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Entrepreneurial activity and cultural diversity across countries

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Abstract

This study examines the moderating role of environmental factors in influencing the relationship between the individual dimension and entrepreneurial activity across 13 European countries. It shows that different environments influence the effect of an individual's competences on his willingness to engage in entrepreneurial activity. To test my hypothesis, I used data from the Global Entrepreneurship Monitor, resulting in a final sample of 24,405 observations collected in 2018. My results include the positive impact of individual competences on entrepreneurship and the moderating role of factors like the fear of failure, societal valuations and the ease of starting a business on the relationship between individual competences and entrepreneurial activity. These findings provide valuable insights into the complexity of explaining entrepreneurial activity by examining the interplay across different dimensions as discussed by Gartner (1985) and provide valuable insights for policymakers.

1. Introduction

The Netherlands is known as a strong entrepreneurial country. According to Baaz (2018), data from the Global Entrepreneurship Monitor (GEM) reflected this by ranking the Netherlands highly among European countries as well as other developed countries, even though the Netherlands knows a decline in entrepreneurship. Part of this decline is explained by the strong growth of the Dutch economy and the job growth associated with it in 2017. This results in a decline of entrepreneurs who start their business out of necessity. Still, the Netherlands remains a strong entrepreneurial country, but how come this country ranks high when compared to other countries, even when its entrepreneurial activity is in decline? Is the height of entrepreneurial activity explained by characteristics of the Dutch population? Is the Dutch population more competent in starting businesses when compared to other countries, has it something to do with the environment of the country or both? And how is this effect in other countries?

In today's interconnected global landscape, due to an increasing level of globalization, the entrepreneurial competences have become a driving force behind entrepreneurial intentions. Many studies have examined what these individual competences are, including, but not limited to, education, experience and general skills in opportunity finding when creating a business (Tittel & Terzidis, 2020). Understanding the dynamics of entrepreneurial competences can contribute to the development of effective policies and programs, enabling and supporting aspiring entrepreneurs. Insights in the relationship of these competences are of great value given that entrepreneurs play a key factor in the economic development and innovation of a certain country. An example of the importance of competences and the effect on entrepreneurship is the research done by Van der Sluis et al. (2008), who find a positive effect of educational attainment on entrepreneurial performance, which has direct applications for policy makers of countries that want to improve the entrepreneurial climate.

Because of this interconnected global landscape, the dynamics of entrepreneurship are not limited to the boundaries of a single country. Entrepreneurs are operating in diverse cultural environments, where they have to adapt to the complexities of different cultural norms, values and practices (Xu et al., 2019; Hamilton et al., 2008). This cultural diversity, fueled by the increase in globalization and migration, as reported by the World Migration Report (2020), presents both challenges and opportunities for entrepreneurs. Opportunities can be seen in the different perspectives, experiences and ideas ultimately leading to more creativity and adaptability, given that every culture is different and international collaboration can make use

of these positive differences between cultures over countries. However, this diversity also introduces complexities like different communication styles, business practices, societal expectations of the entrepreneur and can even be the cause of conflict when working in culturally diverse teams (Obsuwan et al., 2021).

Understanding the effect of individual competences and environmental factors influencing entrepreneurial activity is a research area which has gained attention in recent years. A big part of this recent attention can be explained by the globalization and increase in immigration, leaving entrepreneurs with a different environment when compared to their home country. How this entrepreneur is able to start an enterprise in different environments is often discussed on the basis of an individual's competences or certain characteristics of this environment, focusing on a direct effect of these factors on entrepreneurial activity. Many studies have been conducted to detect these direct factors like to the role of experience and knowledge by Staniewski (2016), to the role of liquidity constraints by Hurst & Lusardi (2004) and research to personality treats like cognitive flexibility by Rundh (2011). Besides insights into the effect of these factors, this research is very useful because countries can directly contribute to some of these aspects, enabling them to effective policy making.

Many successful stories are reported in the news headlines about entrepreneurs successfully navigating cultural boundaries and capitalizing on opportunities in these diverse markets. For instance, D'Incerti (2023) reflects on the importance of a diverse team around the entrepreneur, when navigating through a landscape with a diverse culture. This news article is another example of attention to the direct effect of the environment and individual characteristics on entrepreneurial activity. Given an era marked by high-connectiveness, this is highly relevant to fathom. However, this research does not contain the whole picture. It is an undisputed fact that the environment and individual competences have an effect on the creation of enterprises, but that these direct effects are also likely to be interconnected, is generally overlooked. A certain environment can have an effect on the competences of an individual and functions as a moderator for the creation of businesses. When an individual has certain competences to start a business, but the environment functions as a barrier to carry out the creation of an enterprise, this can cause a problem for the entrepreneur. An environment, like institutions (Mornah & MacDermott, 2016), which functions as a barrier for the competences of the entrepreneur can be a reason for entrepreneurs not to engage in entrepreneurial actions. The effect of certain competences of the individual may vary depending on this environment. This interaction is often overlooked and deserves to be examined since it is a key explanation as to why individuals

with the same competences differ when engaging into entrepreneurial intention and how countries can use this knowledge for effective policy making.

Furthermore, the specific variables capturing the environment and individual competences of the entrepreneur are underexposed in the current literature. Researching these variables and exploring the effect of their interaction will provide a deeper understanding of the factors influencing entrepreneurial activity. This is important as it may shed light on the differences in entrepreneurial behavior among individuals with similar capabilities. By examining how the environmental context influences the choices and actions of entrepreneurs, given their unique characteristics, this study aims to offer valuable insights into navigating the complexities of contextual diversity. The findings can also help to explain complications that may arise when collaborating with individuals from diverse backgrounds and provide guidance for policymakers in developing targeted interventions. To address this critical research gap, this paper examines the following research question:

Research question: *What is the effect of individual competences on entrepreneurial activity when confronted with cultural and environmental diversity in Europe?*

To address this research question, I make use of the newest freely available data from the 2018 GEM database. This data consists of information for over 70,000 individuals coming from 49 different countries aging between 18 to 64 years old. The final sample contains data for 24,405 individuals across 13 European countries. This sample is analyzed using a logit model and partial support is found for my hypothesis. Additional support was gained in further analyses examining subsets of data. My estimations show that the effect of individual competences on entrepreneurial activity is dependent on the cultural and environmental diversity present in Europe.

The main contribution of this paper is to provide insights in the moderating effect of the environment on the relationship between individual competences and entrepreneurial activity. Instead of examining the separate direct effects of these relationships, this paper looks at how the baseline relationship between entrepreneurial activity and individual competences varies across different levels of cultural diversity within Europe. Consequently, it is an unexplored but useful addition to the current literature that focusses on the direct effects when explaining entrepreneurial activity and mainly uses the cultural index variable provided by the GEM data. In addition, this paper has relevant implications for countries forthcoming from the results obtained with regard to policy, since some cultural or environmental factors are subject to

change with regard to governmental interference. Finally, it provides insights for international companies, since differences in decisions made by business partners coming from a different cultural background can be explained by this cultural diversity.

2. Literature review

2.1 Conceptual framework

The moderating effect of the environment on the relationship between individual competences and entrepreneurial activity can be illustrated using a conceptual framework. By taking into account the moderating effect, and thereby not only considering the direct effects attributing to business creation, a multidimensional approach is used to explain entrepreneurial intentions. By adopting this approach and exploring the interplay between individual competences and the environment, I can uncover the complex dynamics that shape entrepreneurial activity and formulate an answer to the research question. To illustrate the interplay between these factors, a conceptual model is employed to provide a comprehensive and visually illustrative representation of how these factors interact and influence entrepreneurial intentions, laying the foundation for my research and serving as a framework to examine the nuanced dynamics and influences that shape entrepreneurial intentions and outcomes.

In 1985, Gartner established the foundation of a comprehensive and multi-dimensional approach to comprehend entrepreneurship, as he recognized that entrepreneurs and businesses are characterized by unique attributes and are influenced by a multitude of direct and interactive effects of various factors, acknowledging that entrepreneurship does not occur in isolation. Gartner's framework consists of four perspectives: characteristics of the individual(s) who start(s) the venture, the organization which they create, the environment surrounding this new venture and the process by which this new venture is created. Figure 1 shows a recreated model based on the framework by Gartner, capturing its key elements as illustrated in his paper. Central to this multi-dimensional model is the recognition that it examines not only the direct impact of factors such as the individual dimension, but also the indirect effects or moderating role of other dimensions such as the environmental dimension on entrepreneurial activity through the individual dimension. Furthermore, Gartner (1985) introduced an expanded framework which includes variables across four dimensions extensively studied prior to the introduction of his original framework. By incorporating and examining these factors in combination with the currently predominant factors discussed in the literature, this study ensures that the factors researched align with Gartner's framework and the current literature.
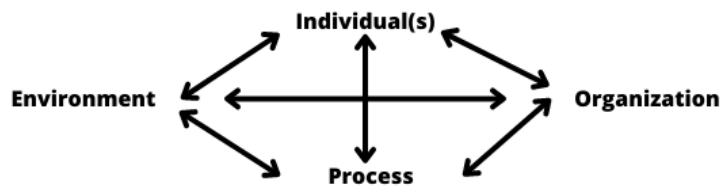
Figure 1 Framework of Gartner (1985).

Gartner (1985) introduced his original framework to move away from an unidimensional analysis to a multi-dimensional analysis. In his paper, he discusses how the four dimensions of the framework can be seen as a "kaleidoscope" (p.701), explaining that his framework can be seen as an instrument through which to view the varying patterns of business creation. Furthermore, Gartner (1985) expanded his framework by including a list of variables, extensively researched before 1985, which explains entrepreneurial activity, organizing them under the corresponding dimensions of his conceptual model. By demonstrating that these relevant variables can be integrated into his model, Gartner presented an argument for the completeness of his framework. Much research, before 1985, was focused on a single aspect of new venture creation, and its main purpose was to show how entrepreneurs differ from non-entrepreneurs and entrepreneurial firms from non-entrepreneurial firms. Gartner takes another perspective, emphasizing that entrepreneurs differ and their respective firms as well. This way, the research shifts from differences between entrepreneurs and non-entrepreneurs to a combination of variables that make up new business creation. Gartner's framework was introduced to illustrate this new perspective and functions as a foundation for future research focusing on a combination of dimensions to explain entrepreneurial activity.

Since 1985, research started to follow the thoughts of Gartner and consisted of multi-dimensional approaches to explain business creation. Since Gartner's original framework, researchers have expanded and refined conceptual models to capture new insights and advancements in their respective fields. An example can be found in the work by Jones & Matlay (2011). They revisited Gartner's ideas to create a conceptual framework of entrepreneurship education. They redefined the conceptual framework for this explanatory factor, which is illustrated in Figure 2. This framework follows the complex multi-dimensional interactions of Gartner and is used to explain entrepreneurship education. This framework by Jones & Matlay (2011) is an illustration of the current relevance of the framework by Gartner (1985), because it uses multi-dimensional insights derived from Gartner and captures entrepreneurship education which is only a single factor Gartner placed in his individual

dimension, illustrating the complexness and general approach by Gartner. Therefore, this conceptual model, to explain entrepreneurship education, is not created to replace Gartner's original model, but rather as an expansion of one part of Gartner's model.
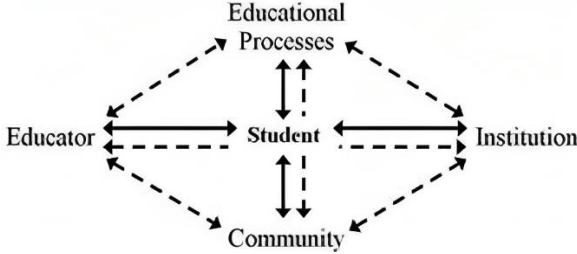

Figure 2 Framework of entrepreneurship education by Jones & Matlay (2011).

Bensaid & AzdiMousa (2021) provide another illustration of the continued application of Gartner's framework by comparing digital with traditional entrepreneurship. Again, this more recent conceptual model is not created to replace Gartner's model, but rather adapted to the field of interest, in this case the comparison between digital and traditional entrepreneurship.

Since Gartner's original framework, researchers have expanded and refined his conceptual model to capture new insights and advancements in the field. These adaptations often aim to provide a more nuanced understanding of entrepreneurship by incorporating more specific factors or emphasizing specific aspects of the entrepreneurial process.

To stay close to the established model of entrepreneurship, the framework introduced by Gartner (1985) will be used. However, considering the research question of this paper, the specific conceptual framework illustrated in Figure 3 will be employed. This framework builds upon Gartner's original model, taking into account his model as well as other valuable insights from his paper.
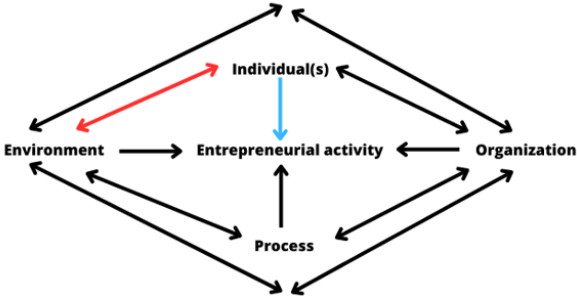

Figure 3 Adapted conceptual model for this study.

This conceptual model, illustrated in Figure 3, captures the essential dimensions and variables relevant to the research context, effectively illustrating the interplay between various factors

and their influence on the outcomes of interest. The red line is an indicator of the moderating effect of environmental factors on the individual dimension of this framework. The blue line is the direct effect of the individual dimension on the entrepreneurial activity. In this paper, the moderating effect of this red line on the relationship between individual competences and entrepreneurial activity, as illustrated in Figure 3, will be studied to answer the research question. Certain factors, which are part of these two dimensions, will be analyzed in order to study this moderating effect of the environmental dimension on the relationship between individual competences and entrepreneurial activity.

The individual dimension of the framework by Gartner (1985), focusses on the characteristics of the entrepreneur. Examples of individual characteristics, often researched, are previous work experience, education or the so-called capabilities enabling the entrepreneur to start an enterprise. These characteristics are emphasized by Van der Sluis et al. (2008), who find that the impact of education on selection into entrepreneurship is insignificant, but the effect of education on performance is positive and significant, reflecting that education helps the entrepreneur and can be seen as driver of successful entrepreneurship. Another study, primarily conducting research at the direct effect of this individual dimension, was done by Rauch & Hulsink (2015) who found a positive relationship between entrepreneurship education and entrepreneurial intentions. These studies are examples of a factor describing the individual dimension by Gartner. Other factors in the work of Gartner include previous work experience, age and whether an individual has entrepreneurial parents. All these factors can be categorized as "individual competences" since they collectively encompass the characteristics of an individual that can contribute to entrepreneurial activity.

Given that entrepreneurs do not operate in a vacuum, Gartner (1985) introduces the environmental dimension of his framework. Examples of this dimension are the social support for entrepreneurs captured in the "attitude of the area population" and the ease of creating a business reflected in the "barriers to entry" from the extended multi-dimensional model by Gartner. An example of research to this environmental dimension and its effects is reflected in a study by Dimitratos et al. (2004), where the authors find that the economic uncertainty in the domestic country has a significant positive moderating effect on the relationship between entrepreneurship and international performance.

Additionally, Gartner's framework stresses the significance of the organizational dimension as part of the entrepreneurial process, recognizing that if all entrepreneurs and their processes were

identical, the organizations they create would hold no intrinsic value. This means that organizations play a fundamental role in explaining entrepreneurial activity, since different businesses could be created when entrepreneurs and their processes were identical. Furthermore, the framework acknowledges the dynamic nature of entrepreneurship by identifying the process dimension, which is characterized by six key actions undertaken by entrepreneurs during business creation. These actions include identifying business opportunities, acquiring resources, marketing products/services, manufacturing the product, establishing the organization, and adapting to governmental and societal influences.

This paper builds on the framework introduced by Gartner (1985) to illustrate the complex interplay of factors explaining entrepreneurial activity, using a multi-dimensional model. Therefore, it was necessary to thoroughly discuss both the individual and environmental dimension, which serve as the foundation of this study. In the following chapters, these dimensions will be further examined and characterized by more specific factors, allowing for the identification of variables associated with each dimension. This process will enable an estimation of the effect of individual competences on entrepreneurial activity when confronted with cultural diversity from the environmental dimensions, leading to an answer to the research question.

2.2 Knowledge, skills and experience

In order to gain insight into how environmental factors affect the relationship between individual competences and business creation, it is essential to thoroughly examine the definitions of both the environmental dimension and the individual dimension. The qualification of the individual dimension is determined by including factors from Gartner's extended model. However, relying solely on Gartner's model is insufficient, considering that his paper is nearly four decades old. To ensure a more recent qualification of the individual dimensions, current literature will also be taken into account when qualifying this dimension.

In his paper, Gartner looks at the individual dimensions as individual competences, identifying factors based on the characteristics of an individual. In the current literature, numerous individual characteristics that influence entrepreneurial activity are studied. One recurring area of research revolves around the relationship between entrepreneurial education and entrepreneurial activity. This line of research is driven by various motives, including the

identification of effective educational approaches and the exploration of direct factors that can enhance entrepreneurial activity, given the relevance of entrepreneurial activity in a country.

The paper by Fayolle & Gailly (2015) shows that entrepreneurship education has a lasting impact on entrepreneurial attitudes and intentions. The primary findings of their research indicate that the benefits of an entrepreneurship education are particularly significant for individuals with little or no prior entrepreneurial knowledge. These findings imply that having entrepreneurial knowledge, knowledge considered essential to have when wanting to start a business, helps reducing the barriers and difficulties typically encountered when initiating a business. Furthermore, these results align with our intuitive expectations, as a positive correlation could be expected between entrepreneurial knowledge and the ease of starting a business. This is because entrepreneurial knowledge helps streamlining the initial stages of creating a new business, such as formulating a business plan and conducting a cost-benefit analysis. Additionally, this paper can be seen as an implication that countries could implement entrepreneurship education in their policy, because it provides individuals with entrepreneurial knowledge. This entrepreneurship knowledge may have a lasting positive impact on entrepreneurship, stressing the relevancy of researching the factors which influence entrepreneurial activity.

In addition to the exposure of entrepreneurial knowledge in the current literature as a factor influencing entrepreneurial activity, entrepreneurial experience is also recognized as a significant explanatory factor. Work by Staniewski (2016) shows that entrepreneurs with managerial experience obtain higher mean scores in the general indicator of entrepreneurial success, reflecting that experience plays a significant role in explaining entrepreneurial activity as part of the individual competences of an individual. Furthermore, this paper provides evidence that the unique knowledge of the entrepreneur has a positive effect on entrepreneurial activity, again stressing the importance of knowledge as a factor in explaining entrepreneurial activity.

These recent studies provide evidence of the relationship between knowledge and experience on entrepreneurial intentions. This relationship is consistent with the findings of Dragin et al. (2022), who researched the effect of indirect experience on entrepreneurial activity and discovered that individuals with entrepreneurial parents tend to have higher entrepreneurial intentions. The research suggests that parental role modeling plays a crucial role in shaping these intentions, as parents who have experienced entrepreneurship themselves, tend to hold a positive view of the field and pass on their knowledge and experiences to their children.

Therefore, the influence of knowledge and indirect experience, as demonstrated by Dragin et al.'s (2022) findings, confirms the relevant impact of these factors when explaining entrepreneurial activity.

Mueller and Thomas's (2001) research highlights the significance of business education not only in equipping individuals with technical skills like accounting, marketing, and finance, but also in cultivating self-reliance, independent thinking, creativity and adaptability, which are factors that positively impact the entrepreneurial activities. Consequently, a positive relationship exists between an individual's skills and entrepreneurial activity. Nevertheless, the concept of skills includes a broad spectrum, as knowledge and experience can also be perceived as skills. Therefore, given the relevance in the current literature of explanatory factors such as experience and knowledge, other individual competences which positively influence entrepreneurial activity will be referred to as "skills", in order to best describe the individual competences of the dimension explanatory to entrepreneurial activity.

Based on the discussed current literature and factors from Gartner's extended framework, I expect a positive relationship between entrepreneurial activity and an individual's experience, knowledge and other skills in Europe. Therefore, the first hypothesis to be tested is the following:

H1: Having the knowledge, skills and experience to start a new business is positively associated with entrepreneurial intentions in Europe.

2.3 Fear of failure

As Gartner (1985) specified multiple factors in his extended framework, often researched in his time for the individual dimension, he did the same for the environmental dimension. In this paper environmental factors are considered factors that exist external to the individual, including various elements such as economic climate, regulatory frameworks, social and cultural influences and availability of resources. These environmental factors play a crucial role in shaping and influencing the entrepreneurial activity and outcomes within a given context. It is challenging to entirely separate environmental factors from individual characteristics, as individuals react uniquely within specific environments. Consequently, the environmental factors discussed in this research can partially overlap with the individual dimension.

Many of the environmental factors discussed by Gartner (1985) in his extended framework have a relationship with the fear of failure when starting a business. It can be seen coherent with the "attitude of the area population", since this can increase or decrease the pressure for the entrepreneur, given the attitude towards failing as an entrepreneur in society. Furthermore, the general "living conditions" are also associated with the fear of failure, given that these conditions can offer the entrepreneur something to fall back on when his entrepreneurial journey comes to an unexpected halt. Therefore, this paper aligns with Gartner's (1985) perspective, placing the fear of failure within the environmental dimension, a viewpoint also shared by Turro et al. (2016) in the existing literature. The fear of failure can be influenced by various other factors within the environmental dimension. Since individuals react differently to these factors, some may feel confident enough to start a business, while others may hold back due to concerns about the adequacy of their business idea or next steps. Of course, the amount to which individuals experience fear of failure can vary, but it is still influenced by environmental factors.

Since the fear of failure is an obstacle to not start a business because of the lack of confidence in making this business thrive, it is relevant to examine this environmental factor in the context of diverse cultures worldwide, since the existence of heterogeneity in the fear of failure among individuals when starting a business serves as further evidence of its status as an environmental factor that can potentially moderate the relationship between individual competences and entrepreneurial activity.

When looking at the fear of failure within entrepreneurship, Wyrwich et al. (2016) found that the fear of failure is dependent on the environment. Their findings demonstrate that entrepreneurs experience lower levels of fear of failure in environments that embrace and support entrepreneurship, therefore reinforcing the idea that the fear of failure is dependent on the environment and should be considered as an important aspect when explaining entrepreneurial activity. The results of Peters & Stefanek (2012) align with these findings, confirming that the fear of failure varies across countries and indicating its part of the environmental dimension.

Multiple studies found a negative relationship between the fear of failure of individuals and their entrepreneurial intentions. Kong et al. (2020) revealed that the fear of failure weakened the relationship between entrepreneurial intention and entrepreneurial action and found that the fear or failure hindered college students from taking up entrepreneurial behavior. The research

conducted by Vodă et al. (2020), supports this notion of a negative correlation between the fear of failure and entrepreneurial intentions across a sample of nine countries.

The work from Kollman et al. (2017) suggests that the fear of failure mediates the relationship between obstacles and nascent entrepreneurial activity. It shows that fear of failure leads to an obstacle which results in less entrepreneurial activity. These last three papers show why a negative relationship between the fear of failure and entrepreneurial activity is to be expected. The reason for this relationship can be seen summarized in research done by Cacciotti et al. (2020), where the author describes the fear of failure as a negative affective reaction based in cognitive appraisals about the possibility of not succeeding in a business venture. This fear is particularly strong because the world of entrepreneurship is full of uncertainty and ambiguity.

Given the literature suggesting a negative correlation between the fear of failure and entrepreneurial activity, it is interesting to examine how the fear of failure moderates the relationship between individual competences and entrepreneurial activity. Recent research by Dutta & Sobel (2021) shows that the fear of failure hurts the entrepreneurial process less when levels of economic freedom are higher, as there are more additional chances for failed entrepreneurs to pursue, suggesting again the multiple environmental layers associated with the fear of failure making it suitable to research as a moderating effect. Furthermore, a study conducted by Van Trang et al. (2019) looks at the relationship between the fear of failure and individual competences. They discovered that individuals who acquire entrepreneurship knowledge, skills and experience tend to have lower levels of fear of failure. This finding highlights the existence of a relationship between these factors and underscores the relevance of investigating the moderating effect of the fear of failure on the relationship between individual competences and entrepreneurial activity.

Based on the literature findings, it can be expected that the fear of failure, as an environmental factor, varies over different environments across countries in Europe and causes a direct negative effect on entrepreneurial activity. When the fear of failure is considered an obstacle for an individual to start a business, this individual, on average, will need more confidence in his competences to overcome this barrier and to pursue in starting an enterprise. When the fear of failure is absent, on average, all individuals will be more inclined to start an enterprise given certain individual competences, given its negative direct effect. Therefore, the fear of failure is expected to be a positive moderator for the relationship between individual competences and entrepreneurial activity. The second hypothesis is formulated as follows:

H2: The relationship between knowledge, skills and experience and entrepreneurial intentions is positively moderated by fear of failure in Europe.

2.4 Society's cultural valuation on entrepreneurs

Possibly the most cultural factor influencing entrepreneurial activity would be society's cultural valuation on entrepreneurs. This factor is part of the environmental framework by Gartner (1985) and falls under the description of the "attitude of the area population", which Gartner (1985) describes in his extended framework, which in this case is determined by the region of the individual. The attitude of the local population is a cultural factor as it reflects the shared values, beliefs, and norms within a specific area. Culture shapes perspectives, influences attitudes towards entrepreneurship and determines the acceptance of risk-taking and failure. Therefore, the society's cultural valuation serves as an indicator of the influences of culture and the surrounding environment on entrepreneurial activities. Whether starting a new business is seen as a desirable case is part of the characteristics of a specific environment and can affect the extent of entrepreneurial activities. Furthermore, the amount of prestige allocated to a successful entrepreneur by a society can have significant explanatory value. Therefore, within this research, the society's valuation on entrepreneurs is integrated.

Since the society's cultural valuation is established in the environmental dimension by Gartner's extended framework, it is interesting to look at the current literature about social support for entrepreneurs and the effect this has on entrepreneurial intentions. According to a recent study by Younis et al. (2020), social support positively influences entrepreneurial intentions. This study holds significance as it explores the sources of social support available to individuals, such as family, friends and cultural perspectives within a particular environment, which is the social support an individual can experience from his environment. According to Mueller & Thomas's (2001), a supportive national culture will, ceteris paribus, increase the entrepreneurial potential of a country. However, not much literature examines the moderating impact of a society's cultural assessment on the individual competences of entrepreneurs in relation to entrepreneurial activity.

When society's culture places a positive value on entrepreneurship, individuals are likely to feel more inclined and confident in their abilities to initiate and run a business, suggesting a positive direct effect of a society's cultural valuation on entrepreneurial activity. A study confirming this intuitive moderating effect is a study by De Jorge Moreno et al. (2007), who

found that the region or country where the entrepreneur operates in plays a significant role in how confident entrepreneurs feel about the economic performance of their businesses. The level of confidence an entrepreneur possesses, regarding his current or past business, is closely tied to their knowledge, skills, and experience. As this confidence grows, it also boosts these factors.

However, when a positive cultural valuation is present, individuals experience this regardless of their individual competences. Therefore, the effect of individual competences on entrepreneurial activity is likely to be smaller, since less barriers have to be overcome and fewer individual competences are needed to overcome these barriers therefore suggesting a negative moderating effect of society's perception of entrepreneurship on the relationship between individual competences and entrepreneurial activity, resulting in the third hypothesis:

H3: The relationship between knowledge, skills and experience and entrepreneurial intentions is negatively moderated by society's positive cultural valuation on entrepreneurs in Europe.

2.5 Media's influence

The media landscape varies significantly across countries. In the article "Marketing Around the World: What Works in Other Countries in 2022" by Latana (2021), the author explores the impact of a national culture on consumer behavior and engagement with various media platforms, such as the public- and social media. The author emphasizes the importance for media platforms to consider cultural diversity, as it shapes individuals' perspectives on the media and enhances their vulnerability to influence. This perspective suggests that both public and social media in a country are essential parts of the overall environment, because it is directly related to the culture differences.

Research showing that the national public media is strongly dependent on the culture of a certain country and therefore makes up the environmental dimension is evident in the work by Coninck et al. (2021). They found that news consumption consists of different consumption patterns across countries. Furthermore, the authors found that for Austria the attitude of the consumers of these outlets depended on the outlet of the news and other differences per country on the exposure of news. This is evidence of the cultural differences in countries between the outlets in a country as well as differences in the way news is perceived by the national population, again illustrating that media exposure is part of the environmental dimension given the direct relationship with cultural differences across countries.

This perspective is confirmed in the research done by Turró et al. (2014), who define media exposure as part of the environment and confirm the influence and effect of entrepreneurial culture and environment on the creation of enterprises. Additionally, the authors find that positive media exposure, meaning individuals often see stories in the public media and/or internet about successful new businesses, has a positive effect on entrepreneurial activity, suggesting a positive relationship between positive entrepreneurial media exposure, as part of the environment, and entrepreneurial activity. This research aligns with Gartner's (1985) extended framework, which categorizes the influence of public media as "governmental influences" and the influence of the internet, including social media, as the "attitude of the area population." This classification reinforces the notion that both these factors are components of the environmental dimension.

Positive media influence can be seen as a demonstration of success stories of entrepreneurs as role models. These role models have a significant impact on inspiring new entrepreneurs to start their own businesses. By promoting entrepreneurship through positive media representation, a supportive environment that normalizes entrepreneurship as a viable career choice, encouraging a new generation of entrepreneurs, is created. The effect of these role models in the media is reflected in research done by Scherer et al. (1989). They explain the importance of a role model in the creation of enterprises. The study showed that having a parent who was an entrepreneurial role model was linked to higher aspirations for education and training, increased belief in one's ability to complete tasks successfully (task self-efficacy), and greater anticipation of pursuing an entrepreneurial career. Given that not every entrepreneur can derive this inspiration from its parents, the national media outlets could play an important role in positive role modelling for a new generation of entrepreneurs and therefore the effect of positive role modeling on entrepreneurial activity can be derived from national media outlets.

Laviolette et al. (2012) confirmed this role-modeling effect and found that exposure to story bound entrepreneurial role models has a positive impact on self-efficacy and entrepreneurial intention. They found that successful role models reinforce role model identification which enhances self-efficacy and entrepreneurial intention. This research shows the importance of a positive role model for entrepreneurial activity growth. Considering the impact of media influence as an environmental factor in shaping entrepreneurial role models and enhancing self-efficacy and entrepreneurial intentions, it becomes interesting to explore the moderating role of media influence with regard to the relationship between individual competences and entrepreneurial activity.

In line with the literature, the influence of the media on the entrepreneur is part of the environmental dimension and can be a role model for individuals looking to create their own enterprise. Given a certain national media output, individuals can perceive this output as supportive to entrepreneurship or not, based on their subjective expectancy of a supportive national media which is, as research shows, influenced by their environment. Therefore, it becomes interesting to look at this environmental factor and its influence on the relationship between having the knowledge, skills and experience to start an enterprise and entrepreneurial activity. Based on the literature I expect a positive direct effect of supportive national media on entrepreneurial activity. Furthermore, following the reasoning of the previous hypothesis, the perceived supportive influence of the media is expected to function as a negative moderator for the relationship between individual competences and entrepreneurial activity, since individuals will feel more inclined to start a business regardless of possessing individual competences. Therefore, the fourth hypothesis is:

H4*: The relationship between knowledge, skills and experience and entrepreneurial intentions is negatively moderated by the influence of the national public media in Europe.*

2.6 Ease of starting a business

To complete the analysis of an environment's cultural influence on the creation of new enterprises as part of the environmental framework by Gartner (1985), the ease of starting a business cannot be overlooked, since this factor is a key element in the extended framework of Gartner and much considered in the current literature. In his framework, Gartner includes this factor in the environmental dimension as part of the "barriers to entry" and qualifies it as an environmental influence on organizations.

Klapper et al. (2006) used the differences in the regulations to create a business across environments and found that entry regulations can act as a hindrance to entrepreneurship, confirming that these entry regulations are an environmental factor influencing entrepreneurial activity. These findings are confirmed in work done by Turró et al., (2014) who show that the number of procedures needed to create a business, is a significant factor in explaining the creation of new businesses.

The ease of doing business can also be associated with "governmental influences," as discussed in Gartner's environmental framework. Bjørnskov & Foss (2008) conducted a study that

revealed a negative correlation between the size of government and entrepreneurial activity, highlighting the impact of government beyond regulations alone. In their research, the authors examined the size of government, including factors such as government consumption, redistribution, public investments and marginal taxation, as forms of governmental intervention in the economy. This once again shows that the ease of doing business is a part of the overall business environment and suggests a positive relationship between the ease of doing business and entrepreneurial activity, beyond regulations alone.

An illustration of this relationship between the ease of starting a business and entrepreneurial activity in a society can be observed through the implementation of entry deregulation policies in Portugal, which occurred in 2005. Branstetter et al. (2014) studied this implementation and their results show an increase in firm formation and employment most notably among "marginal" firms. Additionally, they discovered that regulatory reforms do not only affect the quantity of new businesses but also the quality of businesses and jobs generated as a result of these reforms. Consequently, these reforms, increasing the ease of starting a business, do not only contribute to an increase in entrepreneurial activity but also to an enhancement in the overall quality of entrepreneurship and the jobs created. This effect is confirmed in empirical work reviewed by The World Bank (2013), which shows simplifying business registration through reforms has been found to increase the creation of firms, suggesting that complicated and ineffective regulatory business environments can hinder entrepreneurship and adversely affect economic performance.

Generally, an individual who possesses the knowledge, skills and experience to start a business, is more likely to engage in entrepreneurial activity compared to an individual lacking these competences since this individual can overcome the barriers shown in the literature. When regulations make it easier to start a business, this is expected to be a negatively moderated effect on the relationship between individual competences and entrepreneurial activity, since the literature showed that simplified regulations and reduced bureaucratic barriers create a more favorable environment for all individuals. Therefore, following the argumentation in previous hypothesis, less barriers must be overcome and fewer individual competences are needed to overcome these barriers, reducing its effect on the relationship between individual competences and entrepreneurial activity. Therefore, the expected effect, finalizing this literature research, formulated in the fifth hypothesis is formulated as:

H5: *The relationship between knowledge, skills and experience and entrepreneurial intentions is negatively moderated by the ease of starting a business in Europe.*

3. Data

3.1 General data description

Since my main objective is to examine the effect of individual competences on entrepreneurial activity when confronted with cultural diversity across Europe, I use the individual entrepreneur as my unit of analysis and utilize 2018 data from the Adult Population Survey (APS), which is part of the Global Entrepreneurship Monitor (GEM). The GEM is a research network which studies and analyzes entrepreneurship across countries. Every year, the GEM provides an annual report that highlights the key findings derived from the APS. However, the database containing APS data is released a few years after the publication of the annual report. This delay is because the GEM allows exclusive access to the funding members during the initial years after the collection of the APS, allowing them to utilize the data for their own research purposes. After this exclusive access period, the APS data is made freely available on the GEM website, enabling me to use the most recent 2018 APS data.

The APS dataset is compiled by collecting data using a standardized survey conducted annually by a network of researchers. This survey provides a general overview on the global status of entrepreneurship by identifying factors which influence entrepreneurial activity. The APS consists of questions that cover a range of topics related to entrepreneurship including topics like the frequency of business creation, the characteristics of entrepreneurs and their businesses and the environmental characteristics for entrepreneurs in different countries. The data is collected by using online surveys as well as face to face interviews and has a representative sample of the adult population in each participating country by implementing a minimum threshold of 2000 observations per country.

To increase external validity, the GEM uses a multistage sampling approach which increases the representativity of the adult sample population from each country within the APS data. This approach divides the population by using socio-demographic variables like education level, age, gender, household income, household size and work status. By dividing the population, using these variables, GEM helps to ensure that the sample of the APS data is reflective of the overall population's composition, which increases external validity, and avoids biases that may arise from non-sampling. Finally, GEM selects countries based on various criteria like economic development level, geographical location and cultural diversity to ensure a diverse and representative sample.

3.2 Sample

For this research the newest available data, which is the 2018 APS data, will be used. The data includes data for European countries totaling 18 countries. However, some variables of interest are not included for all countries. The omission of the ease of starting a business is observed in four countries. Furthermore, one country lacks information about the age of the respondents, resulting in these five countries being excluded from my analysis to maintain a consistent methodology. Leaving the analysis with data for 13 European countries; Russia, Greece, The Netherlands, France, Spain, Italy, Switzerland, Sweden, Poland, Bulgaria, Croatia, Slovenia, and Slovakia. The primary data includes 56,891 observations. To ensure a complete analysis of the cultural diversity across countries, all available data will be used from the original dataset. Observations containing missing values will not be used, since our model requires complete data for accurate analysis. Observations of entrepreneurs are restricted to 18-64 age category, which is in line with the Monitor and the current literature like Ramos-Rodríguez, Medina-Garrido, & Ruiz-Navarro (2012) and Ahmad et al. (2014). Furthermore, some outliers are removed as they represent very unlikely numbers. For instance, individuals with a household size of 20 or larger are removed from the data. The final dataset consists of 24,405 observations for Europe. The main reason for the drop in observations is because of missing values for some variables of interest. This can be seen as a limitation of the APS data, since the GEM counts an observation when the APS is conducted, even when empty values exist within a single observation, meaning that these empty values reduce the intended effect of the minimum threshold of 2000 observations per country, which limits the representation of the GEM data.

3.3 Dependent variable

The dependent variable in this research is "Entrepreneurial Activity". This variable measures entrepreneurial intentions and is a binary variable taking value 1 when the answer to the question: "Are you, alone or with others, expecting to start a new business, including any type of self-employment, within the next three years?" is yes and 0 if the answer is no. This variable is used to measure entrepreneurial activity, specifically entrepreneurial intentions, and can be used to measure the percentage of the 18-64 population who intent to start a business within three years. This dependent variable serves as an adequate proxy to measure entrepreneurial intentions because individuals who indicate their intention to start a business within the next three years have self reportedly made this decision and are planning to follow through on this

decision. Therefore, this variable will be utilized to address both the research question and hypothesis. It is important to consider that this variable focusses on entrepreneurial activity through entrepreneurial intention by solely recognizing new business creation as entrepreneurial activity. It does not include other forms of entrepreneurial activity, such as within-firm entrepreneurial activity. This variable is used in many research using the GEM data including in the work of Arafat & Saleem (2017) and Walker et al. (2013).

3.4 Independent variables

To provide an answer to the hypothesis, interaction terms are constructed by combining the independent variables with the variable *Individual Competences*. It is important to provide an understanding of how these independent variables are created and what specific aspects they capture within the sample. While Table 9, in Appendix, presents detailed information on the creation of these variables, it is necessary to separately discuss them in relation to the hypothesis to clarify the thought process behind their selection.

For the first hypothesis, having the knowledge, skills and experience to start a new business is positively associated with entrepreneurial intentions, the variable *Individual Competences* will be utilized to measure the effect of having the knowledge, skills and experience to start a new business. The APS includes a question where the respondents are asked whether they possess the necessary knowledge, skills and experience to start a new business. The response options for this question are limited to "Yes" or "No", making this a binary variable. Therefore, this variable is quite strict, since it requires an individual to possess all three capabilities in order to answer "Yes", however this variable remains the most suitable proxy for measuring individual competences within the dataset. It effectively captures the self-proclaimed knowledge, skills and experience of an individual making it suitable to utilize and formulate an answer to the first hypothesis.

To look at whether the relationship between knowledge, skills and experience and entrepreneurial intentions is negatively moderated by fear of failure, which answers my second hypothesis, the variable *Fear of Failure* will be used. This binary variable takes on the value of "Yes" when an individual believes that the fear of failure prevents him from starting a business and the value of "No" otherwise, making this variable suited to estimate the moderating effect of the fear of failure on entrepreneurial intentions.

The variable *Good Cause* is used to estimate the moderating effect of society's positive cultural valuation on the relationship between individual competences and entrepreneurial intention. This variable reflects whether the respondent thinks that most people in their country consider starting a new business a desirable career choice. This variable captures an individual's opinion on the national cultural characteristics of their country and therefore adds value when reflecting on the moderating effect of the environmental dimension. This binary variable, consisting of "Yes" or "No", is necessary to estimate the moderating effect of interest and will be used to formulate an answer to the third hypothesis.

To examine the moderating effect of an individual experiencing the supportive role of the national public media for entrepreneurs on the relationship between individual competences and entrepreneurial intention, as formulated in the fourth hypothesis, the variable *Media Positivity* is used. This variable aims to capture the extent to which individuals frequently encounter stories about successful businesses in the public media or on the internet. Because it captures the influence of the media on business creation, this variable has multiple layers given the subjectivity of the individual, because local news reports can be different when compared to national news, resulting in reliable data resulting in environmental variation which enables me to estimate the effect of interest. This binary variable, taking the value of "Yes" or "No", is used to formulate an answer to the fourth hypothesis.

Finally, the variable *Easy to Start* will be analyzed to answer the fifth hypothesis which looks at the moderating effect of the ease of starting a business on the relationship between individual competences and entrepreneurial intentions. In the APS individuals are asked whether it is easy to start a business in their respective country. These individuals will answer based on regulations relevant for the individual, which can differ based on the different environments and countries an individual lives in, leading to this variable capturing the environmental diversity present in Europe which is crucial when looking at this environmental moderating effect. The value of this binary value again takes the values "Yes" or "No" and is suitable to formulate an answer to the fifth hypothesis.

3.5 Control variables

To account for potential confounding factors or alternative explanations for the estimated effect of interest, control variables are needed since the absence of these variables can lead to bias. Possibly the most universally used control variables are age and gender, because they are considered external to the influence of individuals. Research done by Zhao et al., (2021) with

results in line with the work of Azoulay et al., (2020) confirm a relationship between entrepreneurial activity and age. Therefore, including age as a control variable in my models increases the explanatory value of my analysis. Additionally, gender is included as a control variable, as findings from the research done by Nowiński et al. (2019) suggest that women express lower entrepreneurial intentions and possess lower levels of entrepreneurial self-efficacy when compared to men.

Not unrelated to individual competences is an individual's educational level. Higher education increases the likelihood of exposure to entrepreneurial education, which has a positive effect on entrepreneurial activity as shown in the results of my literature review. Additionally, results from Hunady et al. (2018) suggest that higher education in general is also beneficial for entrepreneurial activity, leading to the rationale of adding *Educational Level* to my analysis as a control variable. The variable *Educational Level* is an ordered categorical variable and is created by converting the following values: "None", "Some secondary", "Secondary degree", "Post secondary" and "Grad exp", hence *Educational Level* into the values of 1-5 respectively. Therefore, the values of this variable make up an increasing scale and a positive effect between this control variable and entrepreneurial activity is to be expected.

Additionally, *Work Status* will be added as a control variable in my analysis since Özdemir and Karadeniz (2011) found that individuals with an active work status are more likely to engage in entrepreneurial activity when compared to individuals with a non-active work status. The authors suggest that individuals with an active work status may have more opportunities to build up more contacts than individuals with a non-active work status. Following their research, *Work Status* will be a binary variable, containing the value of 1 when an individual works full-time or part-time and a value of 0 when an individual is retired, disabled, not working, a homemaker or a student. This way a distinction is made between active workers and non-active workers. This distinction is in line with the work of Özdemir and Karadeniz (2011), therefore adding *Work Status* into my model will improve the explanatory value and reduce omitted variable bias.

The household situation of an individual can have significant impact on his entrepreneurial choices. This is evident from the work of Yin et al. (2019), who found a positive and significant effect of household size on entrepreneurial activity. Furthermore, a persistent correlation was found between household income and entrepreneurial activity in the research of Lim et al. (2016). These findings underline the importance of considering household factors as control variables in my model.

Given these findings, *Household Size* and *Household Income* will be included in my models. The variable *Household Size* consists of continuous data for the number of household members, while *Household Income* is a categorical variable derived from the relative positioning of the household income of the individual. The APS data has divided the household income values into three groups: lowest, middle, and highest 33% tiles within the dataset. Therefore, the values of *Household Income* are represented as 1, 2 and 3 respectively. It is important to note that the GEM data does not provide the raw income data for observations, therefore this categorical variable is utilized since it is the closest proxy for measuring the household income of an individual within this data.

The descriptive statistics of the final data sample are captured in Table 1. This final sample does not include big outliers and values are relatively mean for most variables. Furthermore, the mean of the variable *Age* is consistent with the Monitor since the data for this continuous variable has been cleaned according to the regulations of the Monitor. Additionally, this sample is representative of gender given the mean value of this variable. Finally, the education level for individuals in the final sample is averaged around "secondary degree", which is representative for individuals in Europe. Table 2 presents the correlation table. The absence of high correlations in the data may alleviate multicollinearity concerns. Finally, Table 9 has been added to the Appendix, which provides a detailed explanation of how the variables used in my models have been created to ensure transparency in my methodology.

Table 1 Descriptive statistics using GEM 2018 APS for 13 European countries

Variable	Obs	Mean	Std. dev.	Min	Max
Entrepreneurial Activity	24,405	0.116	0.320	0	1
Individual Competences	24,405	0.493	0.500	0	1
Fear of Failure	24,405	0.453	0.498	0	1
Good Cause	24,405	0.598	0.490	0	1
Media Positivity	24,405	0.521	0.500	0	1
Easy to Start	24,405	0.371	0.483	0	1
Work Status	24,405	0.736	0.441	0	1
Household Income	24,405	1.993	0.838	1	3
Household Size	24,405	3.162	1.312	1	20
Education Level	24,405	3.253	0.924	1	5
Age	24,405	42.802	12.650	18	64
Gender	24,405	1.478	0.500	1	2

Table 2 Correlation table using GEM 2018 APS for 13 European countries

	1	2	3	4	5	6	7	8	9	10	11	12
1. Entrepreneurial Activity	1											
2. Individual Competences	0.174	1										
3. Fear of Failure	-0.078	-0.183	1									
4. Good Cause	0.029	0.012	-0.021	1								
5. Media Positivity	0.046	0.038	-0.026	0.103	1							
6. Easy to Start	0.014	0.077	-0.104	0.124	0.094	1						
7. Work Status	0.034	0.158	-0.062	-0.003	0.013	0.093	1					
8. Household Income	0.021	0.107	-0.080	-0.001	0.017	0.074	0.223	1				
9. Household Size	0.044	0.054	-0.004	0.057	-0.009	0.023	0.090	0.202	1			
10. Educational Level	0.060	0.110	-0.034	-0.041	0.004	0.048	0.175	0.326	0.008	1		
11. Age	-0.150	-0.006	-0.018	-0.036	0.023	-0.015	-0.136	-0.028	-0.158	-0.048	1	
12. Gender	-0.058	-0.145	0.085	-0.016	-0.018	-0.061	-0.124	-0.103	0.005	0.037	0.003	1

Note: Some correlations might seem different from what would be expected based on the current literature, for example a correlation of ~0.33 between *Educational Level* and *Household Income*. The reason for this is the measurement of these categorical variables by GEM. *Household Income* can be incomes combined when living with one or more partners and is measured in 33% tiles, allowing for divergent estimations of correlations with *Educational Level*. A full description of the variables is added in the Appendix.

4. Methodology

The methodology used in this study is based on the logistic regression model. Since the dependent variable used in my research is binary and logistic regression is a statistical technique used to analyze binary outcomes, a logit model will be used to estimate the effects of interest. The logit model assumes a linear relationship between the log-odds of the binary outcome variable and the predictor variables. The relationship between these factors is often expressed as follows:

$$\text{Log}(P/(1-P)) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + (\beta_3 X_1 X_2) \ldots + \beta_p X_p$$

In this equation:

- $P(Y=1)$ represents the possibility that the dependent binary variable Y takes value 1 (representing entrepreneurial activity in this research).
- $X_1, X_2, \ldots, X_p$ represent the predictor variables as reported in Table 9 in Appendix.
- $\beta_3 X_1 X_2$ represents the interaction effect to measure the moderating effect of interest.
- $B_1, \beta_2, \ldots, \beta_p$ represent the coefficients associated with each of the predictor variables, determining the impact of each predictor variable on the log-odds of the dependent variable taking the value of 1.

Robust standard errors are used when conducting logistic regression analysis. This allows me to obtain robust standard errors for the estimated coefficients, which improves my model given that it accounts for the heteroskedasticity present in my sample. Finally, country-fixed effects have been added to all logistic models to account for unobserved heterogeneity. This is done to control for differences between countries that might affect the outcome but are not explicitly measured in the data. This helps to isolate the impact of the variables of interest from the unobserved variation between countries.

5. Results

5.1 Main findings

The results from the logistic regressions are reported in Table 3. Model 1 provides insights into the relationship between entrepreneurial activity and the independent variables and functions as a base model. Furthermore, the results do not reject the first hypothesis, given that a positive and significant coefficient for *Individual Competences* is found. Models 2, 3, 4 and 5, consisting of the base model with interaction effects, were created to estimate the moderating effect of the different factors discussed in the literature review to formulate an answer to the hypothesis. Model 6 illustrates all interaction effects and provides insights into the relative magnitude and significance of these interactions when explaining the outcome variable. Model 4 did not provide evidence for the fourth hypothesis, since the estimated coefficient for the interaction between *Individual Competences* and *Media Positivity* is insignificant. The interaction effects of the other models reported in Table 3 do suggest evidence in favor of their respective hypothesis. Therefore, the results suggest evidence for most hypothesis and show that the effect of *Individual Competences* on *Entrepreneurial Activity* is dependent on environmental cultural factors. Therefore, providing evidence for the influence of environmental cultural factors on the relationship between individual competences and entrepreneurial activity for European countries.

Table 3 Logistic models using GEM 2018 APS for 13 European countries

Entrepreneurial Activity	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Individual Competences	1.163***	1.025***	1.417***	1.090***	1.328***	1.310***
	(0.045)	(0.063)	(0.082)	(0.072)	(0.061)	(0.106)
Fear of Failure	-0.294***	-0.520***	-0.296***	-0.294***	-0.301***	-0.514***
	(0.045)	(0.079)	(0.045)	(0.045)	(0.045)	(0.079)
Good Cause	0.140**	0.141**	0.418***	0.140**	0.142**	0.399***
	(0.046)	(0.046)	(0.083)	(0.046)	(0.046)	(0.084)
Media Positivity	0.227***	0.225***	0.228***	0.137	0.225***	0.089
	(0.044)	(0.044)	(0.044)	(0.078)	(0.044)	(0.079)
Easy to Start	-0.141**	-0.137**	-0.137**	-0.140**	0.166*	0.143
	(0.051)	(0.051)	(0.051)	(0.051)	(0.083)	(0.083)
Work Status	-0.142**	-0.140*	-0.138*	-0.141**	-0.141**	-0.135*
	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)
Household Income	-0.069*	-0.067*	-0.068*	-0.069*	-0.066*	-0.065*
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)
Household Size	0.050**	0.050**	0.050**	0.050**	0.051**	0.051**
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
Educational Level	0.125***	0.125***	0.124***	0.125***	0.124***	0.123***
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)

Table 3 Logistic models using GEM 2018 APS for 13 European countries (Continued)

Entrepreneurial Activity	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Age	-0.040***	-0.039***	-0.039***	-0.040***	-0.039***	-0.039***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Gender	-0.242***	-0.239***	-0.241***	-0.241***	-0.241***	-0.238***
	(0.044)	(0.044)	(0.044)	(0.044)	(0.044)	(0.044)
Competences*Fear of Failure		0.336***				0.311**
		(0.096)				(0.096)
Competences*Good Cause			-0.392***			-0.362***
			(0.098)			(0.099)
Competences*Media Positivity				0.129		0.194*
				(0.093)		(0.093)
Competences*Easy to Start					-0.438***	-0.394***
					(0.095)	(0.096)
Country-Fixed Effects	YES	YES	YES	YES	YES	YES
Constant	-1.860***	-1.786***	-2.036***	-1.815***	-1.970***	-1.985***
	(0.196)	(0.196)	(0.203)	(0.198)	(0.198)	(0.205)
Observations	24405	24405	24405	24405	24405	24405
Log-Likelihood	-7743	-7737	-7735	-7742	-7733	-7719

Robust standard errors in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, where Competences stands for individual competences. Robust standard errors are used.

5.2 Further analysis

The logistic models and their respective results are reported in Table 3. Model 1 functions as a base model answering the first hypothesis, while the other models are used to estimate the moderating effects of interest. Since my main interest for the first hypothesis was to test the base effect of *Individual Competences* on the *Entrepreneurial Activity*, the first hypothesis can be answered. The results in Model 1 show that having the knowledge, skills and experience to start a new business is positively associated with entrepreneurial intentions, since the coefficient is positive and significant. This coefficient indicates that, holding all other variables constant, individuals possessing the individual competences, have an increase of 1.163 in the log-odds of engaging in entrepreneurial activity. This means an individual with these self-reported competences is 3.2[1] times more likely to engage in entrepreneurial activity when compared to someone without these self-reported competences, holding other variables constant, significant at a 0.1% significance level.

Within model 1, the *Fear of Failure* and *Easy to Start* have a significant negative effect and thereby decrease entrepreneurial activity, while the other dependent variables have a positive

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[1] $e^{1.163} = 3.199$

effect. The negative effect of *Easy to Start* can be explained by a lack of commitment of individuals, when the barriers to entry are low. Individuals might not invest the time, effort and resources needed for long-term success because they perceive it as a low-risk, low-effort undertaking. Furthermore, a significant positive effect, in line with the expected associations based on the literature review, was found for the other explanatory variables, thereby accounting for potential confounding factors that influence my effect of interest. Finally, Model 1 found significant coefficients for the control variables.

To further analyze my hypothesis, I have created the same base model and added the interaction term between *Individual Competences* and *Fear of Failure.* As the results from Model 2 show, the estimated coefficient of this interaction is positive. It can be seen that when the *Fear of Failure* is present, the effect from *Individual Competences* on *Entrepreneurial* Activity is larger, given this significant positive interaction effect. Therefore, suggesting evidence to support the positively moderated relationship between knowledge, skills and experience and entrepreneurial intentions by the fear of failure for European countries.

The third hypothesis tested the relationship between knowledge, skills and experience and entrepreneurial intentions and whether this was negatively moderated by society's positive cultural valuation on entrepreneurs. The results, reported in Model 3, show a negative coefficient for the interaction effect of *Individual Competences* with *Good Cause.* This means that when an individual experiences a positive cultural valuation from society, the effect of *Individual Competences* on *Entrepreneurial Activity* will be smaller, ceteris paribus. Therefore, suggesting evidence for my third hypothesis, indicating that a positive cultural valuation for entrepreneurs functions as a negative moderator for the relationship between *Individual Competences* and *Entrepreneurial Activity.*

In the context of the fourth hypothesis, the focus was on the moderating influence of the national media on the relationship between *Individual Competences* and *Entrepreneurial Activity*. The findings obtained, reported in Model 4, indicate that individuals residing in a country where they reportedly frequently come across success stories of entrepreneurs, exhibit a larger effect of *Individual Competences* on *Entrepreneurial Activity* when compared to individuals reporting to not live in such a country. However, the coefficient of the interaction between *Individual Competences* and *Media Positivity* is insignificant. Therefore, Model 4 does not provide evidence to support the fourth hypothesis.

To answer the final hypothesis and look at whether the ease of starting a business is a negative moderator for the relationship between knowledge, skills and experience and entrepreneurial intentions, the interaction between *Individual Competences* and *Easy to Start* is estimated and illustrated in Model 5. The coefficient for this interaction effect is negative and significant, suggesting that the ease of starting a business functions as a negative moderator for the relationship between *Individual Competences* and *Entrepreneurial Activity,* thereby suggesting evidence to support my final hypothesis.

The results, illustrated in Table 3, suggest evidence for most hypothesis and show that various environmental cultural factors influence the relationship between *Individual Competences* and *Entrepreneurial Activity.* An overview of the hypothesis support per dependent variable is illustrated in Table 4.

Table 4 Overview of the hypothesis support per dependent variable for 13 European countries

	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5
Individual Competences	√				
Fear of Failure		√			
Good Cause			√		
Media Positivity				×	
Easy to Start					√

6. Additional analysis

6.1 General description of additional analysis

My main analysis used data for 13 European countries. However, the GEM data is limited to this extent, particularly regarding the validity of the subjective nature of the collected information on the entrepreneurial context, pointed out by Coduras & Autio (2013). The use of GEM data for macro-level analysis on a global scale is challenging because of the subjective nature of the survey questions, as confirmed in the work of Sánchez-Escobedo et al. (2016) and Bosma (2013). This is because the respondent's answers on national characteristics vary across countries due to the different cultures of these countries. This implies that certain outcomes could be influenced by the presence of this measurement error.

To address this potential measurement error, many researchers analyze the entrepreneurial factors of a single country within the GEM data to ensure a more robust analysis. This approach is reflected in the work of Coduras et al. (2008) and Zamberi et al. (2012). I take a similar approach and address this by providing an additional analysis, focusing solely on the data collected from Spain. Because the Monitor collected the data primarily on landline-based surveys, Spain was chosen due to having the highest number of observations within the GEM dataset, given its high respondent rate. Furthermore, the current literature underscores the relevancy of Spain within the GEM data, given that many papers have analyzed entrepreneurial activity in Spain. (Velilla 2018 and Turro et al. 2016). This relative high number of observations combined with analyzing a single country and therefore selecting a more narrowly defined group, allows me to compare results and address the measurement bias present when analyzing a larger group of countries.

Despite the national context of the questions in the APS, there is plenty of variation in the responses of the same national survey question, which presents an opportunity to analyze and estimate the moderating effect of interest for individuals from Spain. The variation in answers, related to the independent variables, can be explained by the fact that Spain is divided into 17 autonomous communities, each with its own regional government and some degree of legislative autonomy. This phenomenon is further illustrated by Church et al. (2011), who show that different levels of within-country culture impact entrepreneurial activity, highlighting the relevance and viability of conducting an analysis to factors influencing entrepreneurial activity within a specific country.

The final sample, using GEM 2018 APS data which is cleaned similarly to the sample in Chapter 5, contains 9,219 observations for Spain. To ensure that my findings are less driven by specific characteristics of the GEM 2018 APS data because of this relatively low number of observations, data from the GEM 2016 APS and GEM 2017 APS will be integrated into a second sample alongside the GEM 2018 APS data. These two samples serve to examine whether the insights obtained align with the outcomes of the initial research of this paper. The data from 2016 and 2017 is cleaned similarly to the 2018 data. By aligning the data methodologies of this additional analysis with the methodology described in Chapter 4, a new dataset is generated containing 7,970 and 9,384 observations for 2016 and 2017 respectively, resulting in the second sample containing 26,573 observations for Spain across three years. By being consistent in the data-cleaning and methodology, the results from this additional analysis provide insights into the possible presence of measurement bias in my initial research and helps to increase its validity.

6.2 Results additional analysis

The results are reported in Table 5 and 6. Models 7 and 13 provide evidence for the first hypothesis since a significant positive association is found between *Entrepreneurial Activity* and *Individual Competences*. Additionally, Model 12 illustrates a negative and significant interaction between *Individual Competences* and *Easy to Start*, which supports the fifth hypothesis. These results confirm the outcomes of my initial research to a small extent, but do not directly contradict the findings from multiple European countries. The other estimated coefficients in Table 4 and 5, estimated to formulate an answer to the hypothesis, are found insignificant, indicating a lack of evidence to draw conclusions based on the estimated coefficients of these models. Therefore, the significant results obtained from this additional analysis are in support of the estimates of my initial models and increase the validity of their respective findings. However, most estimated coefficients are found insignificant. A reason for this could be the analysis of international questions in a national context. Additionally, no significant values were found contradicting the effect found in my initial research. The comparison between the significant results from this additional analysis and my main results, illustrates that those findings are not significantly driven by a measurement error of the GEM 2018 APS dataset which increases external validity. Finally, Table 7 contains an overview of the hypothesis support per sample of the APS data for Spain.

Table 5 Logistic models using GEM 2018 APS for Spain

Entrepreneurial Activity	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
Individual Competences	1.113***	1.126***	1.063***	1.075***	1.254***	1.161***
	(0.094)	(0.123)	(0.130)	(0.132)	(0.112)	(0.170)
Fear of Failure	-0.325***	-0.302	-0.325***	-0.324***	-0.329***	-0.294
	(0.083)	(0.159)	(0.083)	(0.083)	(0.083)	(0.158)
Good Cause	-0.104	-0.104	-0.179	-0.104	-0.104	-0.198
	(0.079)	(0.079)	(0.159)	(0.079)	(0.079)	(0.161)
Media Positivity	0.215**	0.215**	0.215**	0.159	0.214**	0.124
	(0.080)	(0.080)	(0.080)	(0.160)	(0.080)	(0.164)
Easy to Start	-0.091	-0.091	-0.091	-0.091	0.274	0.298
	(0.088)	(0.088)	(0.088)	(0.088)	(0.169)	(0.172)
Work Status	-0.227*	-0.227*	-0.227*	-0.227*	-0.229*	-0.230*
	(0.095)	(0.095)	(0.095)	(0.095)	(0.095)	(0.095)
Household Income	-0.034	-0.034	-0.034	-0.034	-0.031	-0.032
	(0.050)	(0.050)	(0.050)	(0.050)	(0.050)	(0.050)
Household Size	0.077*	0.077*	0.077*	0.077*	0.077*	0.077*
	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)
Educational Level	0.142**	0.142**	0.142**	0.142**	0.143**	0.143**
	(0.050)	(0.050)	(0.050)	(0.050)	(0.050)	(0.050)
Age	-0.036***	-0.036***	-0.036***	-0.036***	-0.036***	-0.036***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Gender	-0.158*	-0.158*	-0.159*	-0.158	-0.154	-0.154
	(0.081)	(0.081)	(0.081)	(0.081)	(0.081)	(0.081)
Competences*Fear of Failure		-0.031				-0.048
		(0.186)				(0.184)
Competences*Good Cause			0.099			0.123
			(0.182)			(0.185)
Competences*Media Positivity				0.074		0.119
				(0.183)		(0.187)
Competences*Easy to Start					-0.484*	-0.516**
					(0.196)	(0.200)
Constant	-1.791***	-1.800***	-1.753***	-1.763***	-1.904***	-1.835***
	(0.278)	(0.285)	(0.282)	(0.285)	(0.282)	(0.294)
Observations	9219	9219	9219	9219	9219	9219
Log-Likelihood	-2421	-2421	-2421	-2421	-2418	-2417

Robust standard errors in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, where Competences stands for individual competences. Robust standard errors are used.

Table 6 Logistic models using GEM 2016, 2017 and 2018 APS for Spain

Entrepreneurial Activity	Model 13	Model 14	Model 15	Model 16	Model 17	Model 18
Individual Competences	1.259***	1.322***	1.229***	1.241***	1.279***	1.299***
	(0.058)	(0.076)	(0.079)	(0.078)	(0.065)	(0.106)
Fear of Failure	-0.268***	-0.166	-0.268***	-0.268***	-0.269***	-0.165
	(0.049)	(0.095)	(0.049)	(0.049)	(0.049)	(0.095)
Good Cause	-0.059	-0.059	-0.104	-0.059	-0.059	-0.105
	(0.048)	(0.048)	(0.096)	(0.048)	(0.048)	(0.097)

Table 6 Logistic models using GEM 2016, 2017 and 2018 APS for Spain (Continued)

Entrepreneurial Activity	Model 13	Model 14	Model 15	Model 16	Model 17	Model 18
Media Positivity	0.159***	0.158***	0.159***	0.131	0.159***	0.127
	(0.048)	(0.048)	(0.048)	(0.096)	(0.048)	(0.098)
Easy to Start	-0.022	-0.023	-0.022	-0.022	0.033	0.050
	(0.052)	(0.052)	(0.052)	(0.052)	(0.106)	(0.108)
Work Status	-0.217***	-0.218***	-0.217***	-0.217***	-0.217***	-0.218***
	(0.052)	(0.053)	(0.052)	(0.052)	(0.052)	(0.053)
Household Income	-0.088**	-0.089**	-0.089**	-0.089**	-0.088**	-0.089**
	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)
Household Size	0.121***	0.121***	0.121***	0.121***	0.121***	0.121***
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)
Educational Level	0.133***	0.133***	0.133***	0.133***	0.133***	0.133***
	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)
Age	-0.030***	-0.030***	-0.030***	-0.030***	-0.030***	-0.030***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Gender	-0.003	-0.003	-0.003	-0.003	-0.003	-0.003
	(0.047)	(0.047)	(0.047)	(0.047)	(0.047)	(0.047)
Competences*Fear of Failure		-0.138				-0.140
		(0.111)				(0.111)
Competences*Good Cause			0.060			0.060
			(0.109)			(0.111)
Competences*Media Positivity				0.037		0.040
				(0.110)		(0.112)
Competences*Easy to Start					-0.071	-0.094
					(0.121)	(0.123)
Year Fixed Effects	YES	YES	YES	YES	YES	YES
Constant	-2.542***	-2.590***	-2.519***	-2.529***	-2.558***	-2.575***
	(0.179)	(0.185)	(0.182)	(0.183)	(0.180)	(0.191)
Observations	26573	26573	26573	26573	26573	26573
Log-likelihood	-6807	-6806	-6807	-6807	-6807	-6806

Robust standard errors in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, where Competences stands for individual competences. Robust standard errors are used.

Table 7 Overview of the hypothesis support for the APS data from Spain

	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5
Spain 2018	√	Insignificant	Insignificant	Insignificant	√
Spain 2016-2018	√	Insignificant	Insignificant	Insignificant	Insignificant

7. Robustness check

Since my main research does not take into account the interplay between cultural factors and its influence on entrepreneurial activity, I ran the same estimations for the initial sample using an index to capture the interplay between three cultural factors influencing entrepreneurial activity. *Brings Status* is a binary variable which captures whether starting an enterprise, in a certain country, brings status upon that individual, see Table 9 in Appendix. Furthermore, *Good Cause* and *Media Positivity* are used to create this index. The literature shows that research, utilizing the GEM data, often captures *Good Cause, Brings Status* and *Media Positivity* into a single variable as they describe the cultural factors within the environmental dimension. This is reflected in the research of Tominc & Rebernik (2007), who incorporate these three variables into an index used in their research. Furthermore, this index, consisting of *Good Cause, Brings Status* and *Media Positivity* follows the work of Frederick (2004) and aligns with the GEM's methodology. Therefore, *Positive Culture* will be added to the analysis. It will be assigned a value of 1 when at least two of the following variables have a value of 1: *Good Cause, Brings Status*, or *Media Positivity*; otherwise, it will be assigned a value of 0. This index estimates the interplay of the respective variables, which is expected to have a positive effect on entrepreneurial activity since the value of *Positive Culture* is reflected by the answers of these independent variables. Furthermore, since I expected a negative moderating effect for the independent variables of the *Positive Culture* index, a negative moderating effect for *Positive Culture* is to be expected. The findings of this robustness check are presented in Table 8.

Given the significant findings, illustrated in Models 19-23, the results are very similar. In line with expectations, *Positive Culture* has a positive direct effect on *Entrepreneurial Activity*. Additionally, the coefficient of the interaction between *Individual Competences* and *Positive Culture* is negative and significant, illustrating the importance of considering the interplay between the variables of this index and illustrating its moderating effect. Furthermore, while controlling for *Positive Culture,* evidence in support of the first hypothesis was found given the positive effect of *Individual Competences* on *Entrepreneurial Activity*, illustrated in Model 19. Additionally, the negative coefficient of the interaction between *Individual Competences* and *Fear of Failure* is in line with hypothesis 2, as illustrated in Model 20. Finally, the results from Model 22 are in line with my final hypothesis, because this model shows a negative coefficient for the interaction between *Individual Competences* and *Easy to Start*. These findings show that, when considering the interplay between cultural factors influencing entrepreneurial activity, the moderating roles of the environmental factors are in line with my main findings.

Furthermore, the results illustrate that *Positive Culture* functions as a negative moderator for the relationship between *Individual Competences* and *Entrepreneurial Activity,* adding to the current literature on explaining entrepreneurial activity.

Table 8 Logistic models using 2018 APS for 13 European countries functioning as a robustness check using positive culture index

Entrepreneurial Activity	Model 19	Model 20	Model 21	Model 22	Model 23
Individual Competences	1.166***	1.026***	1.410***	1.333***	1.390***
	(0.050)	(0.063)	(0.084)	(0.061)	(0.096)
Fear of Failure	-0.297***	-0.526***	-0.299***	-0.305***	-0.520***
	(0.045)	(0.079)	(0.045)	(0.045)	(0.079)
Positive Culture	0.198***	0.199***	0.456***	0.200***	0.424***
	(0.046)	(0.046)	(0.085)	(0.046)	(0.086)
Easy to Start	-0.128*	-0.124*	-0.124*	0.183*	0.146
	(0.051)	(0.051)	(0.051)	(0.083)	(0.083)
Work Status	-0.139*	-0.137*	-0.137*	-0.138*	-0.135*
	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)
Household Income	-0.069*	-0.067*	-0.067*	-0.066*	-0.064*
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)
Household Size	0.049**	0.050**	0.049**	0.050**	0.050**
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
Educational Level	0.124***	0.124***	0.124***	0.123***	0.123***
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
Age	-0.039***	-0.039***	-0.039***	-0.039***	-0.039***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Gender	-0.241***	-0.239***	-0.241***	-0.241***	-0.238***
	(0.044)	(0.044)	(0.044)	(0.044)	(0.044)
Competences*Fear of Failure		0.341***			0.318***
		(0.096)			(0.096)
Competences*Positive Culture			-0.363***		-0.314**
			(0.010)		(0.101)
Competences*Easy to Start				-0.444***	-0.381***
				(0.095)	(0.097)
Country-Fixed Effects	YES	YES	YES	YES	YES
Constant	-1.780***	-1.705***	-1.950***	-1.891***	-1.953***
	(0.194)	(0.194)	(0.201)	(0.196)	(0.202)
Observations	24405	24405	24405	24405	24405
Log-Likelihood	-7754	-7747	-7747	-7743	-7732

Robust standard errors in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, where Competences stands for individual competences. Robust standard errors are used.

8. Conclusion, discussion and implications

In this study I used the GEM 2018 APS data to examine how the environmental dimension influences the relationship between the individual dimension and entrepreneurial activity. I did so by examining the effect of individual competences on entrepreneurial activity when faced with cultural and environmental diversity for 13 European countries. My research, utilizing a logistic model, found support for all hypothesis, with the exception of hypothesis 4. When considering the interplay of cultural factors influencing entrepreneurial activity, additional support for multiple hypothesis was found. My research showed that the effect of individual competences on entrepreneurial activity varies across different environmental factors such as the fear of failure, societal valuation on entrepreneurs and entrepreneurship regulations. These results add to the current literature on explaining entrepreneurial activity by using the complex interplay between the individual dimension and environmental factors.

Firstly, this study suggests that the effect of individual competences on entrepreneurial activity varies across different countries and environments. This implies that the effectiveness of the skills of an individual, having a positive effect on entrepreneurial activity, can be influenced by specific cultural and environmental aspects. This underlines the notion that entrepreneurship is not just an individual-level phenomenon and confirms the complexity of explaining entrepreneurial activity by examining the interplay across different dimensions as discussed by Gartner (1985). This paper found that the discussed environmental factors play a significant role in explaining whether an individual with certain individual competences is more likely to engage in entrepreneurial activity. Given the sample contains data for individuals from 13 different European countries, the findings indicate that the different environments of the individuals affect the relationship between individual competences and entrepreneurial activity. This paper gives a direction to the effect of some environmental aspects, but given the complexity and diversity of one's environment, these results could be further researched using other datasets, including more aspects related to environments than the ones discussed in this paper. Furthermore, additional research could go into the question of why the perception of an individual is deviating from another individual with regard to the same national questions and which factors cause the most significant diversion. Therefore, further research could delve into the social research domain to reach better insights into the interaction between the environmental factors of this paper and different individual characteristics, which would provide additional insights into this complex relationship since the same environments might have a different interplay with different individuals.

Secondly, this paper has direct implications for European countries regarding its policymaking. Since the examined factors can enlarge entrepreneurial activity, countries can use this to their advantage when the creation of enterprises is desirable. Countries can enhance factors such as individual competences and media positivity to increase the likelihood of individuals engaging in entrepreneurial activity to eventually benefit from the creation of enterprises and increase their economic growth (Nexford 2023, Acs & Szerb 2007, Thurik 2009). Furthermore, this paper provides information about the moderating effects of certain environmental aspects which are directly controllable by the policy of a country. Countries can use this information into their policymaking process, considering the moderating influence of factors such as barriers to entry. This enhances the depth of information available to policymakers and fosters improved decision-making. Since my sample only included individuals from Europe, these implications could be extended to other continents by using alternative data sources in further research. By using data sources which can account for intercontinental measurement errors, it becomes possible to research these environmental factors intercontinentally and make comparisons across continents with their consequent implications, increasing its relevancy and implications. Finally, further research could be done on how these interventions or changes in policy can affect the moderating effect of environmental factors on the relationship between individual competences and entrepreneurial activity.

Thirdly, this research provides valuable insights into the situation of Europe and Spain, given its international context, however it does not look into the changes of entrepreneurial behavior when faced with international businesses. An international startup in a European country, with diversity in its creators, could alter entrepreneurial behavior when environmental factors in the country of the startup are perceived differently when compared to the home country of the individual engaging in this new business. This research laid the basis for an examination of the relative effect of individual competences on entrepreneurial activity when faced with different environments, but this scope could be enlarged in further research.

9. Limitations

A limitation of this study is that potential reverse causality is not addressed, which could be an issue given that individuals who start an enterprise will want to acquire the knowledge, skills and experience they consider necessary to successfully start an own enterprise. Given that the GEM uses a survey to collect data, an appropriate instrumental variable was not found to address this concern. Furthermore, a Granger-causality test was not suited given the yearly data consists of different individuals every year. Therefore, the results and forthcoming conclusions of this paper should be interpreted with caution, taking into account the potential influence of reverse causality.

Given the sample of my data, the results obtained are likely to be survey specific. The survey of GEM involves closed-ended questions and scaled responses, which limits the information that can be gathered. In addition to the possible measurement error, respondents can cause self-selection bias. This bias can lead to inaccurate data, causing problems with interpretating the results.

Finally, according to Bosma (2013), GEM was not designed to answer all aspects related to entrepreneurship. This paper uses the variable *Entrepreneurial Activity* as a proxy for entrepreneurial activity. While this variable is utilized in many papers, it does not capture all forms of entrepreneurship. For example, *Entrepreneurial Activity* does not take into account entrepreneurial activity within a firm, but only includes the creation of new businesses. Consequently, conclusions with regard to this outcome variable should be placed into context considering the limitation of the entrepreneurial activity captured by the outcome variable.

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11. Appendix

Table 9 Description of variables

Name	Type	Description
Entrepreneurial Activity	Dependent	Answer To the question: "Are you, alone or with others, expecting to start a new business, including any type of self-employment, within the next three years?" Possible values: "Yes" and "No". Where "Yes" takes value 1 and "No" takes value 0.
Individual Competences	Independent	Answer To the question: "Do you have the knowledge, skill and experience required to start a new business?" Possible values: "Yes" and "No". Where "Yes" takes value 1 and "No" takes value 0.
Fear of Failure	Independent	Answer to the question: "Would fear of failure prevent you from starting a business?" Possible values: "Yes" and "No". Where "Yes" takes value 1 and "No" takes value 0.
Good Cause	Independent	Answer to the question: "In my country, most people consider starting a new business a desirable career choice" Possible values: "Yes" and "No". Where "Yes" takes value 1 and "No" takes value 0.
Brings Status	Independent	Answer to the question: "In my country, those successful at starting a new business have a high level of status and respect" Possible values: "Yes" and "No". Where "Yes" takes value 1 and "No" takes value 0.
Media Positivity	Independent	Answer to the question: "In my country, you will often see stories in the public media and/or internet about successful new businesses" Possible values: "Yes" and "No". Where "Yes" takes value 1 and "No" takes value 0.
Positive Culture	Independent Index	Index of Good Cause, Brings Status and Media Positivity. Takes value 1 when the combined value of these three variables is equal to 2 or larger and takes value 0 otherwise.
Easy to Start	Independent	Answer to the question: "In my country, it is easy to start a business" Possible values: "Yes" and "No". Where "Yes" takes value 1 and "No" takes value 0.try, it is easy to start a business"
Work Status	Control	A dummy variable making a distinction between individuals with a "Full or part time", "Part time only", "Retired, disabled", "Homemaker", "Student" and "Not working" work status, taking values 1 when an individuals is working "Full or part time" and "Part time only" and takes value 0 otherwise.
Household Income	Control	Household Income measured relatively into thirds consisting of 33$-3,467$ (lowest 33% tile), 3,467$-68,100$ (middle 33% tile) and 68,100 and higher (highest 33% tile). Therefore, containing values 1,2 and 3 respectively.

Table 9 Description of variables (Continued)

Name	Type	Description
Educational Level	Control	Educational attainment level measured on 5 in levels: "None", "Some secondary", "Secondary degree", "Post secondary" and "Grad exp" The data contains the values for these education attainments respectively: 1, 2, 3, 4 and 5.
Gender	Control	Gender measured in "Male" and "Female" with values 1 and 2 respectively.
Age	Control	Age measured in years of filling in survey.
Household Size	Control	Household size measured in members of household.