Bachelor Thesis

Opportunity driven immigrant entrepreneurship in the European Union: evidence from the 2013 GEM survey.

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Abstract

The importance of entrepreneurship becomes increasingly marked around the world and has come to be a considerable driver of economic growth and innovation. This paper studies the behaviour of foreign immigrant entrepreneurs in developed economies of the European Union. It contributes to existing literature with its particular perspective on opportunity driven motives coupled with the detailed distinction of immigrants' origins. This is enabled by the comprehensive data collection carried out on a yearly basis by the Global Entrepreneurship Monitor (GEM) with its individual level Adult Population Survey (APS). The findings are that immigrants are more likely to engage in opportunity driven entrepreneurship, employ fewer people in their firms and show a larger tendency to do business with overseas customers. The research has implications for entrepreneurial activity taking place in a context of an aging population and a diminishing workforce.

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1. Introduction

The steady rise in entrepreneurship has been a common trend during the past decades and throughout the varying economies around the world (GEM, 2020). Generally speaking, the world has seen a shift from a managed economy, synonymous with a concentration of large sized firms that tend to focus on efficiency and economies of scale, to a more entrepreneurial economy, which directs resources and orients focus towards innovation and product differentiation (Audretsch and Thurik, 2010). So much so, that as of 2019 in the OECD area, the small and medium-sized enterprises (SMEs) represent 99% of all businesses as well as 60% of all employment generation (OECD, 2019).

Europe, and more specifically the European Union, has been no exception to this general movement. However, the member states of the zone, primarily innovation-driven economies (a term referring to the higher developed countries), show a lower rate of entrepreneurship relative to factor- and efficiency-driven economies (the tiers designating the two lowest categories of economic development). They average at around 7.5% and 15% respectively, in terms of share of adult population that takes part in entrepreneurial activity (GEM, 2014). Still, the European Commission considers entrepreneurship as a leading component of the European Union's economic backbone, in terms of "economic growth, innovation, job creation, and social integration" (European Commission, n.d.).

Given the multiplicity of definitions proposed for the concept of entrepreneurship, it is fitting to clarify which one this present research revolves around and which we will use throughout the paper. That is, "any attempt at new business or new venture creation, such as a new business organisation or the expansion of an existing business, by an individual, a team of individuals, or an established business" (GEM, n.d.). This is the one put forward by the Global Entrepreneurial Monitor, or GEM, a leading body of international research in the field, which gathers yearly data and indicators on the prevalence, trends and consequences surrounding the topic of entrepreneurship. They give a relatively broad definition, compared to what can be found in academic literature.

In this paper we centre on a specific subset of the concept, namely that of entrepreneurship motivated by opportunity, as opposed to the type of entrepreneurship pursued for lack of better alternative, qualified as necessity driven. Many factors have been presented in academic works

as contributory to the drive for entrepreneurship at the individual level. These include certain personality traits, degree of family involvement in entrepreneurship, social environment, education, among many others (Cuervo, 2005). The focus here, will be on immigration. More specifically, on the effect that being a foreign immigrant from developing and developed countries has on the likelihood of taking part in opportunity driven entrepreneurial activity in the European Union. This leads to the following research question:

What are the effects of immigration on opportunity driven entrepreneurial activity at the individual level in developed economies of the European Union?

The approach to this question consists of two main threads. The first of which revolves around various regression models that examine the likelihood of foreign immigrants to take part in opportunity driven entrepreneurial activity, compared to natives. It also looks into whether immigrant entrepreneurs have significantly different tendencies in terms of what types of industry they engage in. The second thread consists in investigating the effect of being an immigrant entrepreneur on the configuration of the business, also through regression analysis. This is studied from the perspective of the number of employees in the firm and their customer base's international orientation.

The findings are that being a foreign immigrant has a significant positive effect on the likelihood of taking part in opportunity driven entrepreneurship. Moreover, there is no strong evidence pointing to the significance in the divergence of industry for immigrants compared to native entrepreneurs. The second part of the research shows that immigrant entrepreneurs are more likely to have smaller businesses with respect to the number of employees. However, their customers are more internationally diverse, as they manifest a higher likelihood to have a certain share of their customer base located abroad.

2. Theoretical Framework

2.1 Conceptualisation and operationalisation

Immigration has become an increasingly prominent topic in research of the past decades. As the world grows smaller, as national borders open up and as globalisation unfolds, migration is facilitated and progresses through different channels of movement around countries such as that of labour mobility within the European Union (Piracha & Vickerman, 2002). There are also many other factors that shape the circulation of international migration, of which Stalker (2002) finds the most significant to be former colonial links, previous areas of labour recruitment, and ease of entry from neighbouring countries. It is no surprise then, that the Schengen agreement of 1985 allowing the free movement of people throughout the member states (mostly EU countries today), promoted a big rise in European immigration. In 2017, there were 258 million international immigrants worldwide. Europe was the continent that attracted the second most immigrants, hosting 78 million of them, representing 30% of the global immigrant population, just behind Asia with 80 million, or 31%, and in front of North America with 58 million, or 22% (United Nations, 2017). In 2019, Europe had a net migration figure of 1.2 million, referring to the difference between the numbers of immigrants and emigrants. Eurostat (2019) indicates that Europe's population is increasing but only thanks to this positive net migration. Indeed, the natural population change (referring to births minus deaths only) is negative by 0.2 million.

It is virtually infeasible to comprehensively model international immigration and encompass all of its determining factors. Nevertheless, the most widespread model in literature is the human capital model, which puts forward the idea that migrants relocate because they consider "the economic benefits of moving to be greater than those of staying put" (Levie, 2007; Williams, Balaz & Ward, 2004). This could suggest that migrants may have a differing outlook in weighing the benefits versus the costs of moving (both pecuniary and non-pecuniary), compared to their compatriots who remain. That is to say, part of the explanation of why they migrate and others do not, could be that –holding all else equal– they have a dissimilar mental reasoning which makes them hold a higher perception of benefits and/or a lower perception of the costs of migrating. Indeed, some evidence substantiates this idea. More specifically, Boneva & Frieze (2001) show that emigrants manifest different personality traits than those who stay in their country of origin. They are more likely to be work-oriented, to

have higher motivation for achievement and power as well as to have less affinity towards group affiliation and familial values. The claim is also supported by other research, which provides evidence for a certain predisposition to migrate in certain people. For instance, individuals who have already migrated once are more likely to do so again in the future, relative to individuals who have never migrated (Kupiszewski, 1996; Neuman & Tienda, 1994; Sakkeus, 1994). This further advances –however indirectly– the assertion that immigrants do not just respond to their environing welfare conditions but actually have personality particularities.

The notion by which said immigrants have marked differences in certain personality traits can lead to believe that there might be noticeable differences in other areas, such as the drive for their career life and therefore in their professional occupation once they have settled in the host country. This latter postulation is the one being assessed in this present paper.

There has been ample research made on entrepreneurship by non-natives, known as ethnic entrepreneurship (Edelman, Brush, Manolova & Greene, 2010; Köllinger & Minniti, 2006; Omoiele, 1997). However, this concept is broader than the scope of this paper, as ethnic entrepreneurship includes entrepreneurial activity engaged in both by ethnic minorities and by international immigrants (Volery, 2007). Here, we narrow down the analysis only to entrepreneurship carried out by international immigrants, known as migrant entrepreneurship.

Although migrant entrepreneurship has also had its fair share of research, the bulk of it examines business success factors (Contín-Pilart & Larraza-Kintana, 2015), macro scale factors influencing migrant entrepreneurship activity (Mickiewicz, Hart, Nyakudya & Theodorakopoulos, 2019) or theories about its specific supply and demand laws (Kloosterman & Rath, 2001). Rare are the papers that study the effects of being an immigrant on the likelihood of engaging in entrepreneurship at the individual level. Another added value in this analysis is the aptitude to distinguish between immigrants from developed and developing countries.

Furthermore, the literature that has been published so far mainly advances the factors that push immigrants out of standard employment and thereby force them into entrepreneurship. Indeed, many papers highlight the difficulty that ethnic minorities and immigrants encounter to integrate the host society and labour market because of discrimination, prejudice or human

capital and qualifications mismatch (Levie, 2007; Frijters, Shields & Price, 2005; Basu and Altinay, 2002). While Frijters et al. (2005) do observe a decreasing hardship for the immigrants to find a job as search time increases, ultimately, if no contract is secured, these same people then turn to self-employment and entrepreneurship by lack of other alternative. This is known as necessity driven entrepreneurship.

Conversely, opportunity driven entrepreneurship is the opposite concept to the necessity driven type. Indeed, it refers to the businesses conceived by individuals who envision an improvement either for themselves, in terms of income or professional lifestyle, and/or for the market; that is to say they perceive an unexploited or underexploited opening in which they would set up a business to meet market demand (IGI Global, n.d.). Substantial literature has been written supporting the claim that opportunity driven entrepreneurship represents the more singular and essential form of entrepreneurial behaviour (Baron, 2006; Eckhardt & Shane, 2003; Shane & Venkataraman, 2000). Seemingly, this conceptualisation is aligned with the Schumpeterian definition of an entrepreneur, which emphasises on the innovation-motivated characteristic and the drive for high growth (Block, Fisch & van Praag, 2017). Minniti (2009), similarly defines entrepreneurs as individuals who are more inclined to be "alert to the identification and exploitation of profit opportunities". It is this same scope that is taken in our research paper.

Additionally, Köllinger & Minniti (2006) looked into the under representation of black Americans among established entrepreneurs in the United States. They suggest that black Americans are actually more likely to have a positive outlook on their environment with respect to business opportunity. What they concluded is that the barriers to entry and higher failure rates are the significant factors explaining the under representation. These are also shown to be so pronounced as to outweigh the rate of attempting to set up a business, which is almost twice as high for black Americans than for white Americans. This leads to the secondary question that we study in the first part of our analysis, which is whether immigrants show a distinct likelihood to manifest intention to engage in entrepreneurship in the near future. To operationalise this notion in our analysis, we use survey data in which the respondents are asked whether they expect to start a new business within the next three years.

Another notable point which we investigate here is the international orientation of immigrant entrepreneurs. Vissak & Zhang (2014) found that Chinese immigrants in Canada

show a considerably quicker internationalisation of their firms, in part due to their overseas network relationships. This type of study has not yet been performed within the scope of the European Union and on the topic of opportunity driven immigrant entrepreneurship.

Concerning the operationalisation of our research, most of the notions are straightforwardly collected as survey information by asking the respondents "yes or no" and categorical type questions about the various characteristics regarding their occupancy (whether they are engaged in opportunity entrepreneurship or not), entrepreneurial intentions in the next three years, what industry they work in, the number of employees working with them and the degree of international orientation of their business. One particularity exists concerning the operationalisation of the immigration status characteristic. The survey used for this paper does not provide precise information on whether or not the respondents have immigrated to the country where they live. However, it does indicate whether or not the respondents are born in the country they live at the moment of being surveyed and if they are indeed born elsewhere, the country of birth is given. This indicator is what we use to identify which respondents are immigrants and which ones are not. This proxy operationalisation is deemed fitting enough to portray what we are studying. Indeed, OECD (n.d.) actually defines migration "on the ground of the place of birth (foreign-born) or of the citizenship (foreigners)" which is aligned with what we have gathered from the survey. It could be considered that this operationalisation is not entirely accurate, as someone born in a foreign country but whose parents are of the native citizenship is counted as an immigrant. Similarly, someone who lives and was born in one of the European countries under consideration, because the mother might have stayed there only temporarily at the time of birth, but whose parents do not have the citizenship, is (somewhat falsely) counted as native. However, we trust these occurrences to be only exceptional and infrequent enough to be negligible in our study. The considerable size of the survey also ensures these cases remain minimal.

2.2 Hypotheses development

In order to assess our research question given in the introduction, we proceed by advancing 4 hypotheses to test empirically.

The literature mentioned in section 2.1 pointed to the notable difference in immigrants' personality traits, especially in terms of their higher work orientation. Clark & Drinkwater (2010) show that self-employed workers and entrepreneurs tend to work significantly longer hours than workers in standard employment, to compensate for the higher uncertainty in their income. Based on these two findings, an argument could be made that immigrants are more likely to be willing to work longer hours and therefore on average, are better suited to engage in entrepreneurship. As for the rest of the research, we focus here on immigrants from both developed and developing countries, who settle in the developed economies of European Union. Hence, our first hypothesis is:

Hypothesis 1a: Being an immigrant positively affects the likelihood of engaging in opportunity driven entrepreneurship.

Similarly, as seen in Baron (2000) and in Mueller (2004), intentionality and locus of control are shown to be important in the decision to start a business. This, coupled with the argument put forward by Köllinger & Minniti (2006) which postulates that black Americans are almost twice as likely as white Americans to attempt to set up a business, are grounds for our next hypothesis:

Hypothesis 1b: Being an immigrant positively affects the likelihood of intending to engage in opportunity driven entrepreneurship.

The second hypothesis stems from the fact that immigrants may manifest differences in cultural predispositions and values from natives. This could lead them to have different priorities when thinking about opportunities to exploit in the business market. For instance, an immigrant originating from a country where consciousness about climate change is prevalent, might show more likelihood to consider setting up a business in a minimally polluting industry compared to someone coming from a country where climate concern is less present. Our second hypothesis is therefore:

Hypothesis 2: Opportunity driven immigrant entrepreneurship significantly differs from native entrepreneurship in the distribution among the various types of industries.

The findings in Boneva & Frieze (2001) point to immigrants being more averse to affiliation and showing less affinity toward family ties. From this, by extension, we could advance the idea that immigrants might show more distanced personality traits and prefer smaller groups of people to work with. This gives our third hypothesis:

Hypothesis 3: Being an opportunity driven immigrant entrepreneur negatively affects the number of employees in the business.

Our fourth hypothesis could be understood intuitively by the fact that immigrants show a more diverse social network and foreign connections. A substantial amount of them keeping in touch with their country of origin, namely by physically travelling back, through their social networks or by providing financial help to their family with remittances, it is plausible to think that their business set up in the host country shows a higher international reach than native peers. Therefore, our fourth hypothesis is as follows:

Hypothesis 4: Being an opportunity driven immigrant entrepreneur positively affects the share international customers.

3. Data

The data used in this research originates from the leading body of international research and data collection on entrepreneurship, called the Global Entrepreneurship Monitor (hereafter referred to as GEM) and is affiliated with the London Business School. They coordinate yearly surveys on entrepreneurship rates, trends and consequences in various economies around the world, with a nominated team in each participating country, responsible for the carrying out of their respective national survey which follows centralised guidelines put forward by the GEM administration, to ensure standardisation. We make use of the 2013 Global Adult Population Survey (GEM, 2013) performed at the individual level. In this specific edition of 2013, the survey included information gathering with respect to the topic of immigration, which is why we use this one and not a later issue.

This cross-sectional data is remarkably extensive both in the breadth of scope and in the number of respondents. In the 2013 edition, 493 variables were collected from 244 471 different respondents in 70 countries. To that count we can add the 7 variables from the immigration section for a total of 500 variables. In our study, we consider only the observations pertaining to developed countries within the European Union. The level of development is classified according to the Global Competitiveness Report of 2013 (World Economic Forum, 2013) and is calculated based on many factors including the GDP per capita, the quality of institutions and infrastructure, the level of education, the technological readiness, etc. The development stage we restrict ourselves to is the higher tier, i.e. innovation driven economies. Table 3.1 lists the higher developed EU countries for which GEM provides data.

Table 3.1 Overview of EU innovation driven economies considered in our research

Country	Number of respondents	Percent
Spain	24,600	36.07
United Kingdom	11,017	16.15
Germany	5,996	8.79
Czech Republic	5,009	7.34
Netherlands	3,005	4.41
Sweden	2,506	3.67
Italy	2,052	3.01
Luxembourg	2,005	2.94
Finland	2,005	2.94
Portugal	2,003	2.94
France	2,002	2.94
Ireland	2,002	2.94
Slovenia	2,002	2.94
Belgium	2,001	2.93
Total	68,205	100.00

From the EU countries included in the GEM data, the following six countries are excluded from our analysis, because they did not meet our development level criterion in 2013: Hungary, Romania, Poland, Latvia, Lithuania and Croatia. The table shows that the 14 countries are each substantially represented in numbers. Indeed, the GEM guidelines impose a minimum of 2000 total participants per country.

The main variable of interest throughout our analysis is that indicating the respondent's immigration status. Named "*Citizen status*", we have formed this variable by manner of proxying, based on the country of birth. If the country of birth is the same as the country in which the survey is performed (respondents are surveyed in their country of residence), the individual is counted as native. Otherwise, the respondent is counted as immigrant, all the while distinguishing between developed and developing countries of origin, with the level of development being operationalised in the same way as in the previous paragraph. More specifically, the respondents are counted as immigrants from a developed country if their country of birth is an innovation driven economy (top tier according to the Global Competitiveness Report of 2013), otherwise they are counted as immigrants from a developing country. For this variable, all observations are used, as we include birth countries from all over the world. Hence, *Citizen status* is a categorical variable taking the values "Native", "Immigrant from developed country" and "Immigrant from developing country".

To begin with, we look into the thread of our research which examines immigrants' likelihood to engage in opportunity driven entrepreneurship and their industry preferences. This makes use of the variable indicating whether the respondent is currently taking part in opportunity driven entrepreneurship. It is important to know that GEM puts forward a distinction relating to the timing of the business's life. In practical terms, firms which have yet paid any wages for at least 3 months are defined as nascent; those which have paid wages for at least 3 months and for no longer than 3.5 years (42 months) are defined as new. The pooling of nascent and new businesses is encompassed in the term coined as Total early-stage Entrepreneurial Activity (abbreviated TEA). Concretely, TEA is the notion which we use in practice to identify entrepreneurial activity.

Subsequently, the GEM questionnaire asks those who undertake TEA to specify whether they do so by opportunity or not. This is how the variable "*Opportunity TEA"* is built: in binary terms, it shows 1 if the respondent is involved in opportunity driven TEA and it shows 0 in all

other cases. The data reveals that out of the total 68 205 survey participants in the EU, 3918 are involved in opportunity or necessity TEA, equivalent to 5.74%. Of these total TEA entrepreneurs, 2908 report to be driven by opportunity (74.22% of total TEA). Similarly, in the second model, the variable *"Entrepreneurial intention"* shows whether the individual expects to start a new business, including any type of self-employment, within the following three years. For this variable however, no distinction is made as to the type of motive (opportunity or necessity).

The rest of the variables in our research are extracted in a comparable manner. Namely, the type of industry in which the entrepreneurs engage are self-reported in one categorical variable *"TEA Industry".* This comprises of 12 broadly defined industry categories in which businesses are classified according to the United Nations' International Standard Industrial Classification of All Economic Activities (abbreviated as ISIC), which provides an international reference of productive activities (United Nations, n.d.). An overview of these classifications is presented in Appendix 1. However, as is explained in the following methodology section, it is preferable to convert this categorical variable into 12 different binary variables. These dummy variables are named *"TEA Industry 1"* through *"TEA Industry 12"*.

In the second thread of the paper, the variables called *"Number of Jobs"* and *"Customer International Orientation"* are used. The former is a continuous variable showing the number of employees that the respondent has in the business. The latter is a binary variable showing 1 if the business has more than 25% of its customers located abroad and showing 0 otherwise. For our analysis, it is important to note the distribution of the continuous variable *Number of Jobs*, presented in Tables 3.2 and 3.3.

Finally, as control variables for all models, we include the characteristics of *"Gender"* (binary variable indicating 1 for males, 0 for females), *"Age" a continuous variable ranging from* , and *"Educational attainment"* in order to perform the analysis with respect to *ceteris paribus*. Additionally, as will be explained in the next section, for three of the models, the variable of *"Age^2"* is included, representing the square of the respondent's age.

Table 3.2 Frequency table of *Number of Jobs*

Number of Jobs	Frequency	Percent
0	1791	90.68
1	61	3.09
2	42	2.13
3	26	1.32
4	11	0.56
5	11	0.56
6	5	0.25
7	2	0.10
8	2	0.10
9	4	0.20
10	4	0.20
12	1	0.05
14	1	0.05
15	2	0.10
16	1	0.05
20	1	0.05
22	1	0.05
25	3	0.15
26	1	0.05
27	1	0.05
30	2	0.10
50	1	0.05
70	1	0.05
Total	1,975	100.00

Table 3.3 Summary statistics of *Number of Jobs*

	Number of Jobs
Mean	0.446
Median	0
90th percentile	0
99th percentile	10
Minimum	0
Maximum	70

4. Methodology

In this section, we go over the different methods applied to test the given hypotheses. It comprises two parts, following the paper's two-thread structure. All the models pertain to the 14 EU countries mentioned above.

4.1 Likelihood of entrepreneurial activity

The models in this part examine the likelihood for immigrants to show various characteristics relative to that of natives. The first model tests whether immigrants are more likely to engage in opportunity driven entrepreneurship. The second model tests the relative likelihood for immigrants to have entrepreneurial intentions. The third set of models tests whether immigrants have a significantly different inclination with respect to their business industry. These models all consist of logistic regression analyses which take this form:

$$P(characteristic) = \frac{1}{1 + e^{-Y}}$$

where *P(characteristic)* refers to the probability of showing a given characteristic, *e* is the exponential term and Y is defined as:

$$\boldsymbol{Y} = \alpha + \boldsymbol{\beta_T} \cdot \boldsymbol{T} + \boldsymbol{\beta_t} \cdot \boldsymbol{t} + \beta_1 \cdot X_1 + ... + \beta_n \cdot X_n + \varepsilon$$

In this logistic regression equation, **Y** is the dependent binary variable, α is the constant term (not interpretable because all of the models present at least one independent variable which cannot take the value of zero) and $\boldsymbol{T}$ and $\boldsymbol{t}$ are the two relevant categories from the independent variables of interest, namely *Citizen status* for all of the models in the paper. The use of this latter variable stays the same for all models, in that the reference category is "being a native" and the two other immigrant categories are the ones which have an associated coefficient in the regression. X_1 through X_n refer to the control variables which recur in all the models and consist of a *"Gender"* binary variable, a continuous *"Age" variable* and a categorical *"Educational attainment"* variable. ε is the error term.

Hypotheses 1a and 1b

The analyses for the first two hypotheses test if the effect of being an immigrant is significant on the likelihood to engage in opportunity driven entrepreneurship and to have entrepreneurial intentions, respectively. They are examined through two different models: the first with *"Opportunity TEA"* and the second with *"Entrepreneurial Intention"* as dependent variables. We expect to see a positive relationship for both, signifying that in the 14 European Union countries studied, immigrants would on average be more likely to be participate in opportunity driven entrepreneurial activity and be more likely to intend to do so in the future. On top of the recurring control variables, the variable *"Age^2"* is included in both models. This follows from the findings of Liang, Wang, & Lazear (2018) who put forward the parabolic relationship between age and entrepreneurial engagement, based on the argumentation that the "advantages of youth" gradually give way to "business acumen" with age.

Hypothesis 2

For this hypothesis, some modifications were brought to the variable indicating the type of industry (ISIC) in which the business is categorised. Indeed, the *"TEA Industry*" variable is initially given as categorical, with values running from 1 through 12. It is deemed preferable to convert it into 12 different binary variables, ranging from *"TEA Industry 1"* to *"TEA Industry 12"*, each showing 1 when the observation matches the respective industry, and zero otherwise. If the respondent does not partake in entrepreneurial activity, the observation is counted as missing.

In this manner, twelve different models were run, one for each of the twelve variables constructed. They all regress the respective *"TEA Industry"* binary variable on the categorical variable "*Citizen status*". At the 5% level, if the null hypothesis is true, it is expected to have 5% of the total number of models to be false positives. Out of the 12 models, this equates to 0.6. Therefore, the number of significant models should be as high as possible and at least above 0.6 in order to provide evidence for a difference in industry choice between immigrants and natives in the 14 EU countries.

4.2 Configuration of immigrant entrepreneurship

In this second part, the models pertain to some specific characteristics from immigrant entrepreneurship that we set out to compare to native entrepreneurship in the 14 EU countries.

Hypothesis 3

The model through which we examine this question is an OLS regression which tests the significance of being an immigrant on the number of people employed in the business. The variable *"Number of Jobs"* is regressed on the same independent variable as in all other models, "*Citizen status*". We expect to see a negative effect, meaning that immigrant entrepreneurs would employ significantly fewer employees than their native counterparts. Staying aligned with the rest of the research, we keep the focus on opportunity entrepreneurs. We also include the three same control variables.

Hypothesis 4

In order to test the fourth hypothesis, another logistic regression analysis is performed. The analysis takes the same form as the ones of Hypotheses 1a, 1b and 2. Here the dependent variable is *"Customer International Orientation"* which is regressed on the same *"Citizen status"* variable as well as the recurring control variables. We expect the effect of being an immigrant to be positive, which would point to the fact that immigrant entrepreneurs are more likely to have a certain share of their customer base located abroad. Similarly to the first two models, we include the variable of "*Age^2"*. Again, we keep the focus on opportunity entrepreneurs.

5. Results

We now turn to the outcome presentation and assessment of all the models mentioned above. This section follows the same two-thread structure. Given that most of our models depict a logistic regression, the values of the coefficients are not directly interpretable. Therefore, a more interpretable review is given for every such analysis, in terms of probabilities.

5.1 Likelihood of entrepreneurial activity

Hypothesis 1a

Table 5.1 shows the results of the first logistic regression model testing for the likelihood of immigrants to engage in opportunity driven entrepreneurship in the 14 EU countries. In Column A, which displays the outcome of the main model of interest, it is clear that the effect of *"Citizen status"* is positive and significant (at the 1% level) on the participation in opportunity driven entrepreneurship, for both the immigrants originating from a developed and from a developing country. This confirms our expectations as to the positive effect of immigrant status.

To further substantiate this relationship, we have also constructed two variations of the model. Column B presents the results of the model which replaces the *"Citizen status"* variable by *"Immigrants Developing"*, a binary variable constructed so that it shows 1 when the respondents are immigrants originating from a developing country, and 0 in all other cases (that is immigrants from a developed country or a native resident). Column C presents the results of the model where *"Citizen status"* is replaced by *"All Immigrants"*, also a binary variable which shows 1 when the respondents are immigrants and 0 in all other cases (meaning there is no distinction between the development level of the immigrants' country of origin).

What we notice is that the coefficients of all three different immigrant status variables manifest significance at the 1% level, a positive effect as well as a very similar effect amplitude, shown in the table as equating to roughly 0.3. This suggests that the level of development of immigrants' country of origin does not matter significantly in the effect of immigrant status on entrepreneurial activity.

A link can be drawn to the research carried out by Vandor & Franke (2016), which showed a higher propensity to identify profitable business opportunities in students who had spent a semester abroad, compared to those who had stayed in the home university. In parallel to our results, a posit could be made that the cross-cultural experience bears a positive influence on entrepreneurial inclination.

Table 5.1 Output of the logistic regression analyses of immigration status on opportunity entrepreneurship and on intention to engage in entrepreneurship

Variable	Dependent variable: *Opportunity TEA*			Dependent variable: *Entrepreneurial Intention*		
	(A)	(B)	(C)	(D)	(E)	(F)
Citizen status						
Immigrant from developed country	0.309***			0.727***		
	(0.087)			(0.058)		
Immigrant from developing country	0.298**			1.025***		
	(0.096)			(0.056)		
Immigrants Developing		0.298**			1.025***	
		(0.096)			(0.056)	
All Immigrants			0.304***			0.874***
			(0.066)			(0.042)
Gender	0.669***	0.670***	0.669***	0.447***	0.442***	0.448***
	(0.040)	(0.041)	(0.040)	(0.027)	(0.028)	(0.027)
Age	0.109***	0.111***	0.109***	0.030***	0.032***	0.030***
	(0.010)	(0.010)	(0.010)	(0.007)	(0.007)	(0.007)
Age^2	-0.002***	-0.002***	-0.002***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Educational Attainment						
Primary	0.085	0.181	0.085	-0.049	0.018	-0.055
	(0.406)	(0.435)	(0.406)	(0.235)	(0.255)	(0.235)
Lower Secondary	0.297	0.369	0.297	0.241	0.318	0.236
	(0.386)	(0.417)	(0.386)	(0.221)	(0.241)	(0.221)
Upper Secondary	0.857*	0.941*	0.858*	0.510*	0.600*	0.502*
	(0.384)	(0.414)	(0.384)	(0.220)	(0.240)	(0.220)
Post-Secondary non-Tertiary	0.831*	0.890*	0.831*	0.442*	0.515*	0.433
	(0.386)	(0.416)	(0.386)	(0.221)	(0.242)	(0.221)
Tertiary first stage	1.269***	1.334**	1.269***	0.675**	0.754**	0.664**
	(0.383)	(0.414)	(0.383)	(0.220)	(0.240)	(0.220)
Tertiary second stage	1.597***	1.681***	1.598***	0.946***	1.054***	0.936***
	(0.397)	(0.427)	(0.397)	(0.236)	(0.256)	(0.235)
Constant	-6.064***	-6.162***	-6.065***	-2.772***	-2.865***	-2.758***
	(0.430)	(0.459)	(0.430)	(0.250)	(0.270)	(0.250)
Observations	66745	64209	66745	64323	61943	64323

Standard errors in parentheses; * p<0.05, ** p<0.01, *** p<0.001

Hypothesis 1b

Analogously, Columns D, E and F in Table 5.1 display the corresponding coefficients of similar models to those in Columns A, B and C, only with *"Entrepreneurial intention"* as dependent variable. Again, the effect of being an immigrant is positive on the intention to

undertake entrepreneurial activity, including self-employment, and ignoring the distinction between opportunity and necessity motive. In this instance however, the level of development of the immigrants' country of origin does present an importance. Indeed, all three models show that being an immigrant from a developing country further increases the likelihood of having entrepreneurial intentions, relative to an immigrant from a developed country. This supplementary effect is significant at the 0.1% level.

Interpretation: Hypotheses 1a and 1b

To shed light on the output in a more interpretable manner, we present the results in terms of probabilities in the table of Appendix 2. We compare the likelihoods to take part in opportunity driven entrepreneurship between hypothetical individuals with differing observable characteristics. The values are taken from the main model in Column A of Table 5.1. For instance, the first three cases are males, aged 43 (the median age of our sample) and have the highest educational attainment. Where they are different is in their immigrant status. One is native, the second is an immigrant from a developed country and the third is an immigrant from a developing country. From these three individuals, the table shows that being an immigrant increases the likelihood by an average of 3.83% and 3.69% respectively, in absolute terms; from 12.68% for the native, to 16.51% and 16.37% for the two immigrant cases. A similar comparison is displayed with individuals aged 36 (the age corresponding to the highest likelihood to take part in opportunity driven entrepreneurship), for which the effects are more pronounced. Another important element to highlight is the effect of gender. Males are almost twice as likely to undertake entrepreneurial activity, across all categories of immigration status.

Similarly, the table in Appendix 3 shares the same interpretation for the output from the main model in Column D, run to test Hypothesis 1b. In absolute terms, at 43 years old, being a highly educated male immigrant from a developed country increases the likelihood of having entrepreneurial intentions by 12.68%, relative to natives, *ceteris paribus*. For immigrants originating from a developing country, this same likelihood increases by 19.23% relative to natives. At the age for which the likelihood is highest, 18 years old, these values are 15.83% and 23.17% respectively. Gender also remains a significant factor in the likelihood of having entrepreneurial intentions, with males being more likely to have entrepreneurial intentions.

Hypothesis 2

For this hypothesis, a set of 12 logistic regressions is run to assess the significance of industry choice among opportunity driven immigrant entrepreneurs. Each of them consists of one binary variable indicating whether the entrepreneur is active in the corresponding industry, being regressed on the categorical variable *"Citizen status"*, as well as the usual control variables. The models also restrict themselves to the 14 EU countries, as well as the opportunity driven entrepreneurship type. The outcome is shown in Table 5.2, from which it is clear that only the models 6 and 7 show a significant effect (at the 5% level) of immigrant status on the industry choice. These two industries are those of *Retail trade, Hotels & Restaurants* and *Information & Communication* respectively. The former type includes Event Catering, Mobile Food services, Restaurants, Hotels, Camping grounds, etc. The latter includes publishing agencies, radio/TV broadcasting, computer programming, web-related businesses, etc.

It is important to point out that in both these models, only the category of immigrants from developing countries is found to bear an effect on the choice of industry. What is also of interest is the fact that being an entrepreneurial immigrant from a developing country has a positive effect on the business's likelihood to be active in the industry of *Retail trade, Hotels & Restaurants*, but a negative effect on the likelihood to find itself in that of *Information & Communication*. A possible explanation for the significantly smaller likelihood for immigrant entrepreneurs to be active in the latter industry could be based on the findings of Grugulis & Stoyanova (2012) which provide evidence that this specific area of business is one where social capital and contact networks considerably facilitate success, more so than in other industries. This, coupled with the fact that immigrants generally manifest lower social capital, smaller social networks and less ethnic diversity within their social networks (Kazemipur, 2004, 2006) could be a relevant account of the negative effect seen in model 7.

Gender and age are found to be significant controls in some of the models. What is noteworthy is that, out of the two significant models, gender has a positive effect for model 7 only. The effect of being a male opportunity driven entrepreneur actually decreases the likelihood of engaging in the industry of *Information & Communication*. Age has a negative effect in both models. Educational attainment cannot be qualified as significant in these analyses.

Table 5.2 Output of the 12 logistic regression analyses of immigration status on the type of industry for entrepreneurial activity

	Dependent variable:											
Variable	TEA Industry 1	TEA Industry 2	TEA Industry 3	TEA Industry 4	TEA Industry 5	TEA Industry 6	TEA Industry 7	TEA Industry 8	TEA Industry 9	TEA Industry 10	TEA Industry 11	TEA Industry 12
Citizen status												
Immigrant developed country	-0.855	0.003	-0.270	0.096	0.199	0.276	-0.377	-0.138	-0.044	0.576	0.027	-0.937
	(0.725)	(0.381)	(0.398)	(0.473)	(0.404)	(0.198)	(0.376)	(0.431)	(0.239)	(0.331)	(0.220)	(0.592)
Immigrant developing country	0	-0.235	-0.282	-0.613	-0.198	0.483*	-1.586*	-0.586	0.278	0.662	-0.087	0.110
	(ø)	(0.435)	(0.430)	(0.725)	(0.521)	(0.208)	(0.719)	(0.595)	(0.245)	(0.348)	(0.253)	(0.402)
Gender	0.344	1.151***	0.060	0.905***	0.853***	-0.312**	0.848***	0.382	0.284*	-0.017	-1.008***	-0.299
	(0.251)	(0.215)	(0.167)	(0.273)	(0.233)	(0.095)	(0.181)	(0.209)	(0.117)	(0.187)	(0.104)	(0.182)
Age	0.024*	-0.009	0.014*	0.019*	0.002	-0.006	-0.021**	0.015	0.006	0.006	-0.001	-0.019*
	(0.009)	(0.007)	(0.007)	(0.009)	(0.008)	(0.004)	(0.007)	(0.008)	(0.005)	(0.008)	(0.004)	(0.008)
Educational Attainment												
Primary	-1.868	-0.146	-0.526	0.467	2.622*	-0.231	-1.353	-0.646	-3.055**	-0.373	-1.478*	0.000
	(1.345)	(1.177)	(1.187)	(1.020)	(1.088)	(0.832)	(1.098)	(1.170)	(1.037)	(1.214)	(0.579)	(.)
Lower Secondary	1.552	-0.038	-0.797	1.148	1.667	-0.385	-1.220*	-0.548	-1.720***	-1.221	-1.102***	-0.706
	(1.167)	(1.105)	(1.111)	(0.755)	(1.038)	(0.786)	(0.573)	(0.719)	(0.324)	(1.136)	(0.299)	(0.494)
Upper Secondary	-1.673	-0.436	-0.617	0.462	1.610	-0.774	-0.343	0.243	-1.324***	-0.676	-0.875***	-0.493
	(1.151)	(1.099)	(1.097)	(0.749)	(1.021)	(0.781)	(0.456)	(0.618)	(0.262)	(1.104)	(0.262)	(0.430)
Post-Secondary non-Tertiary	-2.093	-0.767	-0.947	0.706	1.855	-0.807	0.083	0.182	-1.270***	-0.988	-0.622*	-0.582
	(1.179)	(1.111)	(1.109)	(0.762)	(1.028)	(0.785)	(0.467)	(0.645)	(0.285)	(1.120)	(0.273)	(0.464)
Tertiary first stage	-2.250	-1.530	-1.228	0.104	1.027	-1.139	0.353	0.530	-0.429	-1.057	-0.519*	-0.474
	(1.153)	(1.105)	(1.097)	(0.745)	(1.022)	(0.779)	(0.438)	(0.603)	(0.242)	(1.102)	(0.250)	(0.419)
Tertiary second stage	-2.246	-1.888	-1.081	0	0	-2.038*	0	0	0	-1.824	0	0
	(1.341)	(1.304)	(1.180)	(ø)	(ø)	(0.859)	(ø)	(ø)	(ø)	(1.304)	(ø)	(ø)
Constant	-2.676*	-2.370*	-2.367*	-5.252***	-5.217***	0.056	-2.291***	-4.242***	-1.333***	-2.345*	-0.243	-1.540**
	(1.238)	(1.152)	(1.140)	(0.859)	(1.080)	(0.800)	(0.522)	(0.702)	(0.314)	(1.156)	(0.306)	(0.515)
Observations	*2593*	*2714*	*2714*	*2707*	*2707*	*2714*	*2707*	*2707*	*2707*	*2714*	*2707*	*2657*

Standard errors in parentheses; * p<0.05, **p<0.01, *** p<0.001

Interpretation: Hypothesis 2

We give a direct interpretation of the logistic regression output of these models. We look at models 6 and 7 in particular, since they are the ones shown to be significant. The review is also restricted to the effect of being an immigrant from a developing country, relative to a native. Tables in Appendices 4 and 5 display the following. At 43 years old, for the likelihood of a highly educated male engaging in *Retail trade, Hotels & Restaurants* (model 6 in Table 5.2), the effect of being an immigrant from a developing country represents a 3.81% increase in absolute terms, relative to natives, *ceteris paribus*. As for the likelihood of engaging in *Information & Communication*, the same characteristics for an immigrant from a developing country lead to a decrease of 9.2% in absolute terms, relative to natives, *ceteris paribus*. At 36 years old, these values are 3.95% and -10.43% respectively.

Overall, this hypothesis examination puts forward a slight distinction in the type of industry that opportunity driven immigrant entrepreneurs find themselves in. However, the fact that only two models out of the twelve total show significant effects, and this being only for the immigrants originating from developing countries, suggests that the evidence is relatively weak and that the significance could be explained on the grounds of random luck. Our inference in this part is therefore considered doubtful.

5.2 Configuration of immigrant entrepreneurship

Hypothesis 3

The model run to test this hypothesis is unlike the other ones of our study in that it consists of a standard OLS regression analysis. It regresses the continuous variable *"Number of Jobs"* on the recurring independent variable *"Citizen status"*. As Table 5.3 exhibits in Column A, the effect of being an immigrant is found to be negative and significant at the 1% level. In practical terms, this means that immigrants are more likely to have fewer employees. Contrarily to the previous regression models, we can directly interpret the coefficients given here as we are dealing with OLS for a continuous variable. On average, immigrant entrepreneurs have smaller businesses than their native counterparts. The orders of magnitude for immigrants from developing countries and for those from developed countries respectively are at 0.48 employees and 0.41 employees, which are non-negligible values, as we take into account the

distribution of the observations. The summary statistics shown in the Data section pertaining to the variable *"Number of Jobs"* show that the observations are considerably skewed towards zero and that the mean value is 0.45. The implication of this distribution is that the magnitudes revealed in the output of the regression are markedly significant, as they represent around one unit measure of the mean value.

To further confirm the effect, like in the analyses for hypotheses 1a and 1b, we also compare this model to those where *"Citizen status"* is replaced by *"Immigrants developing"* in Column B, and by *"All Immigrants"* in Column C. This comparison reveals that the considered effect does not change depending on the level of development of the origin country.

Hypothesis 4

Table 5.3 also shows the regression output of the model for our fourth hypothesis. The analysis is of logistic nature and regresses the binary variable *"Customer International Orientation"* on the usual independent variable of immigration status as well as the control variables. The finding is that, relative to their native counterparts, at the 1% level, opportunity driven immigrant entrepreneurs manifest a significantly higher likelihood of having more than 25% of their customer base located abroad. The effect is even somewhat larger for immigrants originating from a developed economy, than one from a developing economy. This is shown in Column D. Once again, as seen in Columns E and F, we perform a similar comparison to the one done for Hypotheses 1a, 1b and 3. It reveals that the level of development of the immigrants' country of origin does indeed bear significance on the international orientation of their business's customer base.

Interpretation: Hypothesis 4

The table is Appendix 6 presents the information for a more direct interpretation of the main logistic regression model (Column D of Table 5.3) run to test this hypothesis. For a 43-year-old, highly educated opportunity driven entrepreneurial male, the likelihood of having more than 25% of his customer base located abroad increases by 15.12% for immigrants from developed countries and by 12.78% for immigrants from developing countries, in absolute terms. These values are unexpectedly similar for an individual ranging in the ages of 25-55

years old. Gender remains significant and positive, with males having a likelihood of around 1.5 times larger than females.

Table 5.3 Output of the regression analyses of immigration status on the size of the business and on the customer base's international orientation

Variable	Dependent variable: *Number of Jobs*			Dependent variable: *Customer International Orientation*		
	(A)	(B)	(C)	(D)	(E)	(F)
Citizen status						
Immigrant from developed country	-0.413**			0.781***		
	(0.129)			(0.200)		
Immigrant from developing country	-0.476**			0.676**		
	(0.170)			(0.222)		
Immigrants Developing		-0.481**			0.680**	
		(0.174)			(0.222)	
All Immigrants			-0.443***			0.734***
			(0.131)			(0.154)
Gender	0.050	0.063	0.050	0.543***	0.541***	0.543***
	(0.144)	(0.153)	(0.143)	(0.117)	(0.122)	(0.117)
Age	0.024**	0.026**	0.024**	-0.054*	-0.058*	-0.054*
	(0.009)	(0.009)	(0.009)	(0.026)	(0.027)	(0.026)
Age^2				0.001*	0.001*	0.001*
				(0.000)	(0.000)	(0.000)
Educational Attainment						
Primary	-1.292	-1.285	-1.281	-0.113	-0.349	-0.101
	(0.869)	(0.871)	(0.878)	(1.190)	(1.204)	(1.189)
Lower Secondary	-1.700*	-1.699*	-1.689*	0.018	-0.255	0.028
	(0.761)	(0.764)	(0.773)	(1.107)	(1.123)	(1.107)
Upper Secondary	-1.542*	-1.525*	-1.532*	0.493	0.183	0.502
	(0.768)	(0.771)	(0.779)	(1.096)	(1.111)	(1.096)
Post-Secondary non-Tertiary	-1.691*	-1.701*	-1.679*	0.243	-0.052	0.254
	(0.759)	(0.762)	(0.771)	(1.102)	(1.118)	(1.102)
Tertiary first stage	-1.503*	-1.487	-1.492	0.690	0.438	0.702
	(0.763)	(0.766)	(0.774)	(1.094)	(1.109)	(1.093)
Tertiary second stage	-0.282	-0.220	-0.274	1145	0.775	1152
	-1.603	-1.655	-1.617	(1.116)	(1.135)	(1.116)
Constant	0.980	0.905	0.968	-1.582	-1.232	-1.593
	(0.860)	(0.873)	(0.875)	(1.225)	(1.244)	(1.224)
Observations	*1464*	*1393*	*1464*	*2668*	*2532*	*2668*

Standard errors in parentheses; * p<0.05, ** p<0.01, *** p<0.001

Conclusion

This paper revolved around the topic of immigrant entrepreneurship in the developed countries of the European Union. The region sees entrepreneurship as contributory to a large share of economic development and employment provision, among many other macro-level economic indicators. Using the 2013 GEM Adult Population Survey, we took the specific subset of opportunity driven entrepreneurship as central focus which aligns with Schumpeter's perception of an entrepreneur (Block, Fisch & van Praag, 2017). Based on the previous findings that international immigrants manifest distinct personality traits towards work and family orientation, coupled with the concept of opportunity entrepreneurship, we set out to study the relationship between immigrant status and opportunity driven entrepreneurial activity. More specifically, we sought to answer the following question:

What are the effects of immigration on opportunity driven entrepreneurial activity at the individual level in developed economies of the European Union?

To do so, we aimed to test four related hypotheses which touched upon the various particularities of immigrant entrepreneurs compared to their native peers. Overall, the findings are that being an immigrant significantly increase the likelihood of taking part in opportunity driven entrepreneurship as well as having the intention to do so. Moreover, the distribution of immigrant entrepreneurs among the various industry types does not show significant differences compared to that of native entrepreneurs. This helps to suggest that the spread of entrepreneurial activity is the same for immigrants as for natives, in that the distribution of the various business 'roles' of society is arguably equal. Furthermore, immigrants are found to employ fewer employees in their businesses than natives. Finally, our evidence points to the fact that immigrant entrepreneurs are more likely to have over a quarter of their customer base located abroad, relative to natives.

Concerning the implications of the research, it could be argued that there is a lesson to be learned in the world of entrepreneurship. Indeed, immigrant businesses are less likely to have a larger number of employees working for them, all the while occupying the same business roles of society as their native peers. This could perhaps point towards a larger efficiency among immigrants to accomplish the same work with a smaller headcount. In turn, it can be a relevant subject to explore further, given the diminishing workforce and the increasingly high

dependency rates in the developed Western world, caused by an aging population (Buyens, Van Dijk, Dewilde, & De Vos, 2009). If there is in fact something distinct in the ways of immigrant entrepreneurship, it would be beneficial to try to identify the relevant features and look into applying them in native strategy.

However, it is worth noting that in this research, we provide evidence for a similar spread in the various industries of business, and not exactly in the bottom-line contribution in terms of economic input. Therefore, some deeper analysis in the roles of opportunity driven immigrant and native entrepreneurship would be valuable.

A possible shortcoming of our research is that the dichotomy of opportunity and necessity driven entrepreneurship might not even be as relevant as once thought. It has been advanced that many entrepreneurial endeavours are started out of a combination of both types of motive (GEM, 2019). Therefore, it would be desirable to study the subject by controlling for more detailed indicators of motivations, such as the degree of desire for better income or the amount of time and effort spent on searching for a standard job before engaging in entrepreneurship.

Another flaw could be the internal validity of the research, as some factors might be put forward as affecting both immigrant status and the participation in entrepreneurship. Such elements as prior income or education of parents could be impacting the results in an undetected way. A way to compensate for this would be through the use of panel data, which would account for effect of time-unvarying unobservable factors. Concerning the external validity, it is arguably quite large, as we take into account no less than 14 developed countries in the European Union, as well as a representative sample of the total population, ensured by GEM's thorough and centralised surveying methodology. Nevertheless, it cannot be said that the same results would occur in other parts of the world, for less developed economies. The type of entrepreneurship is also restricted to that which is opportunity driven, which further restrains the conclusions.

Given its novel perspective on the entrepreneurial dynamics in the European Union, our paper will hopefully stand as a trigger for deeper and more elaborate studies on the topic and its related implications.

For future research, it might be of interest to examine the relationship between amount of time elapsed since the move to the host country by foreign immigrants and their propensity to engage in entrepreneurship. As pointed out by Laurentsyeva and Venturini (2017), with favourable policy and enough time, immigrants are found to better integrate society and share the host country's values. In line with this, it could perhaps be the case that immigrants who have stayed longer in the host country develop similar behaviour to natives and therefore become less likely to engage in entrepreneurship.

Abbreviations list

-GEM: Global Entrepreneurship Monitor
-ISIC: International Standard Industrial Classification of all economic activities
-SME: Small and Medium-sized Enterprises
-TEA: Total early-stage Entrepreneurial Activity

Appendix

Appendix 1: Overview of the 12 business classifications according to the UN's ISIC reference

Isic code	Industry type
1	Agriculture, Forestry & Fishing
2	Mining & Construction
3	Manufacturing
4	Utilisation, Transport & Storage
5	Wholesale Trade
6	Retail Trade, Hotels & Restaurants
7	Information And Communication
8	Financial Intermediation & Real Estate Activities
9	Professional Services
10	Administrative Services
11	Government, Health, Education & Social Services
12	Personal/Consumer Service Activities

Appendix 2: Overview of the likelihoods to engage in opportunity driven entrepreneurship for different individuals

Individual characteristics			**Logistic formula output**	**Probability of taking part in Opportunity TEA**	**Absolute difference to native (males)**
Highly educated, 43 years old	Immigrant from developing country:	male	-1,6310	16,37%	3,69%
		female	-2,2996	9,12%	
	Immigrant from developed country:	male	-1,6207	16,51%	3,83%
		female	-2,2893	9,20%	
	Native:	male	-1,9295	12,68%	
		female	-2,5981	6,93%	
Highly educated, 36 years old	Immigrant from developing country:	male	-1,5519	17,48%	3,90%
		female	-2,2205	9,79%	
	Immigrant from developed country:	male	-1,5416	17,63%	4,05%
		female	-2,2101	9,88%	
	Native:	male	-1,8503	13,58%	
		female	-2,5189	7,45%	

Appendix 3: Overview of the likelihoods to intend to engage in entrepreneurship within the next 3 years for different individuals

Individual characteristics			Logistic formula output	Probability of intending to engage in Opportunity TEA	Absolute difference to native (males)
Highly educated, 43 years old	Immigrant from developing country:	male	-0,5736	36,04%	19,23%
		female	-1,0209	26,48%	
	Immigrant from developed country:	male	-0,8715	29,49%	12,68%
		female	-1,3189	21,10%	
	Native:	male	-1,5990	16,81%	
		female	-2,0463	11,44%	
Highly educated, 18 years old	Immigrant from developing country:	male	-0,0729	48,18%	23,17%
		female	-0,5202	37,28%	
	Immigrant from developed country:	male	-0,3708	40,84%	15,83%
		female	-0,8181	30,62%	
	Native:	male	-1,0982	25,01%	
		female	-1,5456	17,57%	

Appendix 4: Overview of the likelihoods to engage in entrepreneurship within the industry of Retail trade, Hotels & Restaurants for different individuals

Individual characteristics			Logistic formula output	Probability of intending to engage in TEA Industry 6	Absolute difference to native (males)
Highly educated, 43 years old	Immigrant from developing country:	male	-2,1241	10,68%	3,81%
		female	-1,8118	14,04%	
	Native:	male	-2,6075	6,87%	
		female	-2,2953	9,15%	
Highly educated, 36 years old	Immigrant from developing country:	male	-2,0822	11,08%	3,95%
		female	-1,7700	14,55%	
	Native:	male	-2,5657	7,14%	
		female	-2,2534	9,51%	

Appendix 5: Overview of the likelihoods to engage in entrepreneurship within the industry of Information & Communication for different individuals

Individual characteristics			Logistic formula output	Probability of intending to engage in TEA Industry 7	Absolute difference to native (males)
Highly educated, 43 years old	Immigrant from developing country:	male	-3,5897	2,69%	-9,20%
		female	-4,4380	1,17%	
	Native:	male	-2,0032	11,89%	
		female	-2,8515	5,46%	
Highly educated, 36 years old	Immigrant from developing country:	male	-3,4409	3,10%	-10,43%
		female	-4,2892	1,35%	
	Native:	male	-1,8545	13,54%	
		female	-2,7027	6,28%	

Appendix 6: Overview of the likelihoods to have more than 25% of the customer base located abroad for different profiles of opportunity driven entrepreneurs

Individual characteristics			Logistic formula output	Probability of having over 25% of the customer base abroad	Absolute difference to native (males)
Highly educated, 43 years old	Immigrant from developing country:	male	-0,7387	32,33%	12,78%
		female	-1,2818	21,73%	
	Immigrant from developed country:	male	-0,6334	34,67%	15,12%
		female	-1,1765	23,57%	
	Native:	male	-1,4144	19,55%	
		female	-1,9575	12,37%	
Highly educated, 36 years old	Immigrant from developing country:	male	-0,7342	32,43%	12,80%
		female	-1,2773	21,80%	
	Immigrant from developed country:	male	-0,6290	34,77%	15,15%
		female	-1,1721	23,65%	
	Native:	male	-1,4100	19,62%	
		female	-1,9531	12,42%	

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