



Multilevel Analysis of Entrepreneurial Activity: Exploring Individual-level Determinants and the Moderating Role of National Culture

Zakia Setti

Ecole Nationale Supérieure de Management (ENSM), Pole Universitaire de Koléa, Tipaza, Algeria

Renata Osowska* and Piotr Marek Jaworski

Edinburgh Napier University, Scotland, UK

Abstract. In this paper, we argue that national culture is important for explaining variations in entrepreneurial activity across countries. We examine both direct and interaction (moderation) effects of culture on entrepreneurial activity by applying a hierarchical logistic regression model for multilevel analysis. We use individual-level data for 84 countries that participated in the Global Entrepreneurship Monitor (GEM) from 2009 to 2013 (969,246 observations) merged with national-level data on the cultural context from GEM's National Expert Survey (NES). The results of our empirical analysis imply that a supportive culture towards entrepreneurship not only positively affects the number of entrepreneurs but also the allocation of entrepreneurs towards higher shares of women and lower educated individuals, arguably two demographic groups in the labour market with lower confidence levels. These findings are of particular relevance for the future development of entrepreneurship and understanding of existing relationships between individual and cultural factors. This focus also provides insight into how entrepreneurship can be designed according to the cultural context, serving future policy development.

Keywords: national culture, individual attributes, multilevel analysis, GEM.

1. Introduction

It has often been argued that entrepreneurial activity and new firm formation generate economic growth and employment, which, in turn, improve the overall well-being of people's lives (Baumol, 1990; Birch, 1979; Van Stel et al., 2005; Wennekers and Thurik, 1999). With its ability to create jobs and enhance the standard of living, many scholars and policymakers consider entrepreneurship as a valuable solution to many social and economic problems. Davidsson and Wiklund (2001) have noted that one of the main reasons for the increased interest in entrepreneurship is the belief that entrepreneurial activity can do 'untold goods for society'. Thus, this interest has brought a considerable growth

* Corresponding Author: Lecturer, Edinburgh Napier University, Craiglockhart Campus, 219 Colinton Road, Edinburgh EH14 1DJ, Scotland, UK. Email: r.osowska@napier.ac.uk

of research focused on individual and economic factors to explain the emergence of new enterprises (Gartner, 1988; Arenius and Minniti, 2005). Recently, scholars have pointed out the importance of social and cultural factors in the decision to start a new firm, asserting that entrepreneurship is a complex phenomenon embedded in a social context in which the firms are created (Thornton, 1999; Granovetter, 2000; Welter, 2011; Zahra et al., 2014).

Nevertheless, the idea that individuals, and in particular entrepreneurs are affected by their cultural context is not new. Weber's (1904) research illustrated how attributes of culture-specific values produce entrepreneurial behaviour. However, one of the difficulties in exploring the impact of culture on the decision to create a new business is the absence of a common and a precise definition of culture (Swidler, 1986; McGrath et al., 1992). Kroeber and Parsons (1958) suggested that culture is related to the ways in which societies organise social behaviour and knowledge, whereas House et al. (2004) defined national culture as a country's shared practices and values. For the latter approach, which derives from the Weberian model, values remain the major link between culture and action (Swidler, 1986). Consequently, it is important to identify how national cultural characteristics influence the level of entrepreneurial activity across countries. The review conducted by Hayton and Cacciotti (2013) shows that this issue remains unresolved. In particular, surprisingly little is known about how national cultures influence entrepreneurial behaviours of individuals (Begley and Tan, 2001; Hayton et al., 2002; Freytag and Thurik, 2007).

Moreover, entrepreneurship research often tends to use individual-level operationalisations of cultural dispositions, thereby ignoring the fact that, as a set of shared belief systems, culture is primarily a collective construct (Hofstede, 1980) which leads to the issue of ecologic fallacy. Measuring culture, as the individual perceives it, may, therefore, mask the effects of cultural practices on the individual's behaviours.

Autio et al. (2010) reported that, of the several studies they examined which analysed the effects of national cultural attributes upon individual-level behaviours by mixing national-level and individual-level operationalisations, not one had used appropriate multi-level techniques to analyse the data, thereby increasing the risk of generating 'false positives' in the analysis (Hofmann et al., 2000). These results show that there is a need for the use of appropriate tools for a multi-level analysis. We address this issue by applying a Hierarchical Logistic Regression Model for Multilevel Analysis.

In this study, we aim to contribute further to the understanding of the cross-country differences in entrepreneurial activity by using a cultural lens. In addition to individual characteristics, namely, age, gender and education in affecting entrepreneurial activity, we argue that national culture is important for explaining new firm formation in both direct and indirect ways. Furthermore, we explain the individual entrepreneurial behaviour (the decision to create a new firm) by the interaction between macro-level (national) characteristics (culture) and micro-level (individual) attributes (age, gender and education).

Such approach is in line with research of Stuetzer et al. (2018) showing at the macro level of regions that entrepreneurial culture matters and that new ideas and knowledge created in different cultural contexts may result in different outcomes in terms of innovation. The same kind of relationship was observed by Backman and Karlsson (2013) for communities in Sweden as well as Fritsch and Wyrwich (2018) in the case of Germany.

It could be argued that examining the individual attributes' effect on entrepreneurship is unrequired, given the high number of empirical studies carried out with this focus. However, in this study, we test the effect of individual characteristics embedded in a cultural context. We try to identify the impact of macro-level (cultural) factors on entrepreneurial activity at the individual level. By doing so, we aim to provide empirical evidence on the importance of cultural variables in determining micro level entrepreneurial behaviour and on the moderating role of culture in the relationship between individual-level (demographic) factors and entrepreneurs' decisions in starting new ventures. Our research questions are as follows: 1. How does culture affect entrepreneurs' decisions to start a new business? and 2. How does culture impact the relationship between individual attributes and entrepreneurial activity? The key contribution of this approach is to show the moderating role of culture on entrepreneurial behaviour which changes the allocation of entrepreneurs towards different demographic groups in terms of age, gender and education.

This paper is organised as follows. First, we review the existing literature on the determinants of entrepreneurial choice, distinguishing between individual micro characteristics and macro cultural characteristics of the country to which an entrepreneur belongs, while formulating our hypotheses. Second, we describe our data, construct our model and then present results by analysing the individual choice as affected by macro-level (cultural) factors and micro-level (individual) characteristics. Finally, we discuss the implications of our study and provide a brief conclusion.

2. Theoretical Background

2.1. Macro-Level Determinant: The Direct Role of Culture

The level of entrepreneurial activity strongly differs across countries (Freytag and Thurik, 2007; Minniti et al., 2005). While the role of individual attributes has received a great deal of attention, we still know little about the relationship between cultural factors and entrepreneurial activity. Many scholars argued that entrepreneurship is better understood by considering the social and cultural context in which the firms are created (Weber, 1904; Shapero and Sokol, 1982; Aldrich and Zimmer, 1986; Thornton, 1999; Granovetter, 2000). McGrath et al. (1992) explored the relationship between culture, values and entrepreneurship and concluded that culture matters in shaping entrepreneurial attitudes. Moreover, Zhao et al. (2012) found empirical evidence that cultural factors are

related to cross-national differences in entrepreneurship rates. Liñan and Chen (2009) also suggest that “cross-cultural studies are needed for the effect of different cultures and values on the entrepreneurial intention to be better understood” (pp. 593–594).

The common finding suggests that culture does matter in explaining cross-national differences in the level of entrepreneurial activity and economic development (Granato et al., 1996). However, extant studies are quite heterogeneous in terms of the methods applied, the samples used and the influences they have examined; thus, the findings reported in entrepreneurship literature are often conflicting (Hayton and Cacciotti, 2013). Therefore, our first hypothesis attempts to confirm the direct influence of culture. In particular, we suggest that:

H1: A supportive culture towards entrepreneurship positively affects an individual's decision to engage in entrepreneurial activity.

2.2. Individual-Level Determinants: The Moderating Effect of Culture

Numerous studies have explained the variation in entrepreneurial activity across countries by using a variety of determinants, mainly individual and economic factors that have received greater attention in the entrepreneurship literature (Thornton et al., 2011). Thus, many empirical studies have found evidence of a significant relationship between the probability of being or becoming an entrepreneur and individual attributes such as age, gender and education. In the following sections, we review these relationships; however, we propose that what is still missing is the consideration of the indirect effect of national culture on the decision to start a business.

2.2.1. Age

Regarding the age of entrepreneurs, it has been identified that many entrepreneurs are between 25 and 45 years old (Storey, 1994; Reynolds et al., 1999) suggesting that the level of entrepreneurial activity tends to be relatively high among young people (Van Stel et al., 2004). Thus, when individuals are older, wage-employment becomes more attractive compared to self-employment (Lévesque and Minniti, 2006; Bonnet, 2012). More recently, Liang et al. (2018) even confirmed an inverted U-shaped relationship between entrepreneurship and age due to the fact that in spite of business skills increasing with experience, creativity may decline with age. Their model also implies that older societies have lower rates of entrepreneurship at every age.

However, when combining culture with individual attributes, prior studies tend to overlook cultural heterogeneity in the age-entrepreneurship relationship (Minola, Criaco and Obschonka, 2016). Even when researched together, the majority of investigations focus on either age or culture, marginally mentioning

the other. Considering that culture might affect the relationship between age and entrepreneurship via societal preferences and desirability biases toward youth, it is important to recognise the roles of age and culture in tandem. Therefore, our second hypothesis combines both macro and micro perspectives.

H2: In societies with a supportive culture towards entrepreneurship, entrepreneurs are more likely to be younger, compared to their counterparts in less supportive cultures.

2.2.2. Education

The evidence on the relationship between education and entrepreneurship tends to be more complicated than in the case of age. We need to acknowledge here the focus in the literature on two different types of education: general education and entrepreneurship education. While exploring the role of entrepreneurial education is more common, we concentrate in this paper on the former one.

In case of general education, some empirical studies suggest that better-educated individuals are more likely to be involved in entrepreneurial activity (Delmar and Davidsson, 2000; Wärneryd et al., 1987), while others find that less educated individuals are more likely to become entrepreneurs (Johansson 2000; Uhlaner and Thurik, 2007). Additionally, Blanchflower (2004) proposed that education is positively correlated with entrepreneurship in the United States, but negatively in Europe, adding to the importance of investigating the issue of context. Van der Sluis et al. (2008) also found out that the impact of education on selection into entrepreneurship is insignificant in industrial economies while in developing economies more educated workers typically end up in wage employment or prefer entrepreneurship to farming (Van der Sluis et al., 2005).

Even though the above-mentioned studies do not suggest a straightforward answer to the question of the relationship between general education and entrepreneurship, they acknowledge that a national framework, within which potential entrepreneurs operate, could be of importance. However, the consideration of culture in this context is largely missing. In contrast, in the case of entrepreneurship education, we can identify such a link. Giacomini et al. (2011) in their study on entrepreneurship education in America, Asia and Europe found that entrepreneurial intentions of students varied across nations. This finding led to the recommendation that cultural differences should be taken into consideration when developing entrepreneurship education programmes.

Therefore, we suggest that a more detailed answer to the issue of the influence of national culture on the relationship between general education and entrepreneurship should be recognised. Furthermore, as returns to education tend to be bigger for entrepreneurs than for wage-workers (Iglesias et al., 2016), we assume that individuals with a higher level of general education would be more likely to become an entrepreneur in a supportive culture where entrepreneurship

becomes more beneficial amongst the range of career options available. Hence, our third hypothesis is:

H3: In societies with a supportive culture towards entrepreneurship, entrepreneurs are more likely to be higher educated, compared to their counterparts in less supportive cultures.

2.2.3. Gender

The effect of gender on the probability of becoming an entrepreneur is demonstrated in several previous studies which found that males show a higher level of interest than females in creating new businesses (Minniti et al., 2005; Mueller, 2004; Verheul et al., 2006). Thus, women are less attracted to entrepreneurial activity than men. Moreover, scholars indicate that gender influences both preference and actual engagement in entrepreneurial activity (Minniti et al., 2005; Reynolds et al., 2002). Hence, the lower willingness of females to engage in this activity may –at least partly– explain their lower entrepreneurial activity rates.

Furthermore, Fischer et al. (1993) argued that there may be gender-obstacles that discourage women to be actively involved in entrepreneurial activity. These obstacles are influenced by the social and cultural context in which entrepreneurial activities take place. Foreman-Peck and Zhou (2014) discussed gender differences in propensities to start a business; however, the variance between male and female entrepreneurial propensities from the same culture is still smaller than the difference between entrepreneurial propensities of males from other cultures. Moreover, entrepreneurial propensities between women of different cultures are more similar than those for men. This would also be in line with Van der Sluis et al. (2005) who claim that in developing economies self-employment and wage-employment orientation is stronger for higher educated women in urban areas than in less developed economies. Still, this investigation does not attempt to identify the intensity of cultural influence.

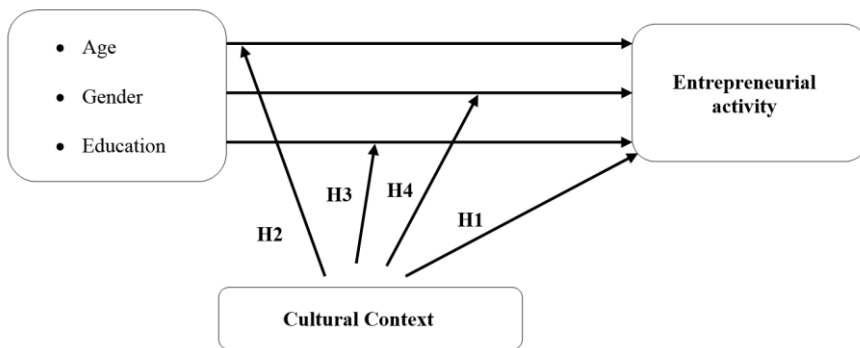
Surprisingly, only a few studies have examined gender differences from a cross-cultural perspective (Shinnar, Giacomini and Janssen, 2012). This focus could, however, explain the gender gap in entrepreneurship, providing a link to individual characteristics. So far, it had been proved that the desire to pursue an entrepreneurial career is not consistent across gender or across cultures (Giacomini et al., 2011). Our study serves to address this gap by suggesting how cultural differences can impact entrepreneurial activity. We propose that a supportive culture could overcome barriers for female engagement in entrepreneurial activities and therefore our fourth hypothesis is:

H4: In societies with a supportive culture towards entrepreneurship, entrepreneurs are more likely to be female, compared to their counterparts in less supportive cultures.

2.3. Conceptual Model

The above review led us to specify hypotheses about differences in entrepreneurial activities across countries, focusing on the effects of individual characteristics, namely, age, gender and education on the entrepreneur's decisions in starting new ventures and the role of cultural context in this relationship. In our conceptual model, presented in Figure 1, we suggest that national culture impacts individual-level entrepreneurial activity in both direct (H1) and indirect ways (H2-H4). The interaction between the different level factors (Micro vs Macro) on entrepreneurial activity will be applied to investigate the impact of individual factors (Age, Gender, Education) on entrepreneurship according to the macro-level characteristics (Culture). We argue that this conceptual model allows for better understanding of the determinants of entrepreneurship.

Figure 1: Conceptual model



3. Data and Research

3.1. Data

To test our hypotheses, we use the Global Entrepreneurship Monitor (GEM) for both micro and macro level data. The GEM project is aimed at understanding the relationship between entrepreneurship and national economic development, which results in a set of comparable data “...across a large variety of countries on attitudes toward entrepreneurship, start-up and established business activities, and aspirations of entrepreneurs for their businesses” (Bosma, 2013:143). Two out of the three main objectives of the GEM initiative, (1) to measure differences in the level of entrepreneurial activity between countries and (2) to uncover factors determining national levels of entrepreneurial activity seem to be in line with our research focus.

3.1.1. Micro-level Data

In order to provide a reliable comparison across countries a random sample of adults, aged 18–64 years old, has been selected from 84 countries that participated in the GEM from 2009 to 2013 resulting in 969,246 observations. The set of data included all countries and adults available in GEM Adult Population Survey.

In order to test hypotheses H2, H3 and H4 the following variables have been chosen:

- Entrepreneurial activity (dependent variable) being a dichotomy variable
 - coded 1 for the adult population who is involved in an early-stage Entrepreneurial Activity meaning either actively trying to start a business or currently owning and managing an operating young business – less than three and a half years old.
 - coded 0 for the population who is not involved in this activity.
- Individual characteristics' factors (independent variables):
 - *Age*: numerical measured in years.
 - *Gender*: dichotomy coded 1 for male and 0 for female.
 - *Education*: measured in years.

3.1.2. Macro-level Data

Since its inception, GEM has proposed that entrepreneurship dynamics can be linked to conditions that enhance (or hinder) new business creation. In the GEM's methodology, these conditions are known as *Entrepreneurial Framework Conditions (EFCs)* which are monitored through harmonised surveys of experts in the field of entrepreneurship (Bosma, 2013). Each year at least 36 national experts in each country that participated in the GEM survey are personally interviewed or surveyed and asked to fill in the National Expert Survey (NES) self-administered questionnaire (Singer et al., 2015). In particular, the NES review makes sure that a fair representation of experts and entrepreneurs in diverse areas of expertise is interviewed with about 35 per cent of the sample being entrepreneurs. This way more credible and original data on the institutional framework for entrepreneurship are generated through the Survey. Being generally straightforward, the NES questionnaire asks to assess several items linked to the entrepreneurial framework conditions. The questionnaire assesses the components of these framework conditions in a five-point Likert scale (Bosma, 2013).

Our macro-level factor (independent variable) – the Cultural Context – is, therefore, derived from GEM National Expert Survey (NES). This indicator aims to measure the extent to which cultural context encourages or allows actions leading to new business methods or activities that can potentially

increase personal wealth and income. On the topic of cultural context, NES asks to rate the following statements:

1. The national culture is highly supportive of individual success achieved through own personal efforts.
2. The national culture emphasises self-sufficiency, autonomy, and personal initiative.
3. The national culture encourages entrepreneurial risk-taking.
4. The national culture encourages creativity and innovativeness.
5. The national culture emphasises the responsibility that the individual (rather than the collective) has in managing his or her own life.

Since these questions follow a five-point Likert scale, a higher indicator of all experts' responses in each country represents a more supportive cultural context towards entrepreneurial activities (Reynolds et al., 2005). Our index, being based on the above highly and positively correlated statements, is calculated as their combination in the form of the mean of the five variables for each country. This results in a single index of national culture summarising main aspects which encourage entrepreneurship (with a scale in the range of 1 to 5 for each country's culture).

3.2. The Research Design

Our research design has two hierarchical levels, the micro-level units (individuals) nested within the macro-level units (countries). The multilevel or hierarchical model is considered to be ideally suited for the analysis of nested data or data with group structure (Wong and Mason, 1985; Guo and Zhao, 2000; Woltman et al., 2012). This model has the ability to identify the relationship between predictor and outcome variables by taking into account both level-1 (individuals) and level-2 (countries: national characteristics) in regression relationships (Woltman et al., 2012). Since the data is binary, we performed the Hierarchical Logistic Regression Model for Multilevel Analysis (Wong and Mason, 1985) to test the direct and interaction effects. First, we included in the model the independent variables (individual attributes and national characteristics) to investigate the direct effects of these variables on the dependent variable (entrepreneurial activity). The interaction item between individual attributes and national characteristics (cultural context) was tested in the second and last step. Metric and standardised coefficients were estimated in the two models.

4. Results

4.1. Correlations

Table 1 provides descriptive statistics and intercorrelations of the studied variables. The correlations between Early-stage Entrepreneurial Activity and all the independent variables are significant at the 0.005 significance level. Notably, we find a positive correlation between a national supportive culture towards entrepreneurship and individual-level entrepreneurial activity.

Table 1: Correlations of model variables

	<i>Mean</i>	<i>SD</i>					
Entrepreneurial activity	n/a	n/a	1				
National culture	2.78	.49	.077**	1			
Education	10.85	5.125	-.004**	.040**	1		
Gender (male)	n/a	n/a	.065**	.003**	.037**	1	
Age	40.83	15.111	-.085**	.004**	-.096**	-.028**	1

Notes: (two-tailed probability-value) *** $p < .0005$, ** $p < .005$, * $p < .05$

4.2. Hierarchical Logistic Regression

Table 2 presents the results of two models of hierarchical logistic regression analysis. Model 1 investigates the direct effects of each independent variable namely micro-level variables (age, gender and education) and national cultural context that are related to the entrepreneurial activity. Model 2 tests the interaction effects of micro-level variables with national cultural context upon entrepreneurial activity. In the hierarchical model, similar to the logistic regression, the effects of factors are tested in a coefficient.

Table 2: Results of Hierarchical Logistic Regression (*Multilevel mixed effects model*): Main and interaction effects of individual attributes and national characteristics on Entrepreneurial Activity (969,246 observations, 84 countries)

<i>Parameter</i>	Model 1 Main effects		Model 2 Interaction effects	
	<i>Metric coefficient</i>	<i>Standardised coefficient</i>	<i>Metric coefficient</i>	<i>Standardised coefficient</i>
Age	-.627***	-.284***	-.451***	-.164***
Gender (male)	.423***	.197***	.991***	.495**
Education	-.002**	-.067***	.100***	.515***
National culture	.486***	.271**	.722**	.354**
<i>Interactions</i>				
National culture*Age			.036*	.077*
National culture*Gender			-.199***	-.284***
National culture*Education			-.024***	-.387***
_cons	-.730***	-2.181**	-3.503***	-2.162***

Notes: (*one-tailed probability-value*) *** $p < .0005$, ** $p < .005$, * $p < .05$

4.2.1. Model 1: Micro Level

The results of model 1 show a relatively uniform picture. The micro-level variables age, gender and education have a significant effect on early-stage entrepreneurial activity. Age and education are negatively associated with entrepreneurial activity, meaning that older people are less involved in entrepreneurial activity than the young ones. Also, the creation of new ventures is more likely to occur among less educated individuals. This negative association between education and entrepreneurial activity was reported by Johansson (2000) and Uhlaner and Thurik (2007). Furthermore, coefficient estimates for gender are significant and positive; thus the probability of being an entrepreneur is higher among males than females. This finding confirms our earlier assumption and corroborates theories discussed in the literature, notably Fischer et al. (1993) who argue that there may be gender obstacles to the low willingness of females to engage in entrepreneurial activity.

In the same model, the national-level variable is statistically significant. This means that national culture which focuses on supporting entrepreneurial

activities is positively associated with entrepreneurial activity. Therefore, **hypothesis 1** which proposes that a supportive national culture increases the level of entrepreneurial activity **is upheld**. A supportive cultural context seems to allow behaviour that leads to new business formation and confirms previous findings in the literature. Moreover, from all independent variables, according to the standardised coefficient (-0.284 , $p < 0.0005$), the effect of age seems to be larger than the effect of other independent variables.

4.2.2. Model 2: Micro Variables Within the Context of Culture

The effect of national-level variables on individual characteristics, namely, age, gender and education are presented in model 2. The interaction between individual attributes and national culture is significant in predicting early-stage entrepreneurship. However, the findings show that national culture affects the relationship between age, gender and education and entrepreneurial activity in a somewhat surprising way. Societies with a national culture that highly supports entrepreneurial activities have a lower number of young entrepreneurs than the others. Thus, in societies with these characteristics, younger people are less attracted to founding a new business compared to their counterparts in less supportive cultures. This result **rejects hypothesis 2**.

As regards gender and education, the findings show that the national culture which supports entrepreneurial activity promotes it among females and less-educated people; whereas less supportive cultures may increase the probability of being an entrepreneur among males and longer educated people. Thus, **hypothesis 3** is also **rejected**; however, **hypothesis 4** is **supported**.

Finally, as illustrated in standardised coefficients, the add-on effect of national culture on the relationship between education and early-stage entrepreneurial activity is more distinct compared to the other interactions (-0.387 ; $p < 0.0005$). This means that the interaction effect of national culture and education upon entrepreneurial activity is stronger than the other interaction effects.

5. Implications

With the use of the hierarchical model, our multilevel analysis revealed interesting insights regarding the role of culture. The main findings indicate that the variation of entrepreneurial activity can be explained by linking entrepreneurs' individual characteristics to national culture. Moreover, the interaction between individual attributes and cultural factors has a significant impact on entrepreneurs' decisions in starting new businesses.

Our findings also provide an important insight into how entrepreneurship can be supported according to the cultural context. Based on that, we suggest that culture can guide policy recommendations across nations. It seems that more

supportive cultures can bridge the age and gender discrepancy inspiring older and female entrepreneurs. This should be considered in nations lacking in these types of entrepreneurs. Furthermore, a supportive culture also signals a decrease in younger entrepreneurs' population which confirms societal preferences and desirability biases toward youth, which should be further investigated.

In our analysis, we found not only a direct effect of national culture which increases the probability of becoming an entrepreneur (and hence, at the macro level, the number of entrepreneurs) but also a moderating effect of national culture which changes the *allocation* of entrepreneurs towards female and lower educated entrepreneurs¹ at the cost of male and higher educated entrepreneurs. Hence, these latter moderation effects do not necessarily increase the total number of entrepreneurs at the macro level since a higher probability for women implies a lower probability for men. Similarly, resulting from a supporting culture, a higher probability for lower educated individuals to become entrepreneurs is associated with a lower probability for higher educated individuals.

Since a supportive culture could provide enough knowledge and confidence to particularly women and lower educated individuals to benefit from that, it appears that cultural support can create encouragement for "lower-confidence" groups rather than discouragement among higher-educated individuals. It is plausible that higher-educated individuals are confident enough to start a business regardless of national culture, whereas for the lower-educated and women a supportive culture makes an important difference in developing entrepreneurial potential. This would be in line with Van der Sluis et al. (2005) finding of gender and education in developing countries but also requires further research into the confidence/ self-confidence levels of individuals.

6. Conclusion

The purpose of this study was to investigate the impact of macro-level cultural factors on entrepreneurial activity taking into consideration the interaction effect with entrepreneurs' individual characteristics (age, gender, education). Drawing upon the GEM data the research provided evidence that national culture affects the relationship between the engagement in entrepreneurial activity and all individual characteristics (age, gender, education). In particular, the interaction between individual attributes and cultural factors has a significant impact on entrepreneurs' decisions in starting new businesses. This might partly explain the inconsistencies in previous entrepreneurial studies results. Thus, the results of our study add to the debate on the role of national culture in the development of entrepreneurship.

¹ It is also valid for older entrepreneurs but this effect is weaker as shown by the standardised coefficients.

We acknowledge that this study has some limitations related to the GEM survey design, which are pointed out by Bosma (2013). It seems that the GEM measures may be too simplistic when applied to evaluate complex constructs. Furthermore, one-way causal interpretations could not always be allowed, especially when linking perceptions and attitudes to entrepreneurial behaviour.

Based on our findings, further studies should focus on investigating the societal preferences and desirability biases toward youth and confidence/ self-confidence levels of individuals. We also support the recommendation of Giacomini et al. (2011) to include cultural context in the examination of education; however, we argue that not only entrepreneurship education is of importance here, but also general education. Therefore, we suggest more research into the culture—education effect on entrepreneurial activities. We finally acknowledge that besides a supportive environment towards entrepreneurship as studied in the present paper, other elements of culture could also influence entrepreneurial activity, and we recommend further investigation in this area.

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