013). For instance, many authors support the fact that the older an individual gets, the more skills, experiences, and capabilities s/he acquires. Hence, the higher the chances to become an entrepreneur. However, other scholars indicate that entrepreneurship is more considered by the youngest segment as a career choice compared to older generations (Arenius & Minniti, 2005). For this, the following thesis investigates the direct relationship between age and IE. Additionally, this paper also investigates the moderating role of age in assessing the relationships between PO and EI, PC and EI, and STATUS and EI.

Using data from the global entrepreneurship monitor (GEM), 80,892 survey answers were collected from respondents from 19 European countries. Out of the total number of observations, only 52,322 remained after removing observations with missing values. This data was analyzed using both a binary logistic regression and a moderation analysis.

Current findings indicate that the association between age and EI is negative. This indicates that the older a person gets, the less likely s/he is willing to engage in entrepreneurial activities. These results confirm the findings of Lévesque, Minniti (2006), Bohlmann et al. (2017), Gielnik et al. (2012), and Simoes et al. (2016), and deny the findings of Parker (2009) who found a positive relationship between age and EI.

Results also found evidence of the positive association between PO and EI, which aligns with the contributions of Tsai et al. (2016), Bohlmann et al. (2017), and Tripopsakul (2018). Initially, this research expected that the strength of the relationship between PO and EI depends on age. However, findings found no evidence to support this prior hypothesis. This indicates that age does not modify the existing expected relationship between PO and EI and does not impact the strength of the relationship between these variables.

Concerning the relationship between PC and EI, this research supports the findings of many researchers (e.g., Bohlmann et al., 2017; Peng et al., 2015; Tsai et al., 2016) as it found a significant positive association between the two variables. In addition to that, findings also found a statistically significant effect of age in moderating the relationship between PC and EI, which was originally hypothesized. This means that the strength of the relationship between PC and EI is stronger among seniors compared to non-seniors.

Findings also reveal the positive relationship between STATUS and EI, which conforms with the results of Tsai et al. (2016) and Peng et al. (2015). Nonetheless, results deny any significant effect of age in moderating this prior relationship. Unlike what was originally hypothesized, this contribution indicates that age does not change the strength of the association between STATUS and EI. The strength of this relationship is almost the same when comparing individuals aged 50 or more to individuals younger than 50 years old.

Finally, the current contribution also found evidence related to the nature of the relationship between EI and gender or education. Concerning gender, results indicate that men are more likely to have a positive EI compared to women, which aligns with the findings of Veciana et al. (2005), Langowitz, Minniti (2017), Kwong et al. (2009), and Wagner (2006). But for education, results indicate that higher levels of education are more associated with positive entrepreneurial intentions compared to lower levels of education, which aligns with the findings of Peterman, Kennedy (2017), and Hou et al (2019).

6.1.Limitations & suggestions

While this research adds to the literature, it has some limitations that should be taken into account. First, the conceptual framework only includes personal characteristics and does not include external predictors such as the GDP per capita. Second, and similar to any other statistical method, the method used in this paper has its limitation. The major limitation of the binary logistic regression is assuming a uniform relationship between the dependent variable and predictors (e.g., linear relationship) (Ranganathan et al., 2017). In addition to that, this statistical method requires no or low levels of multicollinearity and works better when variables do not have high correlation terms between them (Ranganathan et al., 2017). Finally, the last limitation consists of the nature of the variables used, which are binary (e.g., age distinguishes between <50 years old individuals and 50+ individuals). It is important to note that binary variables provide less information compared to continuous data.

The discussed limitations provide avenues for future research. Forthcoming contributions can introduce new internal/external variables to enhance the prediction of entrepreneurial intention. Examples of external variables might include the impact of GDP per capita and the political environment among many others. Besides, future works can use borrow the current conceptual framework while measuring variables either as continuous or as a scale. For instance, the age of respondents can be used as a continuous variable, and the perceived capability can be measured as a scale (e.g., from 1 to 10, where 1 corresponds to "I have no skills to start and manage a business", 5 corresponds to "I have average skills to start and manage a business", and 10 corresponds to "I have all the necessary skills to start and manage a business"). Finally, the current data can be analyzed using other statistical methods (e.g., path analysis) to support the current findings, or use statical techniques that will enable identifying the causal relationship between the dependent and independent variables.

Finally, this research provides insight into how entrepreneurial perceptions are associated to engage in entrepreneurial activities. The current framework shows the different personal characteristics that are significantly associated with having a positive entrepreneurial intention. Based on the findings, perceived opportunity, perceived capability, and the perception of the successful status of entrepreneurs are all positively associated to engage in entrepreneurial activities in the upcoming three years. While the core of this research is to assess the role of age in moderating the relationships between each entrepreneurial perception and the entrepreneurial intention, results only found evidence of the significant effect of age in moderating the relationship between the perceived capability and entrepreneurial intention. This means that the strength of the association between the perceived capability and the intention to engage in entrepreneurial activities has more effect on seniors compared to younger individuals.

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