

EARLY-STAGE ENTREPRENEURIAL ASPIRATIONS IN EFFICIENCY-DRIVEN ECONOMIES

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Abstract

The aim of this article is to identify the influencing factors of early-stage entrepreneurial aspirations in efficiency-driven economies based on Global Entrepreneurship Monitor (GEM) Adult Population Survey (APS) database for the year 2008. Within the entrepreneurial aspirations the innovativeness of entrepreneurial businesses and the job growth expectations were studied.

Keyword: early-stage entrepreneur, entrepreneurial aspirations, Global Entrepreneurship Monitor.

JEL Classification: M13, J24

1. Introduction

Earlier studies proved that the results of the entrepreneurial activity can be related to the entrepreneurial aspirations (Wiklund & Shepherd, 2003; Cassar, 2007). This fact

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reveals the importance of factors influencing the entrepreneurial aspirations. Previous research explaining entrepreneurial aspirations and ambitions found many determinants on different levels of analyses. In the present paper, we will focus upon the high-growth expectation and innovation orientation of the early-stage entrepreneurs in efficiency-driven economies.

The factors influencing individual decisions to become an innovation-oriented or high-growth early-stage entrepreneur can be classified into individual factors, which include demographic characteristics (gender, age), wealth, household income, current working status, individual human capital (education, working experience), individual perceptions towards entrepreneurship (opportunities recognition, fear of failure, entrepreneurial skills and abilities), motivations (improvement-driven opportunity or necessity); macroeconomic factors (venture capital availability, economic freedom index, inflation rate, country risk).

The aim of this paper is to investigate two research questions. First, which are the influencing factors of becoming an innovation-oriented early-stage entrepreneur in efficiency-driven economies? Second, which are the influencing factors of becoming an early-stage entrepreneur with high-growth expectations in these countries?

The literature regarding innovative entrepreneurship is relative poor, due to the lack of data sources, which contain information about innovation-oriented entrepreneurs. We contribute to the empirical literature by examining the influencing factors of becoming an innovation oriented, respectively a high-growth expectation early-stage entrepreneur in efficiency-driven economies in 2008 based on Global Entrepreneurship Monitor (GEM) Adult Population Survey (APS) data.

The paper is organized as follows. We first review the literature related to entrepreneurial aspirations, focusing upon innovation orientation and high-growth expectation. In the subsequent sections, we will describe the data and the research methodology and we will present the results of our empirical analysis. Finally, we discuss and interpret our findings and draw some conclusions.

II. Literature review

According to Amorós et al. (2011) the new entrepreneurial businesses may serve new segments or try new methods that their rivals who have been on the scene failed to identify or to respond due to lack of flexibility. These entrepreneurial firms help nations' innovation systems, allowing them to adapt to the changing conditions of global competitiveness and provides them with the capacity to establish differences in order to increase the value acknowledged by their markets. Entrepreneurship and innovation processes are key factors to increase economic dynamism (Minniti et al., 2006). Koellinger (2008) studies the factors, which explain why nascent entrepreneurs may choose innovative entrepreneurship over imitation using GEM data. The results suggest that innovative entrepreneurs are likely to be male, educated, unemployed, confident in their entrepreneurial skills, to be opportunity-motivated and likely to live in a developed country. He pointed out that there is no statistically significant effect of risk aversion, social network, or the share of population with tertiary education.

A number of studies relate motives to aspirations, also referred to as ambitions, growth intentions or growth attitudes (Kolvereid, 1992; Amit et al., 2001; Morris et al., 2006; Cassar, 2007). For necessity-motivated entrepreneurs their daily economic survival will depend strongly on the survival of their business, which may negatively affect the aspirations they have with their firm (Hessels et al., 2008).

Sanditov & Verspagen (2011) study the influence of macroeconomic and individual level variables upon the probability of entering innovative early-stage entrepreneurship. They find that individual factors have similar effects on the probability of entering innovative and imitative entrepreneurship. Older entrepreneurs are less innovative, more interested in their status quo and more risk averse (Terjesen & Szerb, 2008). Previous research at the microlevel suggests that independence is a prime entrepreneurial motive for creating innovative ventures (Corman et al. 1988).

Regarding a country's level of growth, it can be expected that a higher rate of economic growth will provide entrepreneurial opportunities and therefore entrepreneurial aspirations are positively related to economic growth (Thurik et al. 2008).

Autio (2007) finds that entrepreneurial activities and attitudes are significantly associated with high-expectation and high-growth entrepreneurship. Autio (2007) also points out that high-expectation and high-growth entrepreneurs are more likely to exhibit entrepreneurial attitudes and activities than other entrepreneurs and the general population, with a few exceptions. According to Autio (2007) and Terjesen & Szerb (2008), recent personal acquaintance with an entrepreneur and the ability to see good business opportunities is positively and significantly related to business growth. Autio (2007), Cassar (2007), Verheul & van Mil (2008) and Autio & Acs (2009) find that entrepreneurs who are less risk averse are more likely to have an ambition to grow the firm.

Davidsson (1989) shows that expectations of increased independence are positively related to ambitions to grow. Cassar (2007) shows that income motivation is the most important factor that affects the entrepreneurial growth preferences. Hessels et al. (2008) conclude also on results, which support the view that for entrepreneurs primarily motivated to increase wealth, job growth and export orientation are needed to achieve the financial gains that they desire. They confirm that entrepreneurs mainly motivated by independence do not have a strong focus on growth, respectively there is a positive relationship between increase-wealth-motivated entrepreneurs and the high-job-growth. Teruel & de Wit (2011) find financial motives to be related to growth ambitions, too.

To understand the determinants of entrepreneurial aspirations, many researchers have studied entrepreneurs' personal characteristics. According to Kjeldsen et al. (2004), Schøtt & Bager (2004), Autio (2005, 2007), Menzies et al. (2006), Tominc & Rebernik (2006), Terjesen & Szerb (2008), Verheul & van Mil (2008), Karedeniz & Özçam (2010), female entrepreneurs rarely become growth entrepreneurs. In the GEM data, age and gender are statistically significantly associated with high-growth aspirations, with younger individuals and men typically indicating higher growth aspirations than older individuals and women (Autio, 2007).

Acs et al. (2008) underline the relationship between nascent entrepreneurship and country risk. They find a strong and significant relationship with the composite risk

index, individuals are more likely to choose and succeed in joining the formal sector if the political, economic and financial risks are low. Nystrom (2008) examines the relationship between economic freedom and entrepreneurship. She finds that a smaller size of government, better legal structure and security of property rights, and less regulation of credit, labour and business all increase rates of entrepreneurship. Sobel et al. (2007), Bjornskov & Foss (2008) and Powell & Rodet (2010) examine the impact of economic freedom upon the entrepreneurship rate. According to Powell & Rodet (2010) new entrepreneurs are likely to be most affected by economic freedom. The empirical literature on the role of institutions of economic freedom in promoting entrepreneurship is relatively new (Powell & Rodet, 2010). Bygrave et al. (2003) state that informal venture capital is the primary source of external equity finance for new businesses. Burke et al. (2008) point out that economic freedom is an indicator for the availability of exit opportunities for early stage informal investors, too. Venture capital per capita has a positive effect in most of their models. Freytag & Thurik (2007) report also on the influence of economic freedom for entrepreneurship.

Starting from these remarks, our study aims to emphasize the individual and country level factors influencing the innovation-oriented early-stage entrepreneurial activity as well as high-growth expectation early-stage entrepreneurial activity in efficiency-driven economies, based on 2008 GEM APS data.

III. Methodology and data

GEM is a large scale research program launched in 1997 by leading researchers in the field of entrepreneurship at London Business School and Babson College. The first research was published in 1999 and it included 10 countries. Since then the project has been extended to include 43 in 2008. The main aim of GEM research is to study the complex relationship between entrepreneurship and economic growth, to measure the level of entrepreneurial activity between countries, to uncover the determinant factors and to identify policies which may stimulate the level of entrepreneurial activity, admitting that entrepreneurship contributes to economic growth (Baumol, 2002; Acs et al., 2004; Wennekers et al., 2005; Acs et al., 2008; Hessels & van Stel, 2009).

In each country, a survey company conducts a telephone survey or face-to-face interview of the adult population¹. This survey was carried out to measure the entrepreneurial behaviour and the attitudes of adult population on country-level, allowing international comparison and global view on entrepreneurship.

The Global Entrepreneurship Monitor Global Reports (Bosma et al., 2009, p.4; Bosma & Levie, 2010, p.5) classify the participating countries in three groups which are considered to be relevant to entrepreneurship in relation to economic development, on the basis of the Global Competitiveness Reports. In the first stage, the economy is *factor-driven* and countries compete based on their factor endowments: primarily unskilled labour and natural resources. Companies compete on the basis of price and sell basic products or commodities, with their low productivity reflected in low wages.

¹ Aged between 18-64 years.

Maintaining competitiveness at this stage of development hinges primarily on well-functioning public and private institutions, well-developed infrastructure, a stable macroeconomic framework, and a healthy and literate workforce. As wages rise with advancing development, countries move into the *efficiency-driven stage* of development, when they must begin to develop more efficient production processes and increase product quality. At this point, competitiveness is increasingly driven by higher education and training, efficient goods markets, well-functioning labour markets, sophisticated financial markets, a large domestic and/or foreign market, and the ability to harness the benefits of existing technologies. Finally, as countries move into the *innovation-driven stage*, they are able to sustain higher wages and the associated standard of living only if their businesses are able to compete with new and unique products. At this stage, companies must compete through innovation, producing new and different goods using the most sophisticated production processes (Schwab, 2009, pp. 7-8). Our analysis focuses on the entrepreneurial aspirations which characterise the efficiency-driven economies^{2,3}, based on 2008 GEM Adult Population Survey data. Our sample contains 2973 observations identified as early-stage entrepreneurs⁴.

Entrepreneurial activity is seen as a process. GEM measures entrepreneurial intentions, nascent, new and established business activity and business discontinuation activity (Bosma & Levie, 2010, p. 61). In the present study among these concepts we used the following terms:

- *Nascent entrepreneurs* are those individuals aged between 18-64 years who are actively planning a new venture. These entrepreneurs have done something during the previous 12 months to help start a new business, that he or she will at least partly own. Activities such as organizing the start-up team, looking for equipment, saving money for the start-up or writing a business plan would all be considered as active commitments to starting a business. This business has not paid salaries, wages or any other payments to the owners for more than three months.
- *Young business entrepreneurs* are those entrepreneurs who at least partly own and manage a new business that is between 4 and 42 months old and have not paid salaries for longer than this period. These new ventures are in the first 42 month after the new venture has been set up.
- *Early-stage entrepreneurs* refer to the early-stage entrepreneurial activity among the adult population aged between 18-64 years, identified as nascent or young business entrepreneurs. In those cases when the respondent is involved both as

² In 2008 the GEM countries with efficiency-driven economies both in 2008 and in 2009 were: Argentina, Brazil, Chile, Croatia, Hungary, Latvia, FYR of Macedonia, Mexico, Peru, Romania, Russia, Serbia, South-Africa, Turkey, Uruguay.

³ The GEM countries participating in 2008 classified as factor-driven economies in transition to efficiency driven economies in 2008 and becoming efficiency-driven economies in 2009 are included: Bosnia and Herzegovina, Colombia, Ecuador and Iran.

⁴ From the initial sample were excluded those early-stage entrepreneurs who responded don't know, refused to answer or gave an answer which couldn't be coded at least at one of the questions regarding the variables analyzed in this study.

nascent and young business entrepreneur then the respondent is counted only once as a nascent entrepreneur.

Entrepreneurial aspirations reflect the qualitative nature of entrepreneurial activity. They can significantly affect the economic impact of entrepreneurial activities. The studied entrepreneurial aspirations are the followings:

- *High-growth expectation early-stage entrepreneurs 1* – are either a nascent entrepreneur or owner-manager of a new business and expect to employ at least 19 employees five years from now.
- *High-growth expectation early-stage entrepreneurs 2* – are those early-stage entrepreneurs who indicate that they expect at least ten jobs growth and job increase with at least 50%.
- *New technology oriented entrepreneurs*- those early-stage entrepreneurs who indicate that the novelty of the technology they use is high, at most one year old.
- *New product - market oriented early-stage entrepreneurs* – are early-stage entrepreneurs who indicate that their product or service is new to at least some customers and indicate that not many businesses offer the same product or service.

We used the above-mentioned aspiration expressing variables as *dependent variables* in our empirical analyses.

The influencing factors of the entrepreneurial aspirations were estimated with the use of logistic regression. The logistic regression was used to examine the relationship between the dependent and the independent variables. According to Hosmer and Lemeshow (2000, p. 31), logistic regression is multiple regression but with an outcome variable that is a categorical dichotomy and predictor variables that are continuous or categorical. The multiple logistic regressions for this study take the form:

$$\pi(X) = \frac{e^{g(X)}}{1 + e^{g(X)}}$$

where: $\pi(X) = P(Y = 1|X)$ is the conditional probability that the outcome is present, Y is the dependent variable,

X is the vector of the independent variables $X = (x_1, x_2, \dots, x_p)$,

$g(X) = \beta_0 + \beta_1 x_1 + \dots + \beta_p x_p$ is the linear combination of the independent variables, where $\beta_0, \beta_1, \dots, \beta_p \in \mathbf{R}$ are real regression coefficients.

The analysed variables were individual-level variables (entrepreneurial attitudes, entrepreneurial perceptions, motivations, socio-demographic variables) and country-level variables (GDP per capita, country risk, economic freedom, firm-level technology absorption rate, the share of R&D expenses in GDP, venture capital availability rate and inflation rate). The *explanatory variables* are shown below, in Table 1.

Table 1

Explanatory variables in the models

Notation	Name	Description	Values
Individual-level variables			
OPPORT	Opportunity perception	The questioned persons answered if they see good business opportunities for the next six months.	0=No 1=Yes
FEARFAIL	Perception of fear of failure	The questioned persons answered if they consider that fear of failure stops them in starting a business.	0=No 1=Yes
IDO	Improvement-driven early-stage entrepreneur	The respondent claim to be driven by opportunity as opposed to finding no other option for work and who indicate that the main driver for being involved in this opportunity is being independent or increasing their income, rather than just maintaining their income.	0=No 1=Yes
STAGE	Stage of activity	The respondent is nascent entrepreneur or young business owner-manager.	1=Nascent entrepreneur 2=Young business owner-manager
GENDER	Gender	The gender of the questioned person.	1=Male 2=Female
AGE	Exact age	The age of the questioned person at the time of the interview.	from 18 to 64 years
Country-level variables			
COUNTRY_RISK	Country risk	Country risk rating by COFACE 2008 in a 7 point Likert scale	A1-7, D-1
VENTCAP	Venture capital availability	Venture capital availability, entrepreneurs can find VC easily 0-7 Likert scale, (World Economic Forum)	0-7
INFLATION	Inflation rate	Inflation rate, annual % change, 2008 (World dataBank)	
ECFREE	Economic freedom index	Index of economic freedom score, 100 = the most free, 2008	0-100

Source: GEM APS, 2008, GEM Cross National Data, 2008, Schwab, K. ed. (2009), Heritage Foundation (2010), World Bank (2010).

The overview on the dependent variables of the study by analysed economies in 2008 emphasizes the territorial differences regarding the four variables in this group of efficiency-driven countries. One should keep in mind that such an assessment of innovativeness and growth expectations is context-specific and that what is innovative in one country is not necessarily regarded as innovative in another (Minniti et al. 2006, Hessels et al., 2008). Table 1 shows the values of dependent variables for the

countries in our sample. The highest high-growth expectation rate can be found in Colombia (4.31% of working age adult population), Argentina (2.28%) and the lowest in Mexico (0.21%) and Hungary (0.25%). Mexico and Hungary present also the lowest results in this group of countries regarding high job expectation rate, with 4.67%, respectively 5.19% of early-stage entrepreneurship. The highest rates can be identified in Chile (30.62%) and in Colombia (30.62%). Brazil (3.76% of early-stage entrepreneurs) and Hungary (4.55%) has the lowest, Chile (37.10%) and Peru (37.03%) have the highest new product-market combination rate in this group of countries. Hungary (0.47% of early-stage entrepreneurs) and Brazil (1.69%) are also ranked last regarding the new technology rate ranking among efficiency-driven GEM countries in 2008. The highest value of this rate can be emphasized in Chile (33.55%), followed by Macedonia (24.99%).

Table 2

Entrepreneurial aspirations in efficiency-driven economies, 2008

	High-growth expectation early-stage entrepreneurial rate (% of population aged between 18-64 years)	High job expectation rate (% of early-stage entrepreneurs)	New product-market combination rate (% of early-stage entrepreneurs)	New technology rate (% of early-stage entrepreneurs)
Argentina	2.28	24.11	30.00	6.24
Bosnia and Herzegovina	0.70	15.33	8.49	16.47
Brazil	0.75	8.81	3.76	1.69
Chile	2.21	33.07	37.10	33.55
Colombia	4.31	30.62	19.45	18.19
Croatia	0.89	19.67	9.07	20.95
Ecuador	0.60	11.04	14.49	8.35
Hungary	0.25	5.19	4.55	0.47
Iran	0.87	14.93	9.64	2.15
Latvia	1.10	25.23	24.43	9.25
FYR of Macedonia	1.20	18.04	12.95	24.99
Mexico	0.21	4.67	25.73	8.20
Peru	2.16	17.62	37.03	12.60
Romania	0.52	20.45	15.72	6.35
Russia	0.65	13.03	11.49	9.37
Serbia	0.54	20.24	12.37	18.34
South-Africa	1.04	20.51	23.49	24.75
Turkey	1.06	26.58	18.13	7.09
Uruguay	1.22	19.89	35.74	13.70

Source: GEM Master Dataset, 2008.

IV. Empirical results

Analysing the early-stage entrepreneurial aspirations four logit models has been estimated in order to determine the factors which influence significantly the innovativeness and the high-growth expectations of an early-stage entrepreneur in an efficiency-driven economy as Table 3 indicates it.

In efficiency-driven economies, the probability of becoming an early-stage entrepreneur who uses new technology is influenced significantly and positively by the venture capital availability in the country. This probability is negatively influenced by age, gender, inflation rate, economic freedom index and the status of the early-stage entrepreneur. According to this, the early-stage entrepreneurs tend to use less new technology as they advance in age, and male early-stage entrepreneurs are more likely to use new technology. The index of economic freedom has an unexpected sign, indicating that further increase of the economic freedom in case of efficiency-driven economies might influence negatively the new technology-oriented entrepreneurship. Nascent entrepreneurs are more new technology-oriented. Lower inflation and more venture capital availability of the country might cause more new technology-oriented entrepreneurial activity.

GEM combines two measures of innovation in index (new product market combination): product novelty and degree of competition. The probability of becoming an early-stage entrepreneur in an efficiency-driven economy that enters to a new market with a new product is significantly increased by business opportunity identification in the next six months, by improvement-driven entrepreneurial motivation and by venture capital availability. The status of early-stage entrepreneurs have also a significant influence, nascent entrepreneurs being more likely to enter new markets with new products. The fear of failure and the inflation rate decrease the probability to become an innovation-oriented early-stage entrepreneur.

The probability of becoming an entrepreneur with expectation of more than 19 jobs in 5 years is significantly influenced by venture capital availability and country risk, with positive sign. Age, gender, fear of failure and economic freedom index of the country are significant variables with negative sign. Younger early-stage entrepreneurs, those who doesn't consider that fear of failure would prevent them from starting a new business and male early-stage entrepreneurs are more likely to have high growth expectations. Among these variables, the only variable with unexpected sign is the index of economic freedom, since we initially considered that more economic freedom leads to higher entrepreneurial growth expectation. Our findings regarding the impact of economic freedom upon high-growth expectation entrepreneurship confirm the results of Powell & Rodet (2010). Bjornskov and Foss (2006) have shown that only certain components of the economic freedom index explain variance in entrepreneurship, which likely explains this initial result.

Fear of failure, early-stage entrepreneurial status, age and gender have a negative sign, while venture capital availability has a positive influence upon the probability of becoming an early-stage entrepreneur with high job growth expectation, with over 10 jobs and more 50% job increase.

Table 3

Influencing factors of early-stage entrepreneurial aspirations in efficiency-driven economies

	New technology			New product market combination			Expects more than 19 jobs in 5 years			Job growth >=10 persons and >= 50%		
	Coeff.	Sig.	VIF	Coeff.	Sig.	VIF	Coeff.	Sig.	VIF	Coeff.	Sig.	VIF
OPPORT				0.320	0.001	1.024						
FEARFAIL				-0.279	0.016	1.017	-0.283	0.048	1.005	-0.312	0.006	1.006
STAGE	-0.342	0.001	1.008	-2.36	0.000	1.013				-0.872	0.000	1.008
IDO				0.263	0.005	1.010						
AGE	-0.018	0.000	1.012				-0.018	0.001	1.010	-0.017	0.000	1.005
GENDER	-0.290	0.007	1.013				-0.571	0.000	1.012	-0.564	0.000	1.003
INFLATION	-0.090	0.000	1.473	-0.032	0.003	1.044						
VENTCAP	1.320	0.000	2.311	0.584	0.000	1.038	0.754	0.000	2.321	0.437	0.000	1.007
ECFREE	-0.055	0.000	2.964				-0.052	0.000	2.981			
COUNTRY_RISK							0.120	0.035	2.718			
Cox & Snell R²	0.440			0.389			0.495			0.341		
Nagelkerke R²	0.586			0.519			0.660			0.454		
Hosmer and Lemeshow Test	<i>p</i> value=0.334 (Chi-square(8) =9.103)			<i>p</i> value=0.310 (Chi-square(8) =9.399)			<i>p</i> value=0.119 (Chi-square(8) =12.802)			<i>p</i> value=0.176 (Chi-square(8) =11.475)		
Correctly classified rate	85.5%			77.4%			88.4%			79.2%		
Number of observations	2973			2973			2973			2973		

Source: Own calculations based on GEM APS Database, 2008.

The estimated regression suggests that the models correctly classify between 77.4%-88.4% of the early-stage entrepreneurs in our samples. Table 3 also shows that the values of Cox & Snell R² and Nagelkerke R² are between 0.341-0.495, respectively between 0.454-0.660. Hosmer and Lemeshow tests also indicate the goodness-of-fit of the models with *p*-value>0.05. The values of VIF (Variance Inflation Factors) show that there is no multicollinearity between the explanatory variables in the estimated models. Therefore, the model adequately describes the data.

V. Conclusions

Our study aimed to identify the influencing factors of early-stage entrepreneurial aspirations in efficiency-driven economies. Four models were estimated with individual-level (socio-demographical, perceptual variables) and country-level explanatory variables. In case of the early-stage entrepreneurial innovativeness two models were estimated, both confirming that nascent entrepreneurs are more likely to become innovation oriented and that venture capital availability of the country increases, while the inflation rate decreases the probability of becoming an innovative-oriented early-stage entrepreneur in an efficiency-driven economy. Our results confirm

the findings of Koellinger (2008) and Terjesen & Szerb (2008), male and young entrepreneurs are more likely innovative, respectively those entrepreneurs who recognize opportunity enters with greater probability to a new market with a new product. In addition to Koellinger's (2008) results, we found a negative significant relationship between the risk aversion and the probability of becoming an entrepreneur whose products are new on a new market.

Two other models were estimated in order to identify the factors, which significantly influence the probability of becoming an early-stage entrepreneur with high-growth expectation in an efficiency-driven economy. According to both models and confirming the results of Autio (2007), Cassar (2007), Verheul & van Mil (2008) and Autio & Acs (2009), those who consider that fear of failure would prevent them from starting a business are less likely to have high-growth expectations. Age and gender are also significantly influencing factors in favour of young and male early-stage entrepreneurs in both models, in accordance to the findings of Kjeldsen et al. (2004), Schøtt & Bager (2004), Autio (2005, 2007), Menzies et al. (2006), Tominc & Rebernik (2006), Terjesen & Szerb (2008), Verheul & van Mil (2008), Karedeniz & Özçam (2010). The venture capital availability of the country has a positive influence in case of both models, as Bygrave et al. (2003) and Burke et al. (2008) also pointed out.

The only variable with an unexpected influence was the economic freedom index, which can be explained by the fact that the main components of the economic freedom index (the size of government, access to sound money, the overall rule of law, regulation of international trade, and regulation of credit, labour and business) have different influence upon early-stage entrepreneurial aspirations.

Future empirical research may include other institutional elements in investigation of the influencing factors of entrepreneurial aspirations in efficiency-driven economies. It would be interesting to study the high-growth expectations, innovation and international orientation of the established entrepreneurs, in addition to nascent and new business owner-managers entrepreneurs. Regarding the unexpected influence of the economic freedom index, it would be indicated to analyze which components have the most important impact upon the entrepreneurial aspirations.

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