Saint Petersburg State University
Graduate School of Management

Master in Management Program

THE RELATIONSHIP OF ENTREPRENEURIAL SKILLS AND MOTIVATION TO SUBSEQUENT VENTURE GROWTH ASPIRATIONS: EVIDENCE FROM GEM DATA

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ЗАЯВЛЕНИЕ О САМОСТОЯТЕЛЬНОМ ХАРАКТЕРЕ ВЫПОЛНЕНИЯ ВЫПУСКНОЙ КВАЛИФИКАЦИОННОЙ РАБОТЫ

Я, Михеева Евгения Игоревна, студент(ка) второго курса магистратуры направления «Менеджмент», заявляю, что в моей магистерской диссертации на тему Связь предпринимательских навыков и мотивации с последующими устремлениями к росту: результаты анализа данных GEM», представленной в службу обеспечения программ магистратуры для последующей передачи в государственную аттестационную комиссию для публичной защиты, не содержится элементов плагиата.

Все прямые заимствования из печатных и электронных источников, а также из защищенных ранее выпускных квалификационных работ, кандидатских и докторских диссертаций имеют соответствующие ссылки.

Мне известно содержание п. 9.7.1 Правил обучения по основным образовательным программам высшего и среднего профессионального образования в СПбГУ о том, что «ВКР выполняется индивидуально каждым студентом под руководством назначенного ему научного руководителя», и п. 51 Устава федерального государственного бюджетного образовательного учреждения высшего образования «Санкт-Петербургский государственный университет» о том, что «студент подлежит отчислению из Санкт-Петербургского университета за представление курсовой или выпускной квалификационной работы, выполненной другим лицом (лицами)».

2.06.2023

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I, Evgeniia Mikheeva (second) year master student, program «Management», state that my master thesis on the topic «The relationship of entrepreneurial skills and motivation to subsequent venture growth aspirations: evidence from GEM data», which is presented to the Master Office to be submitted to the Official Defense Committee for the public defense, does not contain any elements of plagiarism.

All direct borrowings from printed and electronic sources, as well as from master theses, PhD and doctorate theses which were defended earlier, have appropriate references.

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2.06.2023

ABSTRACT

Master Student's Name	Evgeniia I. Mikheeva
Academic Advisor's Name	Karina A. Bogatyreva, Associate Professor
Master Thesis Title	The relationship of entrepreneurial skills and motivation to subsequent venture growth aspirations: evidence from GEM data
Description of the goal, tasks and main results the research	*Goal:* To build and verify a theoretical model of factors affecting entrepreneurial growth aspirations in developed and emerging economies and accordingly suggest recommendations for early stage investors. In addition, to check whether awareness about entrepreneurship with associations about entrepreneurship as a desirable career choice can boost necessary motivation and skills, which are positively correlated with venture growth aspirations. *Tasks:* 1. collect samples of developing and developed countries based on data from GEM report 2020 via IMF classifications; 2. analyze descriptive statistics in these two samples; 3. check in what type of countries entrepreneurial skills and motivation have effect on venture growth aspirations based on regression analysis; 4. analyze connection between awareness about entrepreneurship to skills and motivation; 5. analyze differences in coefficients for developing and developed countries; 6. formulate conclusions about connection between skills, motivation, entrepreneurs awareness and venture growth aspirations. *Results:* Theoretical model for early-stage investors for evaluation entrepreneurs skills and motivation to venture growth aspirations.
Keywords	entrepreneurial skills and motivation, venture growth aspiration, GEM, developing and developed countries, early stage investors

АННОТАЦИЯ

Автор	Михеева Евгения Игоревна
Научный руководитель	Богатырева Карина Александровна, доцент кафедры стратегического и международного менеджмента
Название ВКР	Связь предпринимательских навыков и мотивации с последующими устремлениями к росту: результаты анализа данных GEM
Описание цели, задач и основных результатов исследования	*Цель:* Построить и проверить теоретическую модель факторов, влияющих на стремление к предпринимательскому росту в развитых и развивающихся странах, и, соответственно,

	предложить рекомендации для инвесторов, готовых инвестировать на ранних стадиях развития компании. Кроме того, проверить, может ли осведомленность о предпринимательстве с ассоциациями о предпринимательстве как о желательном выборе карьеры повысить необходимую мотивацию и навыки, которые положительно коррелируют со стремлением к венчурному росту. *Задачи:* 1. собрать выборки развивающихся и развитых стран на основе данных отчета GEM 2020 по классификациям МВФ; 2. проанализировать описательную статистику в этих двух выборках; 3. проверить, в каких странах предпринимательские навыки и мотивация влияют на стремление к венчурному росту на основе регрессионного анализа; 4. проанализировать связь предпринимательской осведомленности с навыками и мотивацией; 5. анализировать различия коэффициентов для развивающихся и развитых стран; 6. сформулировать выводы и построить модель о связи между навыками, мотивацией, осведомленностью предпринимателей и стремлением к венчурному росту. *Результаты:* Теоретическая модель для инвесторов, готовых инвестировать на ранних стадиях развития компании, для оценки влияния навыков и мотивации предпринимателей к будущему потенциальному росту фирмы.
Ключевые слова	предпринимательские навыки и мотивация, стремление к венчурному росту, GEM, развивающиеся и развитые страны, инвесторы на ранних стадиях развития компании

INTRODUCTION

The role of entrepreneurial activity for technological and organizational innovations is well-know from 1934, when Schumpeter firstly mentioned it. In 1997, Kirchhoff underlined the importance of entrepreneurship in terms of work places. In addition, entrepreneurship is a binding constraint on economic development, as it helps the economy to grow and be more stable. However, based on Aldrich's research, more than 50% of new companies failure within 5 years, where entrepreneurial decision-making model and entrepreneur plays key role. At the same time, scholars have reported that entrepreneur characteristics are extremely important for venture success (MacMillan et al, 1985; Baum et al, 2007). Hence, to increase the percent of successful organizations, we need to identify what entrepreneur's skills and motivation can boost venture growth aspirations. With the identification, investors, who are ready to invest in firm's early stages development, can increase conversion of successful investing projects.

Research gap

Entrepreneurship has dynamic and differentiated research field with its own conferences (International Conference on Institutional Entrepreneurship[1], International Conference on Social Entrepreneurship and Innovation[2], V International Scientific and Practical Conference "Entrepreneurship and Innovation in the Markets of the Asia-Pacific Region - 2023"[3]) and journals (Journal of Business Venturing, Entrepreneurship Theory and Practice, Strategic Entrepreneurship Journal, Entrepreneurship and Regional Development, Entrepreneurship Research Journal).

Scholars who firstly started to talk about entrepreneurship in scientific perspective are Schumpeter (1934) and later McClelland (1967). They and their followers analyzed entrepreneurship in psychological point of view, where entrepreneur was an object of analysis. However, since approximately 1980 and till 2005, scholars started to view entrepreneurship through economic and strategy theories (Kirchhoff, 1991). But more recently, psychological aspect returned to analysis, because "entrepreneurship is fundamentally personal" and it cannot be separated from each other (Baum et al, 2007; M. Frese, 2014).

There are many works that analyzed relationship between entrepreneur's personal characteristics and further business success. However, these papers analyzed the problem in

[1]International Conference on Institutional Entrepreneurship: https://clck.ru/34SJMb (accessed 02.05.2023)
[2]International Conference on Social Entrepreneurship and Innovation: https://clck.ru/34SJNU (accessed 02.05.2023)
[3]Entrepreneurship and Innovation in the Markets of the Asia-Pacific Region – 2023: https://clck.ru/33rPh4 (accessed 02.05.2023)

overall or too narrow, for example, for one industry in one country. In the work we divided dataset into two parts to analyze in general differences for two types of countries separately, as it is well-known that developing countries on average have higher GDP growth rates compared to developed countries. So, they should have on average higher growth aspirations and different set of skills or motivation can be more important in such type of countries. In addition, we connected the relationship of skills and motivation to venture growth aspirations with investment perspective, as in company's early development stages entrepreneur's figure is crucial.

Research goal

Thus, research goal is to build and verify a theoretical model of factors affecting entrepreneurial growth aspirations in developed and emerging economies and accordingly suggest recommendations for early stage investors. In addition, we are going to check whether awareness about entrepreneurship with associations about entrepreneurship as a desirable career choice can boost necessary motivation and skills, which are positively correlated with venture growth aspirations. It will help investors and other related stakeholders to decide invest or not in the mechanism.

To reach the goal we formulated **next tasks**:

1. collect samples of developing and developed countries based on data from GEM report 2020 via IMF classifications;
2. analyze descriptive statistics in these two samples;
3. check in what type of countries entrepreneurial skills and motivation have effect on venture growth aspirations based on regression analysis;
4. analyze connection between awareness about entrepreneurship to skills and motivation;
5. analyze differences in coefficients for developing and developed countries;
6. formulate conclusions about connection between skills, motivation, awareness and venture growth aspirations.

Methodology

We divided our analysis into two steps. The first one is concentrated on relationship between entrepreneurs' motivation and skills to growth aspirations. The goal of this analysis is to understand on what aspects investors should pay attention when they choose in what company to invest. Main articles for hypotheses development are C. C. Chen, Greene, Crick, 1998; J.R. Baum,E.A. Locke, 2004; Carreon-Gutierrez, 2019; J.R. Baum and E.A. Locke, 2004; Ho and Wong, 2007; F.Madjdi and B. Zolfaghari, 2022; Cassar, 2007; Morris et all, 2006.

The second analysis is focused on connections between awareness about entrepreneurship to skills and motivation. Here the main goal is to identify whether stakeholders (like venture funds, government, etc.) can influence skills and motivation through awareness to boost growth aspirations. Main articles for hypotheses development are Ching-Hsuan Yeh at el, 2021; Xingjiam Wei at el, 2019; Oosterbeek H et al, 2010.

For the research, we took GEM's Adult Population survey 2020, which key goal is to analyze entrepreneurial behavior across 100+ countries with 20+ year historical data. The data set was divided into two samples: developing and developed countries based on IMF classification.

Expected contribution

The first part of research can be helpful for early stage investors (such as venture funds, business angels, etc.), who look not on company's performance, but look into teams behind projects. So these investors can more clearly identify, on what aspects they should pay attention apart from team's experience. For example, what motivation can boost venture growth aspirations more (social or financial) or what skills (strategic or innovative) are more important.

The second part of research can be helpful for main stakeholders (like venture funds, government, etc.), as it answers a question: "whether awareness about entrepreneurship with association about entrepreneurship as desirable career choice can influence skills and motivation that are positively correlated with growth aspirations". Hence, these stakeholders can decide whether they should invest money into the mechanism to boost venture growth aspirations.

CHAPTER I: THEORETICAL BACKGROUND

Enterprises funding stages

Every company goes through 7 enterprises funding stages: pre-seed, seed, series A funding, series B funding, series C funding, series D funding and IPO.

Pre-seed stage is known as a bootstrapping stage where entrepreneurs only think about their ideas: is it doable and viable, is there enough resources and skills to commercialize the idea, is there are competitors and who they are, how much investments are needed, what business model and how to start to implement the idea? Here main investors are family and friends. There also can be special government funds and business angels, who are willing to invest at this stage, but in very rare cases.

Seed funding stage is when company develop its product and initiate marketing campaigns trying to get first customers. Almost 38% of startups fail[4] because teams run out of money during this period, so the stage is one of the most crucial for firms. Potential investors, who can provide capital at this stage, are venture funds, business angels, special government funds, and crowdfunding platforms.

1. Venture funds – funds that manage capital of investors, who are ready for high-risk investments and willing to invest in startups and small-medium sized firms with strong growth potential. There are three types of funds: private (Target Global, RTP Global, YMY Investements, Altair Capital, I2BF Clobal Ventures), private-government (PBK) and corporate (MTS Structures, My Game Venture Capital, FinSight Ventures, Sistema SmartTech)[5].

2. Business angels – high net-worth investors with business experience, they directly invest in company. Often they not only give money, but also provide their expertise, skills and contacts in industry. Top active business angels in Russia are Alexander Borodich (average fundraising: $25 000 - $150 000), Evgeny Medvednikov (average fundraising: $100 000), Julian Zegelman (average fundraising: $20 000 - $50 000)[6]. Main difference between venture funds and business angels is that business angels give less amount of money with higher return rate compared to venture funds, but they help to overcome difficulties and come to next development stage.

[4] The Top 12 Reasons Startups Fail: https://www.cbinsights.com/research/report/startup-failure-reasons-top/ (accessed 18.03.2023)

[5]Who entered the top most active venture funds in Russia in 2021: https://trends.rbc.ru/trends/innovation/626a37239a794752c3ac4ba4 (accessed 16.03.2023)

[6]Top most active Russian business angels: https://www.mosinnov.ru/news/market/top-samyh-aktivnyh-rossijskih-biznes-angelov.html (accessed 20.03.2023)

3. Special government funds and programs – their main goal is to help entrepreneurs overcome the most difficult first stages. Every fund / program has its own target audience and evaluation criteria, but still they all look into entrepreneurs experience, skills and motivation. In Russia, example of the special government fund can be "My business"[7], which give grants to young and social entrepreneurs from 100 000 to 500 000 rubles.

Another example is FASIE, which has 8 programs, directed to enterprises from series A to series D development stages, and support innovative startups, related to:

H1. Digital technologies;

H2. Medicine and technologies of health saving;

H3. New materials and chemical technologies;

H4. New instruments and intelligent manufacturing technologies;

H5. Biotechnology;

H6. Resource-saving energy.

4. Crowdfunding platforms – online-platforms, where everyone (even unqualified investors) can invest in different type of projects via P2P-, P2B-, B2B-credit or rewards-crowdfunding. In Russia, there are 26 official crowdfunding platforms. Since 2019, based on 259 of the Federal Law "On attracting investments using investment platforms and on amending certain legislative acts of the Russian Federation", unqualified investors can invest in projects from 5 000 to 600 000 rubles, and professional investors – unlimited amounts of money. The most famous crowdfunding platforms are Planeta.ru (2012), Boomstarter (2012), Kroogi (2007)[8]. Hence, crowdfunding allows enterprises to collect necessary funds by attracting small-sized investors who want to get access to the project without share in company. Such investors voluntarily give money or other resources via online-platform, hoping to get money back with some interest rate or get future products free. However, here potential investors only evaluate team's idea, as not in all platforms there is an information about team.

As enterprise is still in developing period and has few customers, investors pay more attention on idea and team itself – their experience, skills and motivation. Hence, our research can be the most useful for some investors, who are going to evaluate teams in seed stage.

Series A funding stage is when firms have working business model, developed product and initial customer base, so here enterprises start to have consistent revenue flow. During the stage main investors are the same as in seed stage and new potential investors are accelerators.

[7] My business in Saint-Petersburg: https://813.ru/podderzhka/finansovaya/granty-/ (accessed 21.03.2023)
[8] What is crowdfunding: an overview of platforms and tips for beginners: https://trends.rbc.ru/trends/innovation/60a4f17d9a79473292bfd627 (accessed 21.03.2023)

Accelerators are organizations that provides young companies access to investments, experts, mentors and other support. In order to participate in the accelerator, entrepreneurs need to apply special form and participate in selection program. According to Dsight, the volume of transactions between accelerators and Russian startups tripled in 2021, to $1 billion. In 2022, 41% of accelerators increased the amount of their investments[9]. There are more than 100 accelerators in Russia, including Skolkovo technopark, Start Hub at Krasny Oktyabr, the HSE Global Startup Initiative.

In series A funding stage, it is significant to show investors business plan with existing and forecasted financial parameters, and show that a team have expertise, skills and motivation to achieve the forecasted indicators. Thus, the research can be relevant for series A investors also, but as here companies already have some results, investors pay less attention to the team, so their experience, skills and motivation is important, but it is secondary thing compared to initial results and forecasts.

Series B funding and all next stages are for growing and mature enterprises, where companies have developed substantial user base with steady revenue stream. During these stages firms need money to expend its business and invest more in marketing, equipment, new employees etc. Entrepreneurs already have some financial results that they can present, so investors evaluate these results rather than teams, that achieved them (Table 1).

	Pre-seed	Seed	Series A	Series B and beyond
Main characteristics	- checking the idea feasibility - market testing - develop marketing and sales for product launch	- product launch - recruiting a team - development of product for market	- working business model - key team in place - further product development - scalable market blueprint	- business scaling - market share increase - proper financial statements
Potential Investors	- startup owners - friends and family	- business angels - friends and family - micro VCs - crowdfunding - government funds	- accelerators - business angels - venture funds - government funds	- late stage VCs - private equity firms - hedge funds - banks - government funds
Investor's main focus	team	team and project's idea	team and firm's preliminary results	firm's financial statements
Firm's valuation	$10 000 – $100 000	$3M – $6M	$10M – $30M	more than $30M
Approx. Fundraising	$50 000	$3M	$15M	more than $30M

Table 1. Main fund raising stage characteristics

Source: made by author based on RBK, Spiridonova E.A. (2023), Dsight

[9] How business accelerators work: a window to the market for a startup: https://trends.rbc.ru/trends/innovation/638736a99a79478ad344edd2 (accessed 2.04.2023)

Thus, in further analysis we concentrate only on seed and series A stages, as only here investors pay attention on team and evaluate its expertise, skills and motivation. The research can help investors to priorities skills and motivation, who have higher influence on venture growth aspirations and increase possibility of investing project's success (Figure 1).

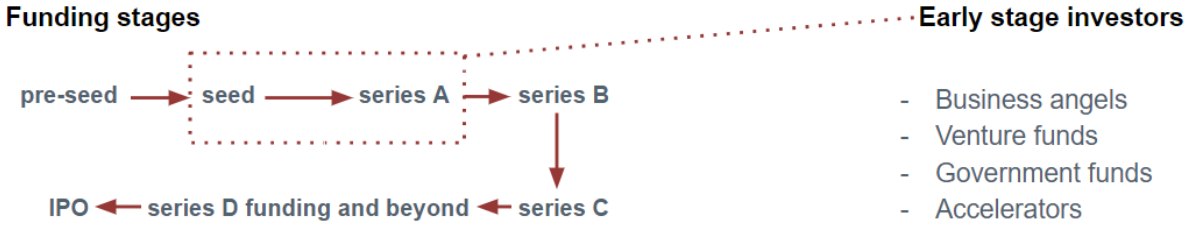


Figure 1. Main potential investors, for whom the research can be relevant

Entrepreneurship and its role in developing and developed countries

Entrepreneurship and its definition

Usually entrepreneurship is defined based on behavioral definition: "creation of new organization" (Gartner, 1989), "independent ownership, active management, or expressed intention to do so" (Stewart and Roth, 2001). Other definitions are based on tasks, for example, as "exploitation of opportunities (Shane and et al, 2000). As Global Entrepreneurship Monitor (GEM) is main data source of the analysis, we will follow with its definition in the research. "Entrepreneurship is any attempt at new business or new venture creation, such as self-employment, a new business organization, or the expansion of an existing business, by an individual, a team of individuals, or an established business".

Entrepreneurship is process of at least three stages (Baron, 2007):

1. Prelaunch (or opportunity identification). The stage is closely connected to entrepreneurs' innovative skills, as here businesspersons need to identify viable business opportunity and how to use the opportunity.

2. Launch (or execution). In this phase, entrepreneurs need to organize necessary resources to start a new enterprise, build development strategy for idea commercialization, and gather team with necessary expertise, so the stage is closely connected to entrepreneurs' strategic and leadership skills.

3. Post launch stage. Here entrepreneurs develop new venture based on entrepreneurial decision-making model till the firm is big enough to change to another decision-making model.

Three major characteristics of the entrepreneurial decision-making model are:

1. Entrepreneurs constantly look for new opportunities to invest and expand business.

2. All power is gathered in one leader – entrepreneur, who usually has a personality that makes it difficult to delegate responsibilities. In addition, entrepreneur relies on his own personal intuition, innovative and strategic skills to set firm's development direction and make decisions.

3. Basic target is firm's development and growth, which based on entrepreneur's internal drive for high achievements.

Therefore, in the decision-making model entrepreneurs play innovator role, face uncertainty and takes all important decisions.

It means that entrepreneurs' traits (skills, motivation and other internal drivers) are crucial at the beginning of company's growth (seed and series A funding stages) and later (series B and other stages) it has less influence on company and entrepreneur's figure becomes not so significant. However, till the moment that company has entrepreneurial decision-making model, entrepreneurs dimensions play crucial role (Table 2).

	Prelaunch	*Launch*	*Postlaunch*
Correlation with fund raising stages	Pre-seed stage	Seed Stage	Stage A and later other stages
Main focus	Identification of viable business opportunity and preliminary plan how to use the idea	Organization of necessary resources to start a new enterprise and gathering a team with necessary expertise	Strategy for future development, business stabilization
Decision-making model	Entrepreneurial	Entrepreneurial	Entrepreneurial at the beginning
Most important entrepreneurs skills	Innovative	Strategic and leadership	

Table 2. Main characteristics of entrepreneurship stages

Source: made by author based on Baron, 2007, M. Frese, 2014

Entrepreneurship role in developing and developed countries

Entrepreneurship plays crucial role in any country, because it boosts economy growth and it is a "main vehicle of economic development" (Anokhin et al., 2008). The more entrepreneurs in a country, the faster the country will develop and stronger its economy will be (Dejardin, 2000; Beck et al., 2005). Main points through which entrepreneurship helps a country to grow are employment, innovation, productivity and other welfare effects (Schumpeter, 1934; Landes, 1998; C. Mirjam, 2007; Acs et al., 2008).

Firm's employment impact can be measured by the number of new work places that organization creates (firm size) or by employees remuneration (wage levels, health insurance, and other benefits), that can be measured based on job satisfaction level.

Firm's innovative output also can be measured by quantitatively and qualitatively. In quantity, firm's innovation impact can be evaluated as expenditures on R&D. Even though expenditures are company's input for outputs that are patents, new products and technologies, but as outputs are difficult to compare between different companies and industries, expenditures are widely used for quantitative analysis. The quality of firm's innovative output is measured by patent citations and innovation importance. All this indicators are closely connected to entrepreneurs' innovative skills, especially in firm's early development stage.

Firm's productivity impact can be measured by its contribution in country's GDP. This parameter is connected to entrepreneurs' strategic skills, as vision is ability to project mental image of what firms want to achieve in the near and long-term future (Bass and Stogdill, 1990). It reflects the values and outcomes (production) that firm must get to achieve long-term goals.

Thus, entrepreneurship is important for any country due to its impact on economy development. However, in developing and developed countries there is a different degree of importance of entrepreneurship due to mainly 2 factors (Figure 2): opportunity and financial resources (Lingelbach, D. C., 2005; Ho and Wong, 2007).

Figure 2. Main differences between developing and developed countries

Source: made by author based on Lingelbach, D. C., 2005; Ho and Wong, 2007

Opportunity. Entrepreneurs in developing countries face different market conditions compared to developed countries. The differences are rooted in lack of stable mature markets and the consistency that such markets offer. In addition, developing countries on average have higher GDP growth rates compared to developed ones: based on World Bank data in 2021 average GDP growth rate for developing countries is 7%, while for developed – 5.2%. The difference in growth rates leads to more opportunities on average for entrepreneurs in emerging economies. It means that in developing countries firms mostly deal with needs and opportunities, which lead to a hypothesis, that for entrepreneurs the most important skill is to see the idea and commercialize it (innovative skills) in such type of markets.

Financial resources. In developing countries average GDP per capita is 6 074$[10], while in developed countries it is 48 225$[11]. It means that in developing countries, entrepreneurship

[10] Based on The World Bank data: https://data.worldbank.org/income-level/middle-income (accessed 12.04.2023)
[11] Based on World Bank data: https://data.worldbank.org/income-level/high-income?view=chart (accessed 12.04.2023)

is even more needed to create equilibrium in the economy and here financial motivation is on the first place for entrepreneurs.

At the same time, in developed countries, there are government programs that support social entrepreneurship and give more opportunities to owners with such motivation, which can increase the potential of social motivation as a driver of future aspirations. Example of programs oriented to social entrepreneurs: Echoing Green-Social Entrepreneurship Fellowship and Leadership Development Programs, Draper Richards Kaplan Foundation-Grants, RSF Social Finance.

Factors influencing venture growth aspirations

There are quite many articles that analyzed a correlations between entrepreneurs' personality dimensions and effects on business performance (Table 3).

Constructs	Correlation to business performance	Scholars
Self-efficacy	r = 0.25	Rauch and Frese, 2007 Carreon-Gutierrez, 2019
Innovativeness	r = 0.27	Rauch and Frese, 2007 Ho and Wong, 2007 McCormick and Fernhaber, 2017
Strategic skills	r = 0.15 r = 0.20 r = 0.17 r = 0.25	Boyd 1991 Schwenk & Shrader 1993 Miller & Cardinal 1994 J.R. Baum and E.A. Locke, 2004
Achievement motivation	r = 0.20	Rauch and Frese, 2007
Proactive personality	r = 0.17	Rauch and Frese, 2007
Risk propensity	r = 0.10	Stewart and Roth, 2001 Rauch and Frese, 2007
Stress tolerance	r = 0.20	Rauch and Frese, 2007
Autonomy	r = 0.16	
Locus of control	r = 0.13	
Conscientiousness	r = 0.19	H. Zhao et al. 2010
Neuroticism	r = -0.18	
Extraversion	r = 0.09	
Human capital	r = 0.10 r = 0.21 r = 0.17	Unger et al. 2011 Crook et al. 2011 Martin et al. 2013
Social capital	r = 0.21	Stam et al. 2014
Business planning	r = 0.10	Brinckmann et al. 2010
Entrepreneurial orientation	r = 0.24 r = 0.26	Rauch et al. 2009 Rosenbusch et al. 2013

Table 3. Correlation between entrepreneurial dimensions and business performance

Source: Made by author based on Frese, M. (2014), Rauch and Frese (2007), and others

Based on Table 3, the most important factors for successful business performance are achievement motivation, proactive personality, innovativeness, self-efficacy, human capital and strategic skills. Mixing information about the most important factors with limitation of our database, we identified three main skills that can be drivers for venture growth aspirations in

our model: self-efficacy, strategic and innovative skills. In addition, based on results from previous chapter results, we concentrated on two types of motivation: financial and social.

1. The relationship of entrepreneurs' skills to venture growth aspirations

Self-efficacy is defined as entrepreneurs' self-confidence in their skills and experience (Bandura, 1997). It reflects not only experience and skills, but also indicates individuals' feelings about their capabilities. Some researchers believe that people who are confident in their entrepreneurial skills have more chances for their ventures growth (C. C. Chen, Greene, & Crick, 1998; J.R. Baum and E.A. Locke, 2004, Carreon-Gutierrez, 2019).

H1: Entrepreneurial self-efficacy is positively associated with growth aspirations in developing and developed countries and it has equal effect on growth aspirations in developing and developed countries

Strategic skills (or vision) are about entrepreneurs' ability to project mental image of what they what to achieve in the near and long-term future (Bass and Stogdill, 1990). It reflects the values and outcomes that firm must get to achieve long-term goals. Thus, the greater the communication venture growth content of entrepreneur's vision, the greater subsequent venture growth (J.R. Baum and E.A. Locke, 2004).

H2.1: Strategic skills are positively associated with growth aspirations in developing and developed countries

In developed countries, there are less opportunities for entrepreneurs (Ho and Wong, 2007), so innovative skills are not as crucial as vision that is about long-term planning and how efficiently use resource to satisfy customers' needs in better and less costly way than competitors.

H2.2: Strategic skills have more effect on venture growth aspirations in developed countries than in developing countries

Innovative skills are related to person's ability to create and commercialize new product or service. Entrepreneurs put different levels of emphasis on innovativeness, and in many cases, innovation is a driver of international growth (Autio et al. 2000). Based on McCormick and Fernhaber article "Are growth expectation being met? Implications for internalization of micro-sized ventures" (2017) innovations have moderate effect on growth expectations, so we formulate hypotheses as:

H3.1: Innovative skills are positively associated with growth aspirations in developing and developed countries

In addition, as it was mentioned in previous part, in developing countries on average there are more opportunities for entrepreneurship (Ho and Wong, 2007). Thus, if there are more opportunities, for entrepreneurs the most important skill is to see the idea – potential customer problem that they can solve – and commercialization of the idea, meaning that for entrepreneurs in developing countries innovative skills are more important than in developed countries. Thus, in further analysis we expect that innovative skills will have different effect on venture growth aspirations in different types of countries

H3.2: Innovative skills have less effect on venture growth aspirations in developed countries than in developing countries

2. The relationship of entrepreneurs' motivation to venture growth aspirations

In the research we concentrated on two main motivations: social and financial (pull motives).

Social motivation is about social entrepreneurship, when individuals start a business to make world different, better than existing one, and pursue other non-commercial goals. Today social entrepreneurship is a mainstream in many countries, especially in developed ones, and this type of enterprises may have more growth opportunities due to government support. In 2022 F.Madjdi and Zolfaghari published article "Creating Social Ventures: How Social Motivations and Goals Drive Venture Idea Judgments", based on its results founders with social goal-motivations gain more opportunities nowadays and have more confidence in future opportunities relative to other entrepreneurs.

H4.1: Social motivation is positively associated with growth aspirations in developing and developed countries

At the same time, social motivation is more widespread in developed countries, and here government suggest more opportunities for entrepreneurs with such motivation, so we expect, that:

H4.2: Social motivation has more effect on venture growth aspirations in developed countries than in developing countries

Financial motivation is pull motive, when people start a business to become wealthier, gain higher status and recognition in society. Strong evidence for the positive relationship between financial motives and growth ambitions were presented by Cassar (2007) and Morris et all (2006).

H5.1: Financial motivation is positively associated with growth aspirations in developing and developed countries

As it was mentioned previously, in developed countries there is trend for social entrepreneurship, meaning, that entrepreneurs with such motivation have more opportunities and higher possibility for venture growth aspirations. At the same time, in developing countries average GDP per capita is 6 074$[12], while in developed countries average GDP per capita is 48 225$. The fact can mean that for developing countries financial motivation can have more influence on venture growth aspirations than in developed one.

H5.2: Financial motivation has less effect on venture growth aspirations in developed countries than in developing countries

3. The relationship of entrepreneurs' awareness to skills

In 2021 Chinese researchers in article "Investigating the relationships between entrepreneurial education and self-efficacy and performance in the context of internet entrepreneurship" proved that entrepreneurial education has positive impact on entrepreneurial self-efficacy, so we formulated hypothesis in the following way:

H6: Awareness about entrepreneurship is positively associated with self-efficacy in developing and developed countries

We expect that there would be no difference in developing and developed countries, as here and further researchers do not distinguish influence of awareness to skills and motivation, depending economy level.

In 2019 Xingjiam Wei at el found connection between entrepreneurship education and entrepreneurs skills, so we also added this connection to our analyses.

H7: Awareness about entrepreneurship is positively associated with innovative skills in developing and developed countries

H8: Awareness about entrepreneurship is positively associated with strategic skills in developing and developed countries

In 2010 Oosterbeek analyzed impact of entrepreneurship education programs on students entrepreneurship skills and motivation. Authors believed that increased level of entrepreneurship can be reached through education, one of which element was about association of entrepreneurship as one of the best career choices, so we assumed that:

H9: Awareness about entrepreneurship is positively associated with social motivation in developing and developed countries

[12] Based on The World Bank data

H10: Awareness about entrepreneurship is positively associated with financial motivation in developing and developed countries

Summary of hypotheses

Thus, we have two steps of analysis. The first step of analysis focused on relationship between entrepreneurs' motivation and skills to growth aspirations. The goal of this analysis is to find out on what skills and motivation venture funds should pay attention when they choose in what company to invest. Based on theoretical concept analysis we developed next hypotheses for the first part of analysis:

	Hypothesis regarding skills	**Theories**
1	Entrepreneurial self-efficacy is positively associated with growth aspirations and it has equal effect on growth aspirations in developing and developed countries	C. C. Chen, Greene, Crick, 1998 J.R. Baum,E.A. Locke, 2004 Carreon-Gutierrez, 2019
2.1	Strategic skills are positively associated with growth aspirations in developing and developed countries	J.R. Baum and E.A. Locke, 2004 Ho and Wong, 2007
2.2	Strategic skills have more effect on venture growth aspirations in developed countries than in developing countries	
3.1	Innovative skills are positively associated with growth aspirations in developing and developed countries	McCormick and Fernhaber, 2017 Ho and Wong, 2007
3.2	Innovative skills have less effect on venture growth aspirations in developed countries than in developing countries	
	Hypotheses regarding motivation	
4.1	Social motivation is positively associated with growth aspirations in developing and developed countries	F.Madjdi and B. Zolfaghari, 2022
4.2	Social motivation has more effect on venture growth aspirations in developed countries than in developing countries	
5.1	Financial motivation is positively associated with growth aspirations in developing and developed countries	Cassar, 2007 Morris et all, 2006
5.2	Financial motivation has less effect on venture growth aspirations in developed countries than in developing countries	

Table 4. Hypothesis for the first analysis step

The second step of our analysis is focused on connection between awareness about entrepreneurship to skills and motivation. The main goal is to identify whether main stakeholders (like venture funds, government, etc.) can influence skills and motivation that are positively correlated with growth aspirations. Here we developed next hypothesis:

	Hypotheses regarding skills	Theories
6	Awareness about entrepreneurship is positively associated with self-efficacy in developing and developed countries	Ching-Hsuan Yeh at el, 2021
7	Awareness about entrepreneurship is positively associated with innovative skill in developing and developed countries	Xingjiam Wei at el, 2019
8	Awareness about entrepreneurship is positively associated with strategic skill in developing and developed countries	
	Hypothesis regarding motivation	
9	Awareness about entrepreneurship is positively associated with social motivation in developing and developed countries	Oosterbeek H et al, 2010
10	Awareness about entrepreneurship is positively associated with financial motivation in developing and developed countries	

Table 5. Hypothesis for the second analysis step

To sum up all analysis, we build model of our research, which is presented below.

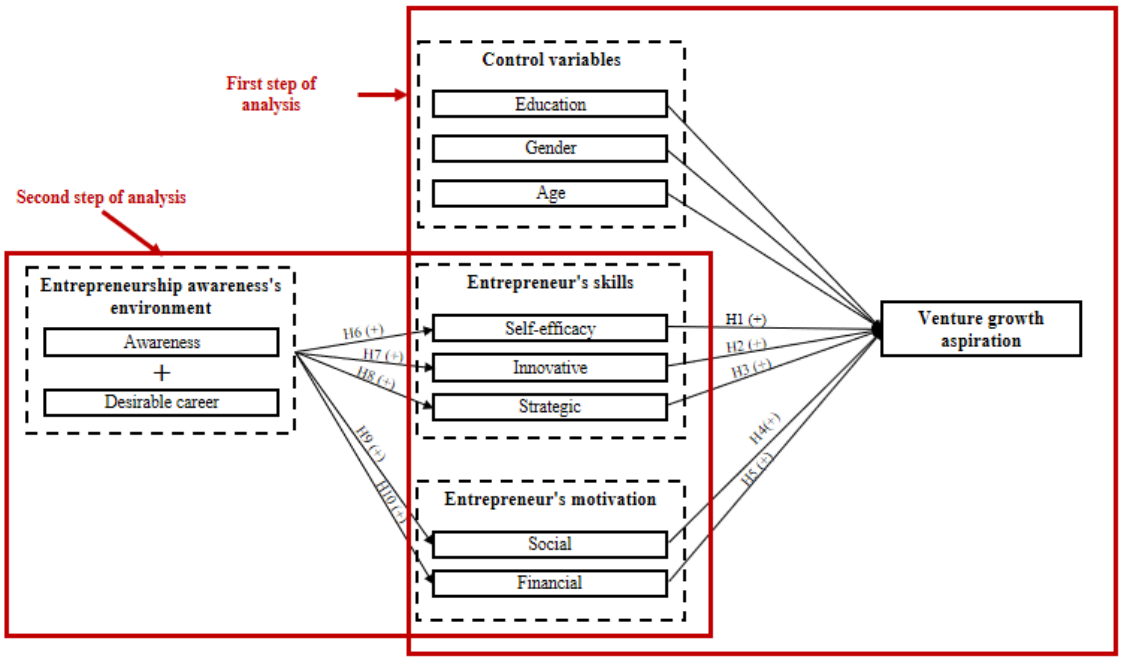


Figure 3. Research model for developing and developed countries

Source: by author

As shown in figure 3, the first analysis check direct influence of the skills and motivation on venture growth aspirations, and second step – indirect effect of Awareness about entrepreneurship as a desirable career choice on venture growth aspirations.

CHAPTER II: METHODOLOGY

Data and sample

Main data source is GEM's Adult Population Survey (APS), 2020. GEM is international research organization, which key focus is the research of entrepreneurial behavior across 100+ countries with 20+ years data. It significantly influence entrepreneurship research field by gathering cross-country data about factors influencing entrepreneurship and different types of entrepreneurial activity. GEM's database is regularly referred as a source of information in many high-quality academic publications. In addition, international organizations like UN, OECD, or World Bank use GEM as a trusted information source about entrepreneurial activity across different economies. Every year GEM conducts APS to evaluate entrepreneurial activity level, it gathers information on broad range of entrepreneurship-related topics, including individuals' characteristics, intentions, skills, motivation or attitudes towards entrepreneurial activity.

For our analysis, we divided APS data into two samples: developing and developed countries based on IMF classification. IMF classification defines economy's level based on level of per capita income, degree of industrialization, export base, and a financial sector that's integrated into the global financial system.

Measures

First step of analysis: skills and motivation to venture growth aspirations

To check stated above hypotheses in the first part of analysis we identified dependent variable *"TEA: Expected job growth (persons) in 5 years" as venture growth aspiration*. TEA means "Total early-stage entrepreneurial activity" and represents nascent entrepreneurs or owner-managers of new business. The independent variable represents judgment of the person about his or her company's future growth aspirations. The evaluation can be subjective and it is limitation of the research, however, as GEM is anonymous and does not anyhow influence company performance, we assume that the answer is true picture and evaluation is correct.

As for independent variables, we identified three groups, which were discussed in the theoretical part: control variables, skills and motivation.

Control variables include gender, age, and education, these variables are commonly used in entrepreneurship analysis. In GEM data it is:

- ***Gender*** – "A. What is your gender?" (GEM indicator), binary variable, with 1 – Male, 2 – Female.

- ***Age*** – "B. What is your current age (in years)?" (GEM indicator).
- ***Education*** – "GEM harmonized education attainment" (GEM indicator), where 0 – no education, 1 – some secondary, 2 – secondary degree, 3 – post secondary, 4 – graduate experience

Skill variables were chosen based on theoretical concepts and limitations of chosen dataset and include:

- ***Entrepreneurial self-efficacy*** – "Qi3. You personally have the knowledge, skill and experience required to start a new business" (GEM indicator), where 0 – strongly disagree and 5 – strongly agree.
- ***Strategic skills*** – "Qi14. Every decision you make is part of your long-term career plan" (GEM indicator), where 0 – strongly disagree and 5 – strongly agree.
- ***Innovative skills*** – "Qi13. Other people think you are highly innovative" (GEM indicator), where 0 – strongly disagree and 5 – strongly agree.

Motivation was also chosen based on theoretical analysis and limitations of chosen dataset include social and financial, which were discussed previously:

- ***Social motivation*** – "Q1K3. Please tell me the extent to which the following statements reflect the reasons you are trying to start a business. To make a difference in the world" (GEM indicator).
- ***Financial motivation*** – "Q1K4. Please tell me the extent to which the following statements reflect the reasons you are trying to start a business. To build great wealth or a very high income" (GEM indicator).

In all dependent variable-questions entrepreneurs answered by themselves, so what they think about their self-efficacy, strategic, innovative skills and financial / social motivation. It limits our research in some way, as values are not absolutely objective, but same with independent variable, we assume that the answers present the true picture, as represents are not anyhow influenced by their answers.

All variables and its GEM indicators are presented below in Table 6:

Variable	**GEM indicator**	**Scale**
Venture growth aspirations	TEA: Expected job growth (persons) in 5 years	from -9 to 20
Gender	A. What is your gender?	1 = Male 2 = Female
Age	B. What is your current age (in years)?	18-64
Education	GEM harmonized education attainment	0 = None 1 = Some secondary 2 = secondary degree 3 = post secondary 4 = grad exp
Self-efficacy	Qi3. You personally have the knowledge, skill and experience required to start a new business.	1 = Strongly disagree 2 = Somewhat disagree 3 = Neither agree or disagree 4 = Somewhat agree 5 = Strongly agree
Innovative skills	Qi13. Other people think you are highly innovative.	1 = Strongly disagree 2 = Somewhat disagree 3 = Neither agree or disagree 4 = Somewhat agree 5 = Strongly agree
Strategic skills	Qi14. Every decision you make is part of your long-term career plan.	1 = Strongly disagree 2 = Somewhat disagree 3 = Neither agree or disagree 4 = Somewhat agree 5 = Strongly agree
Social motivation	Q1K3. Please tell me the extent to which the following statements reflect the reasons you are trying to start a business. To make a difference in the world.	1 = Strongly disagree 2 = Somewhat disagree 3 = Neither agree or disagree 4 = Somewhat agree 5 = Strongly agree
Financial motivation	Q1K4. Please tell me the extent to which the following statements reflect the reasons you are trying to start a business. To build great wealth or a very high income.	1 = Strongly disagree 2 = Somewhat disagree 3 = Neither agree or disagree 4 = Somewhat agree 5 = Strongly agree

Table 6. Variables for first step of analysis

Second step of analysis: awareness to skills and motivation

To check stated hypotheses in the second part we identified as dependent variables chosen skills and motivations. “Awareness about entrepreneurship as desirable career choice”, which was calculated manually as average of two other variables from GEM data, we took as independent variable (Table 7).

Variable	GEM indicator	Scale
Awareness about entrepreneurship	Qi8. In my country, you will often see stories in the public media and/or internet about successful new businesses.	1 = Strongly disagree 2 = Somewhat disagree 3 = Neither agree or disagree 4 = Somewhat agree 5 = Strongly agree
Entrepreneurships as desirable career	Qi6. In my country, most people consider starting a new business a desirable career choice.	1 = Strongly disagree 2 = Somewhat disagree 3 = Neither agree or disagree 4 = Somewhat agree 5 = Strongly agree
Awareness about entrepreneurship as desirable career choice	Calculated average variable based on Qi8 and Qi6 values	1 = Strongly disagree 2 = Somewhat disagree 3 = Neither agree or disagree 4 = Somewhat agree 5 = Strongly agree

Table 7. Additional variable for second analysis

In GEM there are also two scales "-2 = Refused" and "-1 = Don't know". We excluded observations with these values from the research.

Data analysis

To test the hypothesis stated above, we firstly classified developed and developing countries based on IMF classification. The main reason, why we did it, is to explore whether there is a difference between connection of entrepreneurs' motivation and skills to venture growth aspirations because different conditions in economies.

Then we analyzed descriptive statistics. Within this part, we firstly excluded outliers based on boxplot of variable "TEA: Expected job growth (persons) in 5 years". Secondly, made normality tests to identify with what type of data we work: parametric or nonparametric. Thirdly, we analyzed descriptive statistics of dependent variable.

After descriptive statistics, we made first step of analysis – direct effect of skills and motivation to venture growth aspiration. Here we firstly checked connection between skills to venture growth aspirations by multilinear model, then we excluded skills that were not significant and added to the model motivations one by one to check their significance.

After the first step of analysis, we conduct the second step – indirect effect of awareness about entrepreneurship to venture growth aspirations. Before the analysis, we calculated a new variable "awareness about entrepreneurship as desirable career choice" which is average of two variables "awareness about entrepreneurship" (values are from 1 to 5) and "entrepreneurship

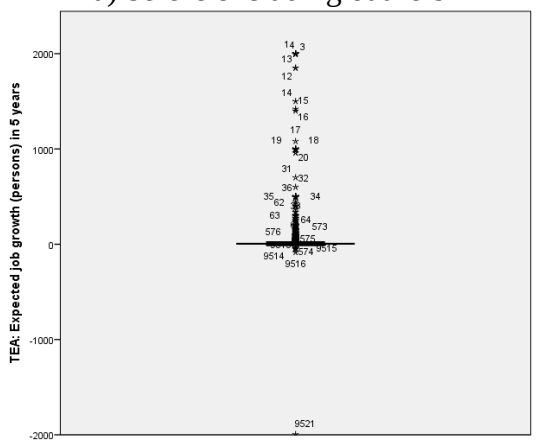
as a desirable career choice" (values are from 1 to 5). After, we built simple liners regression models with skills and motivation, which were significant for venture growth aspirations. And finally, we calculated maximum average indirect effect of awareness on venture growth aspirations within 5 years.

1. Descriptive statistics

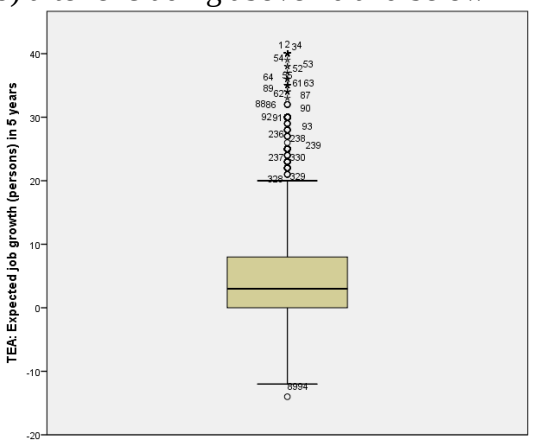
1.1. Outliers

Outliers exclusion process based on variable "TEA: Expected job growth (persons) in 5 years" for developing countries:

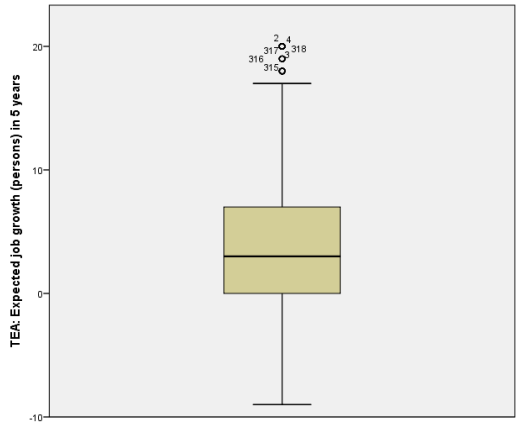
a) before excluding outliers



b) after excluding above 40 and below -14



c) after excluding values above 20 and below -10



d) after excluding target outliers and extreme values for every country

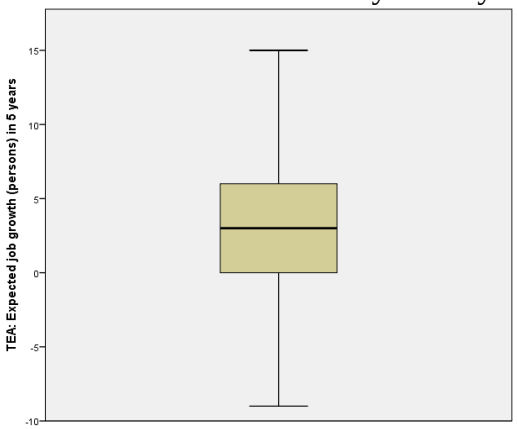
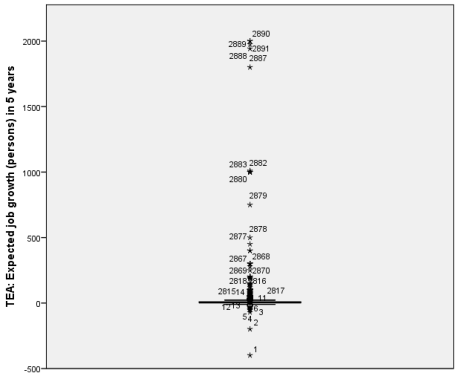


Figure 4. Outliers excluding process for developing countries

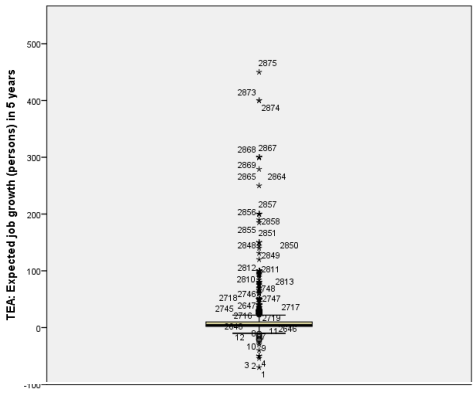
As shown in figure 4-a developing countries data definitely contains outliers, therefore we decided to exclude them at this stage in order to perform later analysis. We excluded 5420 cases, the process is shown in 4-b and 4-c and a new boxplot looked the following way: figure 4-d. Total number of observation after excluding outliers and missing values — 1799.

Outliers exclusion process based on variable “TEA: Expected job growth (persons) in 5 years” for developed countries:

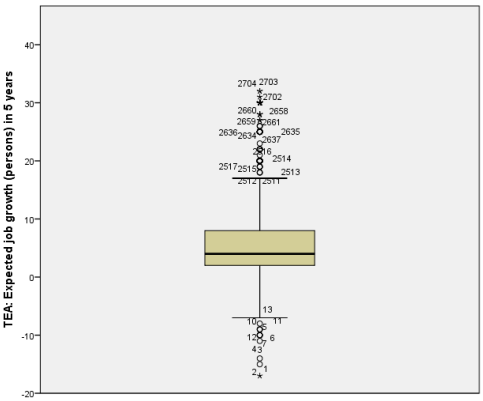
a) before excluding outliers



b) after excluding above 500 and below -200



c) after excluding values above 35 and below -20



d) after excluding target outliers and extreme values

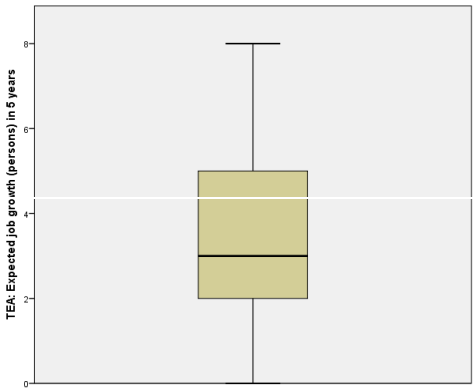


Figure 5. Outliers excluding process for developed countries

Same as previously, data definitely contained outliers (figure 5-a), so we excluded them at this stage in order to perform further analysis, process is shown in 5-b and 5-c and a new boxplot looked the following way: figure 5-d. Total number of observation after excluding outliers — 1945.

1.2. Normality test

Further, we analyzed distribution for developing and developed countries to find with what type of data we work and what analysis methods it is better to use.

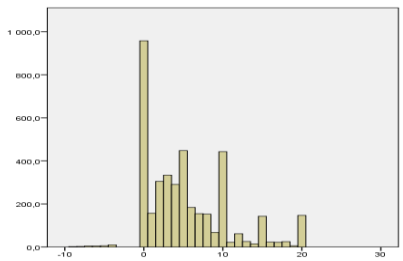
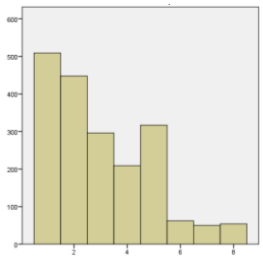
Developing countries				Developed countries			
							
Kolmogorov-Smirnov		Shapiro-Wilk		Kolmogorov-Smirnov		Shapiro-Wilk	
Statistic	Sig.	Statistic	Sig.	Statistic	Sig.	Statistic	Sig.
0.152	0.000	0.893	0.000	0.201	0.000	0.885	0.000

Table 8. Histogram and normality test for variable "TEA: Expected job growth (persons) in 5 years"

According to the test of normality expected job growth distribution is not normal for both developing and developed countries. Histogram shows the same (Table 8). It means that we should pay more attention during further analysis on non-parametric tests. However, due to central theory (as we have enough observations), we still can proceed with regression analysis.

1.3. Descriptive statistics

After outliers exclusion and normality test we analyzed dependent variable's descriptive statistics for developing and developed countries.

	Developing countries		**Developed countries**	
	Statistics	Std. Error	Statistics	Std. Error
Mean	4.32	0.084	3.02	0.042
95% Confidence interval	min. 4.07 max. 4.57		min. 2.93 max. 3.10	
5% Trimmed Mean	4.88		2.88	
Median	4.00		3.00	
Variance	28.339		3.43	
Std. Deviation	5.323		1.852	
Minimum	-9		-3	
Maximum	20		8	
Range	29		11	
Skewness	0.997	0.039	0.771	0.055
Kurtosis	0.597	0.077	-0.164	0.111

Table 9. Descriptive statistics of variable "TEA: Expected job growth (persons) in 5 years" for developing and developed countries

According to Table 9, in 2020 in developing countries entrepreneurs forecast an average increase in job places of four people. The difference between mean and trimmed mean cannot be considered high, meaning that the majority of extremes are excluded from the dataset. Median and mean are not distant in terms of value (the difference is less than 1 person). However, standard deviation is quite high (5.323), which indicates that in further analysis we will have results with wide intervals. Skewness is 0.997, meaning that the majority of values are bunched at low values with the tail pointing to high values.

Regarding developed countries, enterprises forecast an average increase in job places of three people, which is 30% less than in developing countries. It is expected as developing countries have on average higher economic growth rates then developed countries, which leads to higher possibilities for growth. The difference between mean and trimmed mean is very small (only 0.14), meaning that the majority of extremes are excluded from the dataset. Median and mean are not distant in terms of value. Standard deviation is in the middle level (1.852), which indicates that in further analysis we will not have results with wide intervals. Skewness is 0.771, meaning that the majority of values are bunched at low values with the tail pointing to high values.

2. Skills and motivation to venture growth aspirations

The first step of analysis is concentrated on finding on what skills and motivation early stage investors should pay attention during team evaluation when they choose in what company to invest in developing and developed countries.

List of developing countries after excluding outliers and missing values: Colombia, Kazakhstan, Panama, Qatar, Taiwan, Russia, Angola, Uruguay. Total number of observations after excluding missing values from all variables — 1799.

List of developed countries after missing values exclusion: Austria, Canada, Croatia, Cyprus, Germany, Greece, Israel, Italy, Latvia, Luxemburg, Netherlands, Norway, Poland, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, United Kingdom, United States. Total number of observations after excluding missing values from all variables — 1945.

2.1. Skills to venture growth aspirations

Firstly, we checked relationship between skills (self-efficacy, strategic, and innovative) to venture growth aspirations. Stated hypotheses are presented below.

	Hypothesis regarding skills	**Theories**
1	Entrepreneurial self-efficacy is positively associated with growth	C. C. Chen, Greene, Crick,

	aspirations and it has equal effect on growth aspirations in developing and developed countries	1998 J.R. Baum,E.A. Locke, 2004 Carreon-Gutierrez, 2019
2.1	Strategic skills are positively associated with growth aspirations in developing and developed countries	J.R. Baum and E.A. Locke, 2004
2.2	Strategic skills have more effect on venture growth aspirations in developed countries than in developing countries	
3.1	Innovative skills are positively associated with growth aspirations in developing and developed countries	McCormick and Fernhaber, 2017
3.2	Innovative skills have less effect on venture growth aspirations in developed countries than in developing countries	

Table 9. Hypotheses about skills to venture growth aspirations

To test stated above hypotheses 1-3 we applied multilinear regression analysis separately for developing and developed countries:

*(1) GA = X1*GEN + X2*AGE + X3*EDU + X4*EFFIC + X5*VISION + X6*INNOV,*

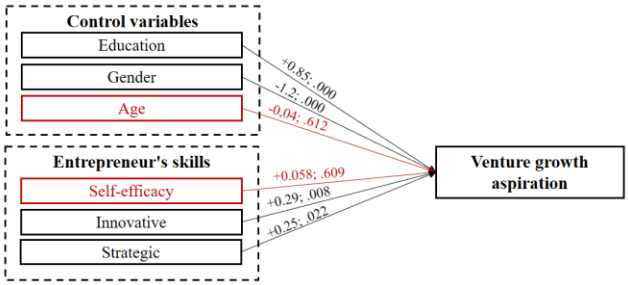
where[13]*:*

- *GA – venture growth aspiration which is presented as "expected job growth (persons) in 5 years*
- *GEN – respondent gender (1 – Male, 2 – Female)*
- *AGE – respondent age (from 18 to 64)*
- *EDU – GEM harmonized education attainment (from 0 – "none" to 4 – "graduation experience")*
- *EFFIC – entrepreneurs' effectiveness (from 1 – "strongly disagree" to 5 – "strongly agree")*
- *VISION – entrepreneurs' strategic skill (from 1 – "strongly disagree" to 5 – "strongly agree")*
- *INNOV – entrepreneurs' innovative skill (from 1 – "strongly disagree" to 5 – "strongly agree")*

Results are presented in models 1.1 and 1.2 below:

Developing countries:

GA	=	4.15	- 1.20*GEN	-0.04*AGE	+0.85*EDU	+0.058*EFFIC	+0.25*VISION	+0.29*INNOV
	sig.	.000	.000	.612	.000	0.609	0.022	0.008



Model 1.1: control variables and skills to venture growth (developing countries)

Source: made by author based on analysis results

According to Model 1.1, all skills are significant, except entrepreneurial self-efficacy. However, innovative skills have slightly stronger influence on venture growth aspirations in

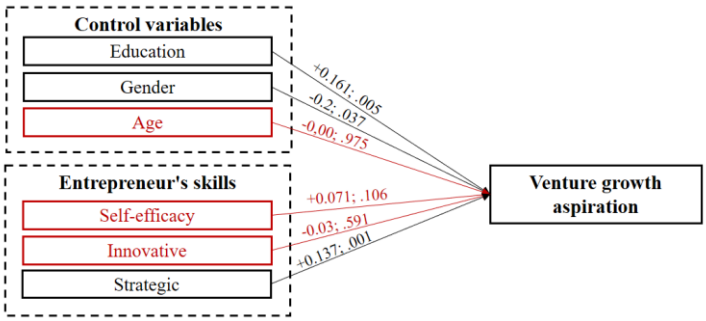
[13] In more details every variable is described in Table 6 "Variables for first step of analysis"

developing countries than strategic ones. It proves what we discussed in theoretical part, that developing countries on average have higher GDP growth rates, which leads to more opportunities for entrepreneurs in emerging markets, which makes innovative skills (to see the idea and quickly commercialize it) to be more important than strategic ones.

It also means that during team evaluation for fund raising investors (venture funds, business angels, etc.) should give higher priority to teams with high innovative skills, if everything else being equal.

Developed countries:

GA	=	2.04	- 0.2*GEN	0.00*AGE	+0.161*EDU	+0.071*EFFIC	+0.137*VISION	-0.03*INNOV
	sig.	.000	.037	.975	.005	.106	.001	.591



Model 1.2: control variables and skills to venture growth (developed countries)

Source: made by author based on analysis results

As shown in Model 1.2, in developed countries only strategic skills are important for future venture growth aspirations, entrepreneurial self-efficacy and innovative – do not have significant influence on growth. Explanation of insignificant innovative skills can be that markets in developed countries are saturated, so for entrepreneurs there are little amount of new opportunities, and the most important for them are long-term planning and how efficiently use resources to satisfy customers' needs in better and less costly way than competitors.

Hence, in developed countries, investors should pay more attention on teams with strong strategic skills, if everything else being equal.

To check hypotheses 2.2 and 3.2, we transform coefficients in models 1.1 and 1.2 into standardized ones. Results are presented below:

Developing countries								
GA	=	4.15	- 0.11*GEN	-0.08*AGE	+0.15*EDU	+0.012*EFFIC	+0.06*VISION	+0.07*INNOV
	sig.	.000	.000	.612	.000	.609	.022	.008
Developed countries								
GA	=	2.04	- 0.06*GEN	0.00*AGE	+0.08*EDU	+0.04*EFFIC	+0.09*VISION	-0.02*INNOV
	sig.	.000	.037	.975	.005	.106	.001	.591

Model 1.3: aggregated control variables and skills to venture growth aspirations

(in standardized coefficients)

In developing countries, strategic skills' standardized coefficient is 0.06, while in developed – 0.09. At the same time in developing countries innovative skills have standardized coefficient of 0.07, and in developed – the skill is not significant. That all proves that in developed countries investors like venture funds or business angels, who invest in the seed or seed A stages should pay more attention on teams with strong strategic skills, while in developing priority should be given to teams with strong innovative skills, if everything else being equal.

2.2. Motivations to venture growth aspirations

Next, we added to the model two motivations one by one to check stated hypotheses below.

	Hypotheses regarding motivation	
4.1	Social motivation is positively associated with growth aspirations in developing and developed countries	F.Madjdi and B. Zolfaghari, 2022
4.2	Social motivation has more effect on venture growth aspirations in developed countries than in developing countries	
5.1	Financial motivation is positively associated with growth aspirations in developing and developed countries	Cassar, 2007 Morris et all, 2006
5.2	Financial motivation has less effect on venture growth aspirations in developed countries than in developing countries	

Table 10. Hypotheses about motivation to growth aspirations connection

Firstly, we made regression analysis for developing countries in the order: social, financial motivation. We excluded self-efficacy in the step, as the skill does not have significant influence on venture growth aspirations.

Multilinear regression models for developing countries:

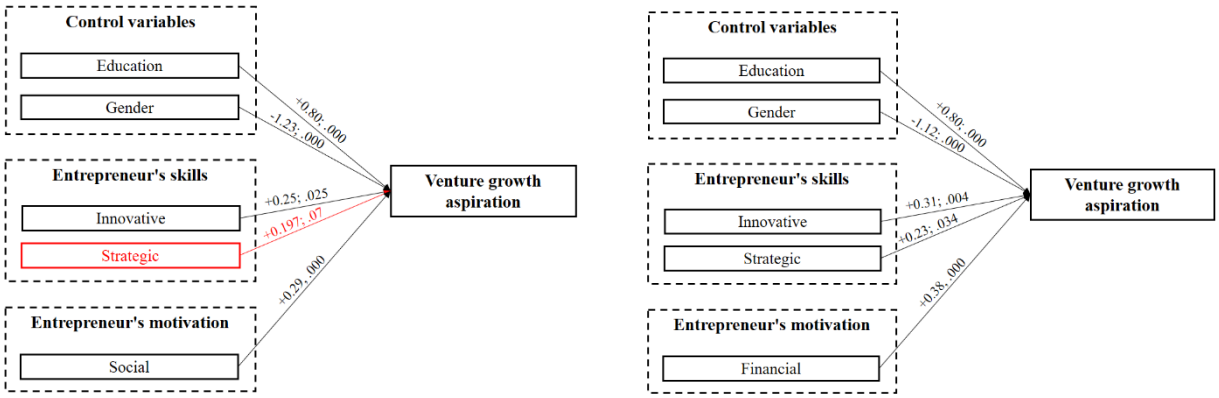
$$(2.1)\ GA = X1*GEN + X2*EDU + X3*VISION + X4*INNOV + X5*SOCIAL$$

$$(3.1)\ GA = X1*GEN + X2*EDU + X3*VISION + X4*INNOV + X5*FINANCIAL$$

where:

- *SOCIAL – social entrepreneur's motive (from 1 – "strongly disagree" to 5 – "strongly agree")*
- *FINANC – financial entrepreneur's motive (from 1 – "strongly disagree" to 5 – "strongly agree")*

Developing countries:



GA	=	3.97	- 1.23*GEN	+0.80*EDU	+0.25*INNOV	+0.197*VISION	**+0.29*SOCIAL**
	sig.	.000	.000	.000	.025	.070	**.000**

Model 2.1: control variables, skills and social motivation to venture growth

GA	=	2.78	- 1.12*GEN	+0.80*EDU	+0.31*INNOV	+0.23*VISION	**+0.38*FINANC**
	sig.	.000	.000	.000	.004	.034	**.000**

Model 3.1: control variables, skills and financial motivation to venture growth

According to model 2.1 results, social motivation is significant driver of venture growth aspirations. However, if entrepreneurs state this motivation as a key, their strategic skills becomes not so important for future growth and coefficient of innovative skills drop from 0.29 to 0.25, meaning that social motivation pull over significance to itself.

Based on model 3.1, financial motivation is significant and it even has more effect on venture growth than social motivation, as coefficients are 0.38 and 0.29 respectively. This can be explained by lower economic level – average GDP per capita for middle-income countries is around $6 thousand, while in developed – more than $40 thousand, the difference can drive entrepreneurs in emerging markets and more orient them to future growth. In addition, with financial motivation, innovative skills' coefficient increase from 0.29 to 0.31, and strategic ones decrease from 0.25 to 0.23, it additionally proves the fact that in developing countries, because of emerging market conditions, innovative skills become a priority.

Therefore, in developing countries, early stage investors should priorities teams with financial motivation (0.38) and here firstly investors need to evaluate teams' innovative skills (0.31) and then strategic ones (0.23). On the second place, investors can consider teams with social motivation (0.29), who want to make world better, but in this case only innovative skills should be evaluated (0.25).

After developing countries analysis, we moved to regression analysis for developed countries in the same order: social, then financial motivation. Here we excluded self-efficacy and innovative skills, as based on previous results it does not affect venture growth aspirations.

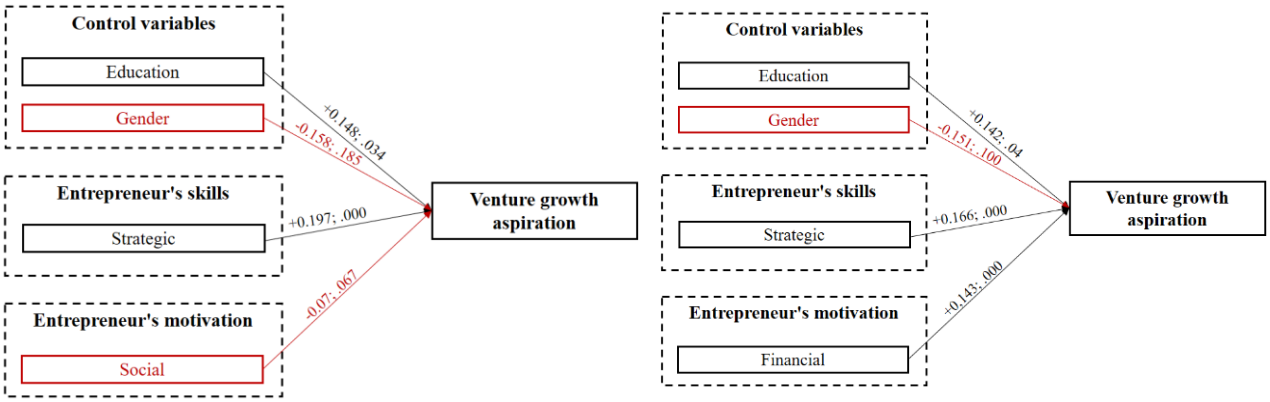
Multilinear regression models for developed countries:

*(2.2) GA = X1*GEN + X2*EDU + X3*VISION + X4*SOCIAL*

*(3.2) GA = X1*GEN + X2*EDU + X3*VISION + X4*FINANCIAL*

where:

- *SOCIAL – social entrepreneur's motive (from 1 – "strongly disagree" to 5 – "strongly agree")*
- *FINANC – financial entrepreneur's motive (from 1 – "strongly disagree" to 5 – "strongly agree")*



GA	=	2.40	- 0.158*GEN	+0.148*EDU	+0.197*VISION	**-.0.07*SOCIAL**
	sig.	.000	.185	.034	.000	**.067**

Model 2.2: control variables, skills and social motivation to venture growth

GA	=	1.838	- 0.151*GEN	+0.142*EDU	+0.166*VISION	**+0.143*FINANC**
	sig.	.000	.200	.04	.000	**.000**

Model 3.2: control variables, skills and financial motivation to venture growth

Based on Model 2.2 results, social motivation is not significant driver of venture growth aspirations. However, if entrepreneurs state this motivation as a key, their strategic skills' coefficient becomes a little higher (from 0.137 to 0.197). The result rejects our hypothesis that in developed countries social motivation is more significant, because there are more programs that helps entrepreneurs to grow.

Based on Model 3.2 results, financial motivation is significant and has coefficient of 0.143. This proves the fact financial motive to be wealthier is stronger driver for entrepreneurs.

Need to mention, that when motivation was added in the models 2.2-3.2, gender (control variable) becomes not significant, meaning that motivation is more important factor and it pulls over influence on venture growth aspirations. However, in developing countries there were not such results, gender was still important factor, it means that in developed countries there are more opportunities for women, that they can take it and use it. In addition, entrepreneurship infrastructure is better developed, so women's enterprises do not lack in growth aspirations.

To check hypotheses 4.2 and 5.2, we transform coefficients in previous models into standardized ones. Results are presented below:

GA	=	3.97	- 0.12*GEN	+0.14*EDU	+0.05*INNOV	+0.04*VISION	**+0.09*SOCIAL**
	sig.	.000	.000	.000	0.025	0.070	**0.000**
GA	=	2.8	- 1.11*GEN	+0.14*EDU	+0.07*INNOV	+0.05*VISION	**+0.1*FINANC**
	sig.	.000	.000	.000	0.004	0.034	**0.000**
				developing countries			
GA	=	2.40	- 0.04*GEN	+0.07*EDU	+0.13*VISION	**-.0.06*SOCIAL**	
	sig.	.000	.185	.034	0.000	**0.067**	
GA	=	1.838	- 0.04*GEN	+0.06*EDU	+0.11*VISION	**+0.11*FINANC**	
	sig.	.000	.200	.04	0.000	**0.000**	
.							
				developed countries			

Model 4: aggregated control variables and skills to venture growth (in standardized coefficients)

According model 4 results, social motivation does not have more effect on venture growth aspirations in developed countries than in developing, as in developed countries on average the motivation is not significant. Regarding financial motivation, in standardized coefficients, its impact on venture growth aspirations is approximately the same for developing (0.10) and developed (0.11) countries. The results means that in both type of countries teams with financial motivation have more potential on average, so early stage investors should firstly pay attention to them, if everything else being equal.

3. Awareness about entrepreneurship to skills and motivation

The second step of our analysis is concentrated on connections between awareness to skills and motivation. The main goal is to find whether main stakeholders (like venture funds, government, etc.) can influence skills and motivation that are positively correlated with growth aspirations and by this increase venture growth aspirations.

Before the analysis, we calculated a new variable “Awareness about entrepreneurship as desirable career choice” which is average of two variables “Awareness about entrepreneurship” (values are from 1 to 5) and “Entrepreneurship as a desirable career choice” (values are from 1 to 5) and formulated 6 hypotheses that are presented below:

	Hypotheses regarding skills	**Theories**
6	Awareness about entrepreneurship is positively associated with self-efficacy in developing and developed countries	Ching-Hsuan Yeh at el, 2021

7	Awareness about entrepreneurship is positively associated with innovative skill in developing and developed countries	Xingjiam Wei at el, 2019
8	Awareness about entrepreneurship is positively associated with strategic skill in developing and developed countries	
	Hypothesis regarding motivation	
9	Awareness about entrepreneurship is positively associated with social motivation in developing and developed countries	Oosterbeek H et al, 2010
10	Awareness about entrepreneurship is positively associated with financial motivation in developing and developed countries	

Table 11. All hypotheses about Awareness about entrepreneurship to skills and motivation connection

Firstly, we made simple linear regression models for developing countries in the order: innovative skills, strategic skills, social and financial motivation. We excluded self-efficacy in the step, as in previous analysis it was proved that they do not have significant influence on venture growth aspirations.

Linear regression models for developing countries:

*(6) INNOV = X1*A; (7) VISION = X1*A; (8) SOCIAL = X1*A; (9) FINANCIAL = X1*A*

where:

- *INNOV – entrepreneurs' innovative skill (from 1 to 5)*
- *VISION – entrepreneurs' strategic skill (from 1 to 5)*
- *SOCIAL – social entrepreneur's motive (from 1 to 5)*
- *FINANC – financial entrepreneur's motive (from 1 to 5)*
- *A – awareness about entrepreneurship calculated variable based on Qi8, Qi6 values in GEM (from 1 to 5)*

INNOV	=	3.87	+0.05*A	VISION	=	3.59	+0.18*A
	sig	.000	.068		sig	.000	.000
	Model 5.1				Model 6.1		
SOCIAL	=	2.54	+0.17*A	FINANC	=	2.68	+0.22*A
	sig	.000	.000		sig	.000	.000
	Model 7.1				Model 8.1		

Models 5-8: Awareness about entrepreneurship to skills and motivation connection

Based on Models 5.1-8.1 results, awareness about entrepreneurship as desirable career choice has influence on strategic skills, social and financial motivations, but not on innovative skills. It means that we have two scenarios: how awareness about entrepreneurship influence venture growth aspiration if entrepreneurs stated, firstly, financial and, secondly, social motivation.

In the first step of analysis we got, that if entrepreneurs state that financial motivation as the most important factor, then we have model 3.1. In this model, awareness can influence only financial motivation (0.22) and strategic skills (0.18).

GA	=	2.78	- 1.12*GEN	-0.03*AGE	+0.80*EDU	+0.31*INNOV	+0.23*VISION	**+0.38*FINANC**
	sig.	.000	.000	.010	.000	0.004	0.034	**0.000**

Model 3.1: control variables, skills and financial motivation to venture growth

Maximum value of awareness about entrepreneurship in our model is 5. It means that maximally such awareness on average may increase financial motivation by 1.1[14] and strategic skills by 0.9[15], which overall will increase venture growth aspirations by 0.63[16]. The result means that if in a country maximum level of awareness about entrepreneurship as a desirable career choice, it may increase venture growth aspirations by less than 1 person in 5 years.

If entrepreneurs state social as their motivation, then we will have model 2.1.

GA	=	3.97	- 1.23*GEN	-0.03*AGE	+0.80*EDU	+0.25*INNOV	+0.197*VISION	**+0.29*SOCIAL**
	sig.	.000	.000	.001	.000	0.025	0.070	**0.000**

Model 2.1: control variables, skills and social motivation to venture growth

In this model, awareness about entrepreneurship can influence only social motivation (0.17). It means that maximally such awareness on average may increase venture growth aspirations by 0.25[17]. The result is even lower than for financial motivation. Based on it we can say, that in developing countries the mechanism is not so effective, it can be used for increasing venture growth aspirations, but not as one of the main mechanisms.

After developing countries analysis, we moved to analysis for developed countries in the same order: strategic skills and financial motivation. Here we excluded self-efficacy, innovative skills, necessity and social motivation as based on previous results it does not significantly affect venture growth aspirations.

Linear regression models for developed countries:

*(6.2) VISION = X1*A; (8.2) FINANCIAL = X1*A*

where:

- *VISION – entrepreneurs' strategic skill (from 1 to 5)*
- *FINANC – financial entrepreneur's motive (from 1 to 5)*
- *A – awareness about entrepreneurship calculated variable based on Qi8, Qi6 values in GEM (from 1 to 5)*

VISION	=	3.72	+0.13*A
	sig	.000	.007

Model 6.2

FINANC	=	3.019	+0.12*A
	sig	.000	.007

Model 8.2

[14] Entrepreneurship awareness maximum effect on financial motivation = 5*0.22 = 1.1
[15] Entrepreneurship awareness maximum effect on strategic skills = 5*0.18 = 0.9
[16] Entrepreneurship awareness maximum indirect effect on venture growth aspirations =1.1*0.38+0.9*0.23 = 0.63
[17] Entrepreneurship awareness maximum indirect effect on venture growth aspirations = 5*0.17*0.29 = 0.25

Models 6.2 and 8.2: Awareness about entrepreneurship to skills and motivation connection

Based on models 6.2 and 8.2 results, awareness about entrepreneurship as desirable career choice has influence on strategic skills (0.13) and financial motivation (0.12). In the first step of analysis we got, that if entrepreneurs state financial motivation, then we have model 3.2:

G	=	1.838	- 0.151*GEN	+0.142*EDU	+0.166*VISION	**+0.143*FINANC**
A	sig.	.000	.200	.04	0.000	**0.000**

Model 3.2: control variables, skills and financial motivation to venture growth

The same as in developing countries, maximum value of awareness about entrepreneurship is 5. It means that maximally such awareness on average may increase financial motivation by 0.6[18] and strategic skills by 0.65[19], which overall may increase venture growth aspirations by not more than 0.19[20]. The result means that if in a country will be maximum level of awareness about entrepreneurship as a desirable career choice, it will not increase venture growth aspirations by even 1 person in 5 years.

Hence, for both developing and developed countries, awareness of entrepreneurship as a desirable career choice is not highly effective instrument to potentially increase venture growth aspirations. It can be in portfolio of instruments for government, venture funds and other interested stakeholders, but just as additional tool.

Results

Thus, we made two steps of analysis. The first step focused on relationship between entrepreneurs' motivation and skills to growth aspirations. The goal was to find out on what skills and motivation venture funds should pay attention when they choose in what company to invest. Based on analysis we got next results:

	Hypothesis regarding skills	
1	Entrepreneurial self-efficacy is positively associated with growth aspirations and it has equal effect on growth aspirations in developing and developed countries	Not supported
2.1	Strategic skills are positively associated with growth aspirations in developing and developed countries	Accepted
2.2	Strategic skills have more effect on venture growth aspirations in developed countries than in developing countries	Accepted

[18] Entrepreneurship awareness maximum effect on financial motivation = 5*0.12= 0.6
[19] Entrepreneurship awareness maximum effect on strategic skills = 5*0.13 = 0.65
[20] Entrepreneurship awareness maximum indirect effect on venture growth = 0.6*0.143+0.65*0.166 = 0.19

3.1	Innovative skills are positively associated with growth aspirations in developing and developed countries	Partially accepted
3.2	Innovative skills have less effect on venture growth aspirations in developed countries than in developing countries	Accepted
	Hypotheses regarding motivation	
4.1	Social motivation is positively associated with growth aspirations in developing and developed countries	Partially accepted
4.2	Social motivation has more effect on venture growth aspirations in developed countries than in developing countries	Rejected
5.1	Financial motivation is positively associated with growth aspirations in developing and developed countries	Accepted
5.2	Financial motivation has less effect on venture growth aspirations in developed countries than in developing countries	Accepted

Table 10. Hypotheses results for the first analysis step

Main conclusions based on the analysis:

1. In developing countries, seed stage investors should priorities teams with financial motivation (0.38) and here firstly investors need to evaluate teams' innovative skills (0.31) and then strategic ones (0.23). On the second place, investors can consider teams with social motivation (0.29), who want to make world better, but in this case only innovative skills should be evaluated (0.25).

2. In developed countries, seed stage investors should priorities teams with financial motivation (0.143) and here investors need to evaluate only teams' strategic skills (0.166).

The second step of our analysis was focused on connections between awareness about entrepreneurship to skills and motivation. The main goal was to find whether main stakeholders (like venture funds, government, etc.) can influence skills and motivation that are positively correlated with growth aspirations and through this increase possible company's results. Here we got next results:

	Hypotheses regarding skills	
6	Awareness about entrepreneurship is positively associated with self-efficacy in developing and developed countries	Did not check as self-efficacy does not significantly influence venture growth aspirations
7	Awareness about entrepreneurship is positively associated with innovative skill in developing and developed countries	Not supported
8	Awareness about entrepreneurship is positively associated with strategic skill in developing and developed countries	Accepted
	Hypothesis regarding motivation	

9	Awareness about entrepreneurship is positively associated with social motivation in developing and developed countries	Partially accepted
10	Awareness about entrepreneurship is positively associated with financial motivation in developing and developed countries	Accepted

Table 11. Hypotheses results for the second analysis step

Main conclusion based on the analysis is that awareness of entrepreneurship as a desirable career choice is not highly effective instrument to potentially increase venture growth aspirations. It can be in portfolio of instruments for government, venture funds and other interested stakeholders, but just as additional tool.

To sum up all results, we build two models of our research, which are presented below.

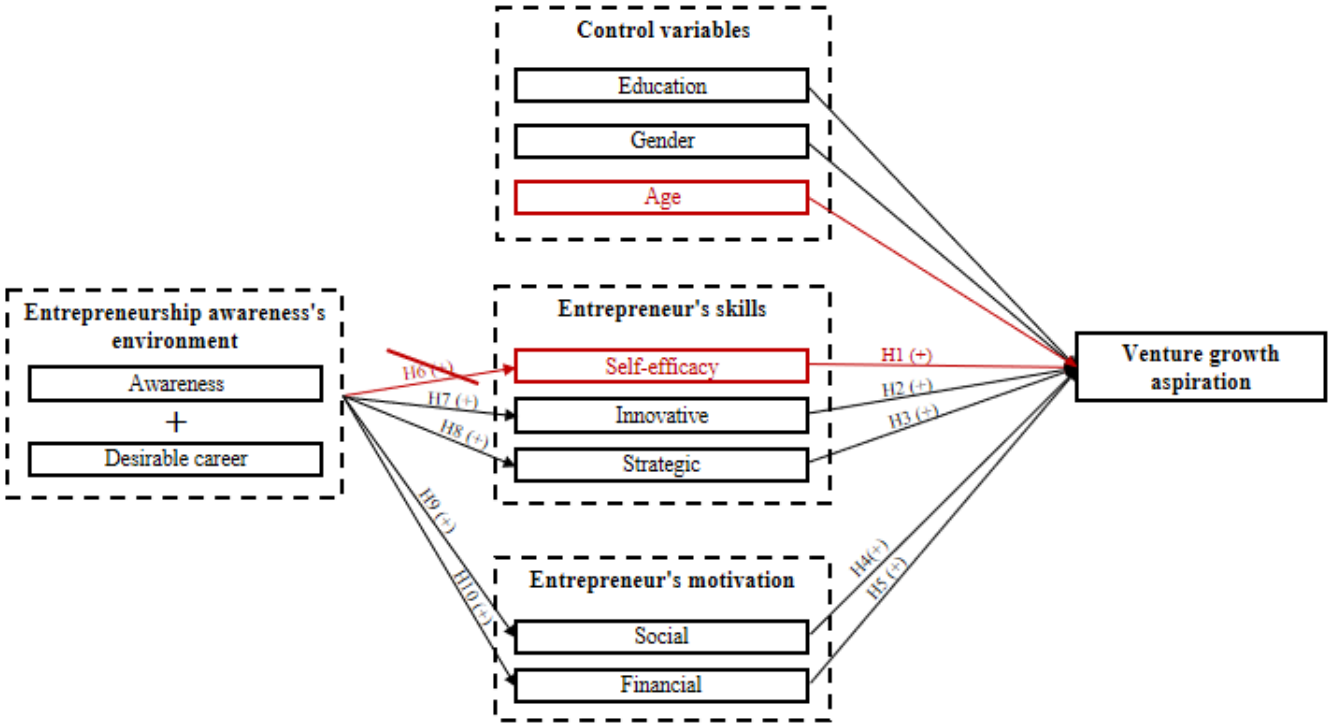


Figure 4. Research model results for developing countries[21]

Source: made by author

[21] Red lines – there is no significant influence

Crossed red lines – as factor does not have influence on venture growth aspirations, we do not check the hypothesis

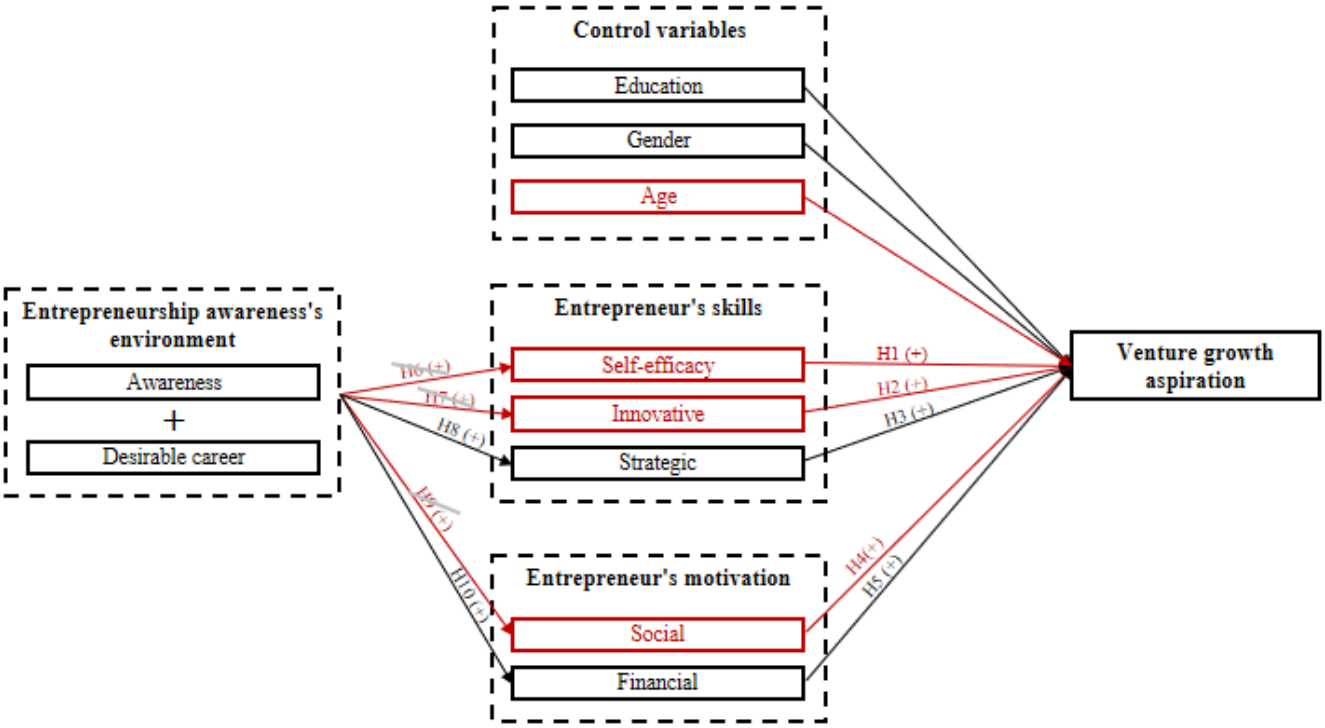


Figure 5. Research model results for developed countries

Source: made by author

CHAPTER III: DISCUSSION OF THE RESULTS

Entrepreneurial skills to venture growth aspirations

Self-efficacy is not significant in both, developing and developed, countries, meaning that our hypothesis is not supported and for venture growth aspirations it is not so important how entrepreneurs self-confident and how they evaluate their own skills.

Strategic skills are the most significant in developed countries, as here for entrepreneurs the most important things are long-term planning and how efficiently use resources to satisfy customers' needs in better and less costly way than competitors. In developing countries accent goes to opportunities and its quick commercialization, so strategic skills go to the second place.

Innovative skills have slightly stronger influence on venture growth aspirations in developing countries than strategic ones. It proves what we discussed in theoretical part, that developing countries on average have higher GDP growth rates, which leads to more opportunities for entrepreneurs in emerging markets, which makes innovative skills (to see the idea and quickly commercialize it) be more important than strategic ones. However, for developing countries, innovative skills are not significant. It can happen because markets in developed countries are saturated, so for entrepreneurs there are little amount of new opportunities.

Therefore, during team evaluation early-stage investors (venture funds, business angels, etc.) should give first priority to teams with high innovative skills in developing countries and strategic skills – in developed, if everything else being equal.

Entrepreneurial motivation to venture growth aspirations

Social motivation is only significant in developing countries, in developed – insignificant. In theoretical part we assumed that in developed countries social motivation should be higher as here are more opportunities for growth for such investors (like additional grands for development, mentoring programs etc.) The negative results in our research can be explained by personality traits of such entrepreneurs and their goals – in developing countries such entrepreneurs are still growth-oriented and may have commercial interest even though they stated social motive (as with social aspect they can get higher funding and opportunities). However, in developed countries such entrepreneurs can be altruist, who do not consider further organization growth.

Financial motivation is significant for both types of countries and it even has more effect on venture growth than social motivation. In developing countries the result can be

explained by lower economic level – average GDP per capita for middle-income countries is about $6 thousand, while in developed – more than $40 thousand, the difference can drive entrepreneurs in emerging markets and more orient them to future growth to get higher income and living standard.

Therefore, in developing countries, early stage investors should priorities teams with financial motivation (0.38) and here firstly investors need to evaluate teams' innovative skills (0.31) and then strategic ones (0.23). On the second place, investors can consider teams with social motivation (0.29), who want to make world better, but in this case only innovative skills should be evaluated (0.25). For developed countries, only entrepreneurs with financial motivation are growth-oriented with only significant strategic skills.

We also need to mention, that when motivation was added in the models for developed countries, gender (control variable) becomes not significant, meaning that motivation is more important factor and it pulls over influence on venture growth aspirations. However, in developing countries there were not such results, gender was still important factor, it means that in developed countries there are more opportunities for women, that they can take and use, and entrepreneurship infrastructure is better developed, so their enterprises do not lack in growth aspirations.

Awareness about entrepreneurship to skills and motivation

For both developing and developed countries awareness of entrepreneurship as a desirable career choice is not highly effective instrument to potentially increase venture growth aspirations, in any calculation scenarios its effect is less than 1 employee per 5 years. Hence, it can be in portfolio of instruments for government, venture funds and other interested stakeholders, but just as additional tool.

Model and managerial implications

Based on results, we built evaluation model for investors[22].

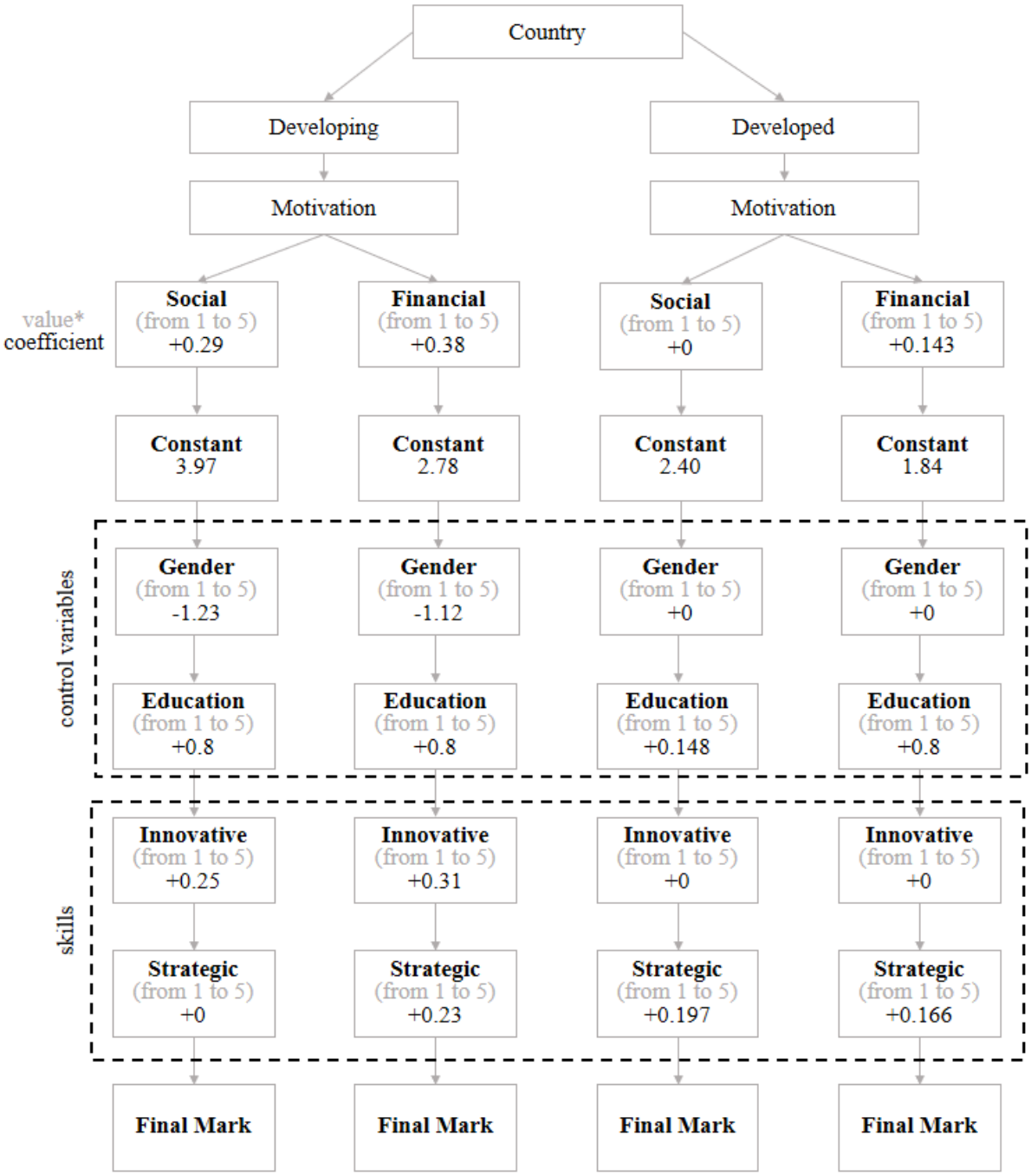


Figure 6. Final model of entrepreneurs' evaluation for early-stage investors

Logic of model's calculation:

1. *Economy level identification.* It can be easily checked in UNCTAD site: https://hbs.unctad.org/classifications/

[22] Age and self-efficacy were completely excluded, as they are insignificant in all models

2. *Motivation identification.* Early stage investors (venture funds, business angels, special government funds) can expertly evaluate motivation and further variables, for instance, when entrepreneurs present their idea, jury can ask suggestive questions. Or experts can make internal questionnaire for entrepreneurs' to answer questions related to the variable and then aggregate these answers. For example, to evaluate motivation, entrepreneurs can be asked:

- What is the final goal of your enterprise?
- What type of motivation do you have? – Social / Financial
- Please tell the extent to which the following motivation reflect the reasons you are trying to start a business – from 1 to 5, where 0 – strongly disagree and 5 – strongly agree.

3. Constant adding: average growth aspirations for entrepreneur. The value is already calculated and standard for all entrepreneurs within one type of economy and motivation. For example, for entrepreneurs with social motivation in developing countries average growth aspiration is 3.97, meaning that within 5 years such entrepreneurs are expected to have near 3-4 new work places in their enterprise (not including other factors influence).

4. Control variables accounting: gender and education. Gender is binary variable, where 1 – Male, 2 – Female, however, the parameter should be evaluated only in developing countries, where differences between male and female entrepreneurs were identified. Education is ordinal variable, where 0 – no education, 1 – some secondary, 2 – secondary degree, 3 – post secondary, 4 – graduate experience.

5. Skills accounting: strategic and innovative. As with motivation, there are two ways to evaluate these parameters: (1) jury can evaluate during team presentation; (2) ask entrepreneurs in the special questionnaire, for example:

- Every decision you make is part of your long-term career plan, where 0 – strongly disagree (very low) and 5 – strongly agree (very high).
- Other people think you are highly innovative, where 0 – strongly disagree (very low) and 5 – strongly agree (very high).

However, if entrepreneurs will be asked these questions, there is highly chance, that they will answer 5 to both questions, so it is better to formulate several different questions and aggregate respondents' answers in average mark for innovative and strategic skills separately.

6. Final mark. The parameter is a sum of variables multiplied by their coefficients:

$$\mathrm{VGA}^{23} = \mathrm{a1} * \mathrm{Motivation} + \mathrm{const} + \mathrm{a2} * \mathrm{Gender} + \mathrm{a3} * \mathrm{Education} + \mathrm{a4} * \mathrm{Innovative} + \mathrm{a5} * \mathrm{Strategic}$$

[23] Venture Growth Aspirations (VGA)

Example of model calculation for venture fund, that is located in Russia:

Type of economy	Developing		
	Team 1	Team 2	Team 3
Motivation	Social (4) 4*0.29	Financial (5) 5*0.38	Social (5) 5*0.29
Constant	3.97	2.78	3.97
Gender	Female (2) 2*(-1.23)	Male (1) 1*(-1.12)	Male (1) 1*(-1.23)
Education	Graduate experience (4) 4*0.8	Graduate experience (4) 4*0.8	Graduate experience (4) 4*0.8
Innovative skills	Middle (3) 3*0.25	High (4) 4*0.31	High (4) 3*0.25
Strategic skills	High (4) 4*0	Middle (3) 3*0.23	Middle (3) 3*0
Final mark (VGA)	**6.62**	**8.69**	**8.14**

Table 12. Example for model calculations

VGA (Team 1) = 4*0.29+3.97-2*1.23+4*0.8+3*0.25+4*0 = 6.62

VGA (Team 2) = 5*0.38+2.78-1.12+4*0.8+4*0.31+3*0.23+3*0 = 8.69

VGA (Team 3) = 5*0.29+3.97-1.23+4*0.8+3*0.25+3*0 = 8.14

Based on final mark, the second team is the best choice. Of course, in the first place experts evaluate business plan and team's previous experience, however, the model can be used as additional tool for teams when it is difficult to make final conclusion based on business plan and expertise.

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