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INCLUSIVE GROWTH BY MEANS OF SUSTAINABLE SUPPLY CHAINS: A CASE STUDY OF THE DABBAWALAS OF MUMBAI, INDIA.

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ABSTRACT

As India emerges to become a major player in the global economy, it is essential to understand some of the unique business models that have emerged interacting with its cultural economy and found a place in its developmental trajectory. Of these, the dabbawalas of Mumbai is worth a special mention. The dabbawalas constitute a lunchbox delivery and return system that delivers hot lunches from homes and restaurants to people at work in India. Based on primary research and more recent literature, this paper provides updated perspectives on the dabbawala business with special focus on the sustainability of their business model. It discusses the dabbawala system performance along multiple aspects of sustainability. The basis of competitive advantage of the dabbawala business model is presented an emergent phenomenon from the cultural logic of the ecosystem.

INTRODUCTION

The dabbawalas ("lunchbox deliverymen") originated in the late colonial times as individual, independent, entrepreneurs. They were organized as a cooperative in late 19th century. Indian employees working for the British did not like the food being served in the workplace and this was their first trigger (Date, 2006). They started with the objective of giving a livelihood for migrant workers coming mostly from the villages surrounding Mumbai; from the very beginning they practiced community referral based staff recruitment (Pathak, 2010).

Currently, they are a distributed, flat, self-governed, network organizational structure, with around 5000 members/employees. In the three-layered structure, all employees are paid equally. The organizational culture is characterized by discipleship and not followership. This culture is known to nurture individualized customer care, collaborative planning, and implementation. They take pride in strong teamwork and strict time-management (North & Kumta, 2014).

Straightforward application of the mainstream theories of value and competence are found to be inadequate to explain their accomplishments. This case study of the dabbawalas aims to identify the bases of their competitive advantage from perspectives ranging from their historical roots, continued community spirit, sustainability orientation, and the various nuanced conditions in the business

environment.

1 LITERATURE REVIEW

1.1 The Advantage of Business Networks

Cooperative networks and other grassroots level movements that can be fitted broadly into the banner of *the third way* of development have come under extensive critical scrutiny (Giddens, 2013; Leftwich, 1993). Especially in small rural communities, cooperative networks formed by the community members have caused what may be described as a *business renaissance*. The developmental vision of such networks is an emergent phenomenon formed out of a negotiated process involving various interest groups. This process is embedded in the milieu provided by the social capital binding these interest groups together.

There exists a wide variety of networking arrangements (Gnyawali & Madhavan, 2001). The difference among these arrangements can be explained in terms of four characteristics; coverage, form, mode, and motive. Coverage refers to the extensiveness of an alliance in terms of functional competencies and geographical coverage. The form ranges from non-equity agreements to the opposite where alliance members buy equity stakes in other alliance members. The third characteristic, the mode, describes the intrinsic vs extrinsic nature of the relationship among the members. Motives refer to the underlying reason for the creation of an alliance.

In typical capitalistic settings, the centralized power of financial capital creates formal business structures that are fundamentally exploitative in nature (Honig, 1998). Participation for inclusive development, on the other hand, depends on the existence of the *relationship gravity* of the society, the social capital. It is not that cooperative business structures are impossible in low social capital settings. Actually, in capitalistic societies, it is known that cooperative networks are formed by capitalistic interests as a *criticism dampening adaptancy platform*. The conciliatory aura of the networked model may help the exploitative businesses to hide their unsustainable practices. In the case of dabbawalas, their network is more a reflection of the internal dynamics of a society than the expressionism of an approval seeking corporate house. A lot of what we call sustainability is still non-inclusive (Hahn & Figge, 2011): the realization of inclusive sustainability without external pressures is rate to be found and the dabbawala model epitomizes it.

1.2 The Dabba Delivery System

Dabbawalas, each serving around 30 customers per day, works under the leadership of a 'mukadam' (supervisor). They have time-tested and perfected their hub-n-spoke concept. Each spoke is managed autonomously by a team of 20-25. Over the time, this 'hospitality network' evolved into a flawless system with six sigma performance rating (Isher, & Bhal, 2005; Karthi et al., 2015).

Dabbas are collected from homes or from the dabba makers to a sorting place, where the lunch boxes are sorted into groups based on the destination. The grouped boxes are then carried to the coaches of trains. Destination station dabbawalas pick these groups and deliver them. Later in the day, the empty lunchboxes are carried back to their places of origin. A combination of colors and symbols help dabbawalas to identify pertinent delivery instructions. The lunch boxes have the following identifiers on them: Dabba origination point; abbreviated location name; name of the railway station nearest to the origination point, color-coded; name of the railway station nearest to the destination point, color-coded; and, identifiers for destination building and floor, for the benefit of the destination dabbawala handling the lunchbox (Ghodake, 2016). Their system creates the unique situation of circular distribution with supplier and the supplied often indistinguishable: something like a zero-order closed loop supply chain.

There is no division of labor and every dabbawala is an undivided part of the whole (Pathak, 2010). The entire process of sorting and delivery happens at a pace unimaginable for most of us without using advanced automation techniques. It is estimated that there is no more than one mistake in every millionth transaction carried out by them. The dabbawalas do not use GPS routing, barcodes, or RFIDs. The dabbawalas may not speak English or may not have attended schools; but, they are not illiterate about their labor (Chopra & Sharma, 2012). Their *nonmainstream literacy* is part of their inimitable success and competitive advantage, notes Krishnan (2014).

and other grassroots level movements that can be fitted broadly into the banner of *the third way* of development The author is allowed to choose whether and to what extent these subdivisions are necessary.

1.3 Community Based Business Model for Sustainable Development

Dabbawalas evidence that sustainability is a 'process in the making'. One of their sustainable innovations in the making includes the introduction of dabbas (food boxes) made of more eco-friendly materials (boxes made of wood rather than steel/aluminum, better sealing to avoid contamination in the transportation phase, no to plastic). In exceptional cases, they deliver restaurant-cooked food to workplaces and even to homes. While resisting the temptation to exploit an increasing opportunity to do the same, they rather encourage home-cooked food from trusted neighborhood homes (livelihood for more families!) They deliver organic raw materials for food preparation to homes, often directly from the farmers (inside the otherwise empty dabbas) in the evenings – an instance of 'sustainable' reverse logistics with integration to 'sustainable' second order supply chains. They collect leftovers from hotels and event locations and deliver to the orphanages and old age homes. Likewise, they collect leftovers in the dabbas to deliver to farmers who use them as manure. Their support for household waste disposal support is well known; also, they support women with cloth washing (*dhobi*). They have started up with opening up of in-house canteens in factories, business offices, and schools (and also the Indianization of menus of multinational fast-food chains).

The Dabbawalas engage in complementary and supplementary pro-community activities. They help circulate community support messages (E.g., About medical camps, volunteering and employment opportunities, etc.). They organize community activism (E.g., Mobilization of people against the corrupt; against unsafe garbage dumping; tree planting; etc.). These add-on activities make an 11am-2pm job to a full day job for the network members.

Recently, they have entered into a new arena: making and mending relationships: (E.g.: match-making). They know very closely about the localities that they serve and provide early warning to law enforcement about troubles in an area. They have been quite progressive about the induction of women / LGBT / minority groups into the member network. They offer part-time continuing educational opportunities for society members. Opportunities for training in computer operations, food service, personal grooming, English language, etc., are provided. Healthcare facilities and retirement planning for the members of the cooperative are provided. They help start, nurture, and certify dabbawalla networks in other cities. They are active in knowledge exchange with colleges and b-schools on dabbawalla network building in particular and social entrepreneurship in general.

2. METHODOLOGY

A part of this case study draws from an earlier analysis carried out by the present researcher in 2011-2012 (George, 2012). The study is broadly informed by the qualitative research tradition. Semi-structured interviews, participant observations, and focus groups were the primary sources of information. Additional primary data was gathered again during 2016-2017, in order to gain insights about improvements in business practices. Twenty-seven dabbawallas were interviewed. The researcher travelled with them while they returned after delivering the dabbas and gathered responses. In this process, the delivery system components were observed, both as an insider (emic perspective) and as an

outsider (etic perspective). Later, seven dabbawalas were included in a focus group during which the preliminary observations made above were refined for theoretical saturation. Logbooks and customer observations on social media were examined, too. Insights from published works on the dabbawala business model complemented these.

3. FINDINGS

3.1 Organic Development of a Sustainable Business

Analysis of the qualitative data indicates that a deeply shared vision of sustainability is built into the Dabbawala business model. The following characteristics are embedded into it:

- *Organic development of business*
  - Not in response to regulatory pressure nor to 'capitalize upon' the green wave of consumer demand
  - Not deliberately introduced as a means for competitive advantage
  - No imported theories or practices
    - Even the dabba coding system is self-evolved/evolving
- *Coexistence with community aspirations*
  - Indian culture gives a lot of importance to 'homemade food'
  - Co-evolution with society; nevertheless, act as a force against undesirable developments (such as fast food culture).
  - Resonates with the voices of nature and society
- *No pen, paper, or electronic memory documentation*
  - All depends upon a few characters of 'code' marked on dabbas
- *Avoid using motorized / private transportation for shipping*
- *Resilience-homeostasis keep tested:* community does not disown the network even when they were allured by commercially minded similar service providers.
  - Some employers are known to give their staff incentives if they use dabbawala services rather than go out to have lunch in the restaurants.
    - Maybe, love delivered from home make them efficient and effective

3.2 Sustainable Competitive Advantage: What the Dabbawalas Think

Focus groups helped to elucidate the following four key themes*:*
- *Work is worship*
  - "delivering food is a way to serve God"
  - "I am delivering love, packaged in food"
  - "Me skipping lunch will go in vain if a single one of my customers goes without lunch"
- *See the whole through the part*
  - "If I fail, all other dabbawalas will fail"
  - "I will pass only if all other dabbawalas pass the test every day"
  - "Process is the outcome"
- *Trust is critically important*
  - "Trust broken once is broken forever"
- *Simplicity works*
  - "Simplicity is not the best solution, but it always works"

The dabbawalas have the first mover advantage associated with building a huge network. They benefit from network economics: benefit for each user increases with the size of the network. There is no room for a parallel network and that adds to their agility. Their algorithm of success lies latently in the web of relationships: their core competence cannot easily be decoded, transferred, or replicated. There

is a culture of competitiveness: superior match between internal resources and external opportunities, obtained through shared understanding between 'the servant and the served'.

Competition for limited space on trains has grown into a major problem for the expansion of the dabbawala model. Mumbai is a 'victim of its own success'. Changing worldviews and lifestyles of the young generation has created a depletion of the supply of the labor force. Nuclear families, trendiness to eat out, frugality no longer a virtue, spouse accepting full-time employment, etc., pose additional problems. Also, businesses are moving to satellite towns around Mumbai which are not well connected by suburban trains (also, temporary offices, telecommuting, etc.).

4. DISCUSSION

While the overall story of dabbawalas of Mumbai has been widely discussed in the academic circles (Chakraborty & Hargude, 2015; Menon & Raithatha, 2012; Patel & Vedula, 2006; Percot, 2005; Roncaglia, 2017), their contribution upon sustainable development has not received adequate attention. Dabbawalas epitomize the triumph of human will that is fueled by the power of certain living philosophies (Nirali & Vijaylaxmi, 2014). The traditional dabbawala business model built upon frugal and reverse innovation ensured sustainability for the bottom of the pyramid. The dabbawalas have no strategy but an implicit sense of shared purpose that directs their collective action (Thakur, 2015). The fitness of a business model to local cultures results in greater productivity, engagement, and low turnover, observe (Behrens, Singh & Bhandarker, 2016).

With increasing living expenses and the cost of delivery, the dabbawalas need additional revenue streams to survive (Baindur & Macário, 2013). The business model streamlining is indeed a strongly felt need (Sivarak, 2017). In this regard, some potential avenues include:
- Carry commercials and samples inside dabbas
- Mail delivery
- Paint dabbas with advertisements
- Product endorsements
- Dabbawala owned restaurants with food take-out outlet

Modernization need not be an enemy of sustainability (Rosca, Arnold, & Bendul, 2017). Yet, some fear that dabbawalas should resist every kind of externally imposed or imported change. The dabbawalas are imbued with a sense of autonomy and accountability not explicable by the western ideas of management and Raste (2016) calls this "spirituality at the bottom of the pyramid". They grew tremendously big, yet maintained the characteristics of micro-enterprises, ensuring inclusive growth. This makes the dabbawala model an intransferable benchmark in urban logistics. Driven by the cultural and structural embeddedness of organically developed ideas of perfection, every dabbawala is in competition with himself for better standards. This simultaneous dynamic of competition with themselves and cooperation with others in the network offers intriguing potential for future research.

CONCLUSIONS

The dabbawalas give a very unique twist to community-based entrepreneurship. This paper has attempted to examine the case of dabbawalas within the context of the extant literature on business networks and sustainable development. The 'third way' of development espoused by this model is driven by motivations other than corporate profit and shareholder wealth. It leads to a balanced distribution of the wealth among the members of the cooperative while serving an important yet traditionally unmet need of the society.

One of their key inimitable strengths is the organic development of not just their organizational culture but also their business strategies. While the traditional literature would place a heavy premium upon planned development and execution on strategies, the agility that an organization gains by interacting

with the various elements in the business environment – the 'survival of the fittest, overcoming hostile evolutionary forces and aligning with the favorable headwinds – are much more sustainable and longer lasting (Farjoun, 2002).

Three generations of dabbawalas made this business model work. But, will next generation be interested to accept this as a career option? A Project with tech-savvy young employees on an 'express delivery system' using electronic distribution technologies is in the experimental stage. E-commerce in food delivery (web-based booking, SMS based ordering and tracking, etc.) is a serious initiative. Experimentation is done with 'table services' by trade-school trained dabbawalas.

Will these lead to an erosion of their core competence? Will the 'MBAs as managers' create a cultural divide between the dabbawalas on the road and the managers sitting in the corporate building? A lot of unsought (sometimes unwanted) help comes to the dabbawalas from academic researchers and *gurus*. Unfortunately, not much of their jargon makes sense for the illiterate tribe of street-smart dabbawalas.

No doubt, a crucial question that might be going through the minds of the dabbawala top brasses is whether their reputation as an impeccable social enterprise will be negatively affected or whether their key strengths will be diluted. We need to wait and see. Still, with the appointment of a few professionally trained administrators and the introduction of scientific managerial practices, the dabbawalas hope to keep pace with the times.

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HIGH-TECH START-UPS IN JAPAN: COGENT LABS, AI-OCR SOLUTIONS FOR AUTOMATED BUSINESS PROCESS OUTSOURCING

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ABSTRACT

This business research case introduces Cogent Labs, a Japanese high-tech start-up that provides AI-driven technologies, is making the critical transition from an entrepreneur-driven to a mature management-run organization, the company's business context and technology development. That requires to harmonize the entrepreneurial and managerial capacity, by a collaborative approach integrating cross-functional product teams. The high-tech start-up has demonstrated ability to overcome the transitional stage of the first entrepreneurship to stability and sustainability through the management, while at the same time keeping innovation by adding Natural Language Processing and Times-Series developments, and creativity; rapidly developing new products. The business case demonstrates that in the start-up to managerial transition of a high-tech start-up the key success factor lies in the motivation and coordination of the different professional cultures –scientific and engineering- that should collaborate in the AI research and fast development of viable products. The method is based on interviews conducted with key executives and a strategic analysis of the firm and its rapidly evolving context in terms of artificial intelligence (AI) and deep learning. The start-up company develops AI-based applications like Tegaki AI, supporting their initial clients from the financial sector in the incremental automation of business processes, based on AI- and Internet of Things (IoT)-driven business processes. Tegaki AI triggers non-strategic business decisions through optical character recognition (OCR) and optical handwriting recognition (OHR) algorithms that show 99.2% accuracy. This business case describes the context of entrepreneurship ecosystems in Japan and the economic emergence of business smartization solutions through the new AI paradigm and OHR.

KEYWORDS: Entrepreneurship, Start-up, Artificial Intelligence, Business Process, Optical Handwriting Recognition, Optical Character Recognition, Machine Learning, Natural Language Processing

JEL CLASSIFICATION: L21, L25, L26. M13, M15

INTRODUCTION

Founded in 2014 by Jun Inuma and Eric Whiteway, current executive directors, the company is located in Tokyo and has a capital of 1.472 billion yen ($13 million) (including reserves). The mission of Cogent Labs "is to research and develop cutting-edge artificial intelligence in order to solve the previously impossible. Through real-world applications of our technology we aim to bring meaningful and transformative impact to society with the ultimate goal of enhancing the overall quality of life." (Cogent Labs Inc., 2017). Jun Inuma, co-founder and CEO at Cogent Labs, stated in an interview in July 2017:

> "When I was working for a cloud computing company [Salesforce.com], I had large doubts in my mind towards the industry and market which had room for improvement and innovation. While thinking about how technology may support measures to resolve the primary industry sector issue in the Japanese market, and the issue of future decrease in the working population, as well as development of the world economy, I strongly felt the potential of artificial

intelligence and founded Cogent Labs." … "Cogent Labs aims at improving market gaps in Artificial Intelligence by providing real-time solution centric towards favouring Japanese Market Structure. Cogent Labs intends to increase the application of Artificial Intelligence to solve societal problems and improve the quality of life-" (Cogent Labs Inc., 2017; Inuma, J. & Malkin, 2017).

According to Cogent Labs, artificial intelligence is a determinant method of solving complex problems, as Japanese handwriting includes Kana (Hiraganaand Katakana) and Kanji (Chinese) alphabets, with a total of over 50,000 characters (Sasanuma & Fujimura, 1971). As of 2010, Japanese primary and secondary school students are required to learn 2,136 basic Kanji characters. As an example, Wakahara and Odaka (1997) presented a distortion-tolerant online cursive Kanji character recognition software for 2,980 Kanji character categories, obtaining a recognition rate of 96.0 percent.

According to Amin (n.d.), AI algorithms develop an automated approach whereby experts can obtain information extracted from the document via AI-based in-depth learning protocols. Cogent Labs uses artificial intelligence to create proprietary algorithms essential in solving problems in handwriting recognition, optical character recognition and improving business processes (Cogent Labs Inc., 2017).

Using multiple neural network mechanisms, AI engines can observe the user's stylus patterns and recognize verbs, characters and phrases, and also writing behaviours. The importance of this research is that it is a vital impetus to ensuring real-time handwriting data processing signature verification during credit card transactions in supermarkets, subways and retail store checkout points (Kessentini, Burger, & Paquet, 2010). Users can sign via Personal Digital Agendas (PDA) and Tablet Computers to authenticate their signature or write application forms for further scanning, and guarantee automated business processes that previously required human verification. AI is vital to ensuring automation of the handwriting process to make it adequately fit real-world instances (Navigli & Ponzetto, 1999). A strong determinant for the rapid growth of Cogent Labs is the presence of dedicated information experts and data scientist, combined with advanced business expertise and excellent academic skills, from different nationalities working together in Tokyo close to the market and clients in order to better understand their needs, in a co-creation product development model. Jun Inuma defined the competitive advantage at Cogent Labs as:

> "What is unique about and also a strong point of Cogent Labs is that its team is comprised of members with strong business skills based on high quality academic knowledge and experience. By adapting sound knowledge and its technology to business issues and social problems which no one has been able to resolve, our team is aiming to provide unprecedented innovation. The team also has global diversity, and we are developing a system to rapidly develop by expanding into world markets." (Inuma, J. & Malkin, 2017).

1 SCOPE AND OBJECTIVES

According Kuratko (2017) "managing entrepreneurial growth may be the most critical tactic for the future success of a business enterprise". The challenge lies in managing harmoniously the entrepreneurial and managerial capacity, accompanying dynamic and changing factors for transitioning from entrepreneurial approach to managerial. What requires the entrepreneur to possess at the same time a high strategic and tactical capacity to develop growth and stabilized the operations at the same time, without letting innovation and creativity decline. The Matthew, Sonfield and Lussier Entrepreneurial Strategy Matrix to measure risk and innovation states that the higher the innovative goal pursued, the greater the risk that must be managed. As is the case with AI-first start-ups. This requires the difficult approaches to reduce risk through strict control of investments and operating costs, while maintaining the speed of innovation, and opting for joint-venture alliances to support growth (Kuratko, 2017). In the perspective of technology and innovation management, to achieve success in this transitional process requires internal motivation for enhancing innovative, creative performance, with at least two conditions should be met: a) clear goals, objectives with autonomy to act guided with supportive feedback (Katz, 2008). b) a team of technology professionals who have

complementary motivational anchors in their careers; managerial, technical-functional, security-stability to entrepreneurial creativity, among the eight defined by Schein (1996).

In order to verify what has been said so far, we have developed this case by observing, analysing and describing the Japanese start-up Cogent Labs is an AI-based technological company that facilitates research and development and research protocols in solving problems using AI protocols. The methodology used has been to interview one of its co-founders and executive director, its AI architecture director, collaborate with them in delivering an academic conference, and follow the evolution of the company for a year and a half. With the purpose of demonstrating how a start-up based on the development of high technology can consolidate and quickly generate products based on AI, in an environment unfavourable to entrepreneurship.

2 ENTREPRENEURSHIP ECOSYSTEMS IN JAPAN

Entrepreneurship is the combination of willingness and a passion to achieve goals and expectations. An empirical study in Japan reported that the number of growing start-up systems has decreased significantly as the population has grown in Japan. The factors influencing start-up ecosystems includes age consideration, education, family status, occupation, employment types, job tenure and industry types. Furthermore, based on empirical data, the age effect coefficient and willingness to undertake new adventures are significant determinants of the success of start-ups in Japan. Moreover, entrepreneurship offers the perfect terrain for continuous innovations, economic sustainability and increased employment potential deficit (Karlin, 2013).

Although in the 1980s the emergence of the Japanese economy was boosted by a large number of entrepreneurs, especially in the electronics sectors, machinery and automobiles with significant industrial competitiveness, the bursting of the financial bubble in 1990 left a scenario of stagnation with a period of global entrepreneurial relevance (Cusumano, 2016).

The current profiles of Japanese and North American companies differ substantially due to the dominance of large corporations with interests in almost all industries and financial sectors. Such companies are called *keiretsus* in Japan and are based on a socially-rooted culture based on the relationships of lifelong employment. Many of the start-ups are born of the so-called "intrapreneurship" as a spin-off from large companies.

Japanese high-tech start-ups originate from universities (Daly, 1998; Honjo, 2017), with some similarity to the British model. These university spin-offs are usually financed by emerging stock markets, with the funds coming from *keiretsus* and private equity income. Although the number of annual start-ups was significantly affected by the crisis, stabilizing at an average of 50 spin-offs between 2010 and 2013, the start-up ratio and number of employed entrepreneurs wishing to establish their own business have been on the decrease for decades. According to the Employment Status Survey study of 2012, one third of the founders of new companies are over 60 years old, and the ratio continues to grow (Okamuro et al., 2017). They are usually professionals with seasoned backgrounds in multinational companies who decide to invest their early retirement compensation in maintaining their professional activity with a greater degree of freedom.

On the other hand, universities focus on basic R&D strategies and preferably collaborate with corporations and accumulate patents and licenses, without developing business models (Ito et al., 2016), while governments decide to support large corporations in the promotion of innovation to recover global competitive capacity lost during 20 years of economic stagnation.

Any start-up that does not match these profiles will have to grow battling against this profoundly traditional social, business and political culture. A survey carried out in 2001 on 396 Japanese firms and 188 Silicon Valley firms concluded that Japanese entrepreneurs show social leadership: they are

oriented towards social causes, in search of social recognition, and are mainly concerned with the effects of globalization, with great strategic focus on R&D without worrying much about financial risks. While Silicon Valley start-ups show an individual leadership profile, they are more motivated by factors such as personal achievement and accumulation of personal wealth, customer-focus, and the search for great opportunities that allow access to venture capital and offer rapid growth (Suzuki et al., 2001).

In Japan, according to empirical data the ratio of start-ups has been lower. The primary factor influencing the growth of start-up systems is the preparation involved, the willingness of the entrepreneur to create a start-up and properly established procedures that enable the acceleration of start-up ecosystems (Karlin, 2013). Another issue influencing start-up ecosystems in Japan is the higher ratio of senior entrepreneurs over the age of 60 (Karlin, 2013). These entrepreneurs are retired senior managers with an extensive background in a particular industry. Empirical studies suggested that a third of entrepreneurial founders are aged 60 years and above. Further analysis revealed a reduction in the ratio of younger founders. The willingness and preparedness to start up a business differ proportionately across the age range, as the pattern might change over the time. The primary determinant for the desire and development of a business start-up is a clear indication of the success of entrepreneurial ecosystems. The fundamental implication for increasing entrepreneurial ecosystems is to create awareness of their role in boosting innovations and improving economic sustainability. In contrast to the current Japanese tendency, Cogent Labs founders are in their thirties, and employees' average age is same as that of the founders.

Entrepreneurship focuses on improving the livelihood of the Japanese through the creation of an all-inclusive society, thereby facilitating higher economic empowerment. The Japanese economy is more likely to be in the hands of larger corporations. Japanese ecosystems are expected to be boosted by open access to innovations and the ability of larger firms to adopt new ideas and develop innovative concerns that are more likely to address creative issues (Kushida, 2016, p. 4).

Japanese start-up ecosystems are more likely to grow due to increased market dynamics. Japanese venture capital is expected to grow dynamically, providing open access governance to greater approaches to industrialization techniques (Kushida, 2016, p. 4). The rise of independent venture capitalists increases returns on investment for start-up ecosystems. Entrepreneurship ultimately encourages the growth of business ventures and increases the rate of innovation and economic empowerment in Japan (Zhang, 2017).

A high start-up ecosystem rationale enhances the growth of commercial gross per capita formulation. The policy recommendation is likely to boost higher growth in the Japanese stock market. The New Economy Summit in Japan provides entrepreneurs life-changing opportunities to interact with high-stake Silicon Valley entrepreneurs to achieve a formidable entrepreneurship culture for the Japanese nation. Furthermore, technological summits and conferences such as the Infinity Venture Summit attract substantially greater numbers of corporations to Kyoto on an annual basis to discuss auxiliary mechanisms of how best to improve their start-up ecosystems through a centralized hub of investors, entrepreneurs and high-start-up strategic partnership. Increasing support mechanisms is vital for the growth of business corporations through diplomatic partner valuation strategies (Ford, 2016). Furthermore, the best way of handling an increased start-up culture is to centralize its operation and create open governance methodologies to expand its economic empowerment (Ford, 2016).

Japan's economic empowerment should legitimize and provide access to incentives to start-up ecosystems solving real-world problems such as AI-driven optical character recognition. Furthermore, the governing authorities should create a comprehensive database that lists start-ups based on their revenues and should deduce policy recommendation through R&D with regard to how they can achieve optimum success.

Japan start-ups should become start-up accelerators in order to scale their global presence. Moreover, there should be active efforts in strengthening university-government ties, thus boosting successful start-ups. Government policies are key growth pillars gauging the success of start-up entrepreneurial ecosystems. Through government policies, start-ups are given direct subsidies on goods and services, thus creating an advanced IT-enabled revolution. The Japanese government should create an open access market structure that addresses schematic concerns regarding how we can improve entrepreneurial issues.

3 ECONOMIC EMERGENCE OF BUSINESS SMARTIZATION SOLUTIONS THROUGH AI

The trend towards AI is influencing every sector of the world economy, not just in Japan. The OECD (2016) reported that the digital economy is disruptive "in particular [for] those with low or no formal education –lack the necessary skills and know-how–, and financial resources to take advantage of ICTs, and to introduce the changes needed for their productive use in businesses and across society" OECD (2016).

AI ecosystems have grown exponentially during the 21st century. Five of the six top world companies with the largest market capitalization are also the top five with an absolute increase in market capitalization: Apple Inc., Alphabet Inc. (Google), Amazon.Com Inc., Microsoft Corp. and Facebook Inc. are digital business model-based (PWC, 2017) and develop or/and use AI as a core operational competence in their business models. All these companies were ranked below position #31, the best, in 2009 (see Figure 1).

We are entering the era of Big Data, with more than 40 billion web pages indexed on the Internet, 100 hours of video uploaded to YouTube every minute, trillions of real-time data generated by the Internet of Things and commercial networks in companies: Wal-Mart generates one million commercial transactions per hour and its databases contain more than 2.5 petabytes (2.5×1015) of information, amounts that are growing exponentially. AI and Deep Learning feed on these huge amounts of data — which are impossible to process with traditional methods because of their volume and complexity— to convert them into useful information for both prediction and decision-making processes. We can define Machine Learning as "a set of methods that can automatically detect patterns in data, and then use the uncovered patterns to predict future data or to perform other kind of decision-making under uncertainty (such as planning how to collect more data)" (Murphy, 2012).

The AI market is projected to almost triple from 2014 to 2020, which represents an increase in spending from $58 billion to $153 billion, according to research conducted by Bank of America Merrill Lynch (TWICE, 2017). According to a survey carried out by the research company Tractica (Armstrong & Richter, 2016), the main AI applications and their estimated cumulative revenue 2016-2025 will be:

1. Static image recognition, classification and tagging $8,097.9m
2. Algorithmic trading strategy performance improvement $7,540,5m
3. Efficient, scalable processing of patient data $7,366.4m
4. Predictive maintenance $4,680.3m
5. Geospatial images object identification detection, classification, tracking $4.201.0m
6. Text query images $3,741.1m
7. Automated geophysical feature detection $3,655.5m
8. Content distribution on social media $3,566.6m
9. Object detection and classification-avoidance, navigation $3,169.8m
10. Prevention against cybersecurity fraud $2,472.6m

From a large survey of machine learning, one study predicted that AI will outperform humans in many domains in the next 40 years, including language translation (by 2024), truck driving (by 2027), retail work (by 2031), writing a bestselling book (by 2049), and surgery (by 2053). Researchers believe there is a 50% chance of AI outperforming humans in all tasks in 45 years and of automating all human jobs in 120 years. Interestingly, Asian respondents expect these dates to be much sooner than North Americans (Grace et al., 2017).

AI is reshaping humankind's approach to science and technologies, industrialization, health, military and security influences. For instance, through the use of a proprietary algorithm, IBM Watson accurately predicts medical effects to a greater extent. AI also provides self-driving vehicles increased data processing capabilities, enabling them to undertake real-time decision-making.

Business process outsourcing (BPO) has enabled Cogent Labs and its business ecosystem to increase their decision-making capabilities, thereby increasing the potential for the revenue generated by the company and also improving the innovation potential for Japan. AI researcher predict that by 2025, AI will surpass the potential for improvement of human performance (Grace et al., 2017).

The transformation of business models, products, services, operations and processes driven by the real-time automation of decisions and control is fostered by five convergent drives: AI, IoT, Cyber-Physical Interfaces, Enabling Technologies —such as smart sensors, nanotechnology, Brain Computer Interfaces, 3D-Printing, etc.— and Emerging Sciences, including bio, neuro, and green sciences (see Figure 2).

4 COGENT LAB'S TEGAKI AI

Tegaki ("handwriting" in Japanese) is an AI solution that performs automatic character recognition. The challenges for the Tegaki AI character recognition framework were to increase the accuracy and reduce the processing time. In Japanese writing systems, Tegaki AI uses the minimum amount of time to process a larger batch of queued content from different handwriting styles (Cogent Labs Inc., 2017). Jun Inuma summarized Tadaki's value proposition as:

> "For Tegaki is very simple - the service can perform the action that was previously done manually, this reduces the cost and speed. In the past a client may have to wait days while with Tegaki the results for a big batch can be done in a matter of minutes. For the financial service - it's a matter of providing insight that would have been difficult to get using more traditional methods. So, either we do what humans can do but cheaper/faster or we can do things which humans could not do, such as processing lots of time-series data and making predictions in near real-time." (Inuma, J. & Malkin, 2017).

Tegaki AI uses proprietary algorithms to provide meaningful insights for the financial industries. In addition, Tegaki AI improves human coordination processes in real-time and generates time-series sequences necessary for making economic predictions and decisions-making processes. Using deep learning as the core technological enterprise, Cogent Labs develops proprietary algorithm processing information in real-time. Tegaki AI is essential for processing Japanese and Chinese Language Systems (Cogent Labs Inc., 2017).

The central importance of using Tegaki AI allows clients to massively reduce their BPO costs, aiding them to further improve their costs acquisition models. To fully achieve accurate Tegaki AI dynamics, Cogent Labs uses deep learning and neural network protocols to advance handwriting recognition protocols in real-time instances and the conversion of handwritten Japanese languages and writing systems into conceptual semantic text data using.

5 THE NEW AI PARADIGM AND OHR

By using AI-OHR API procedures, Cogent Labs improves business interactions with their advanced API communication algorithm (Tappert, Suen, & Wakahara, n.d., p. 1123). OHR is necessary in scenarios where digitized content, both human and machine-encoded, should be readable and managed by IT systems. The challenge for OHR is to recognize digital content through a digital scanning paradigm. Optical recognition can be offline and online; online recognition identifies document elements during the same time the system's user types details into the computer when filling protocols. Using an AI-based approach, OHR can coherently increase the quality of synthesized elements through supervised deep-learning operating procedures. Automatic identification of scanned, digitized factors enhances the quality of the produced components through online and off-line recognition algorithms.

Through optical scanning, the digital content of an image is captured and translated into a centralized server for analysis. OCR has been used efficiently in meeting the end-user perspective of the human handwriting process by automating the process for systems users. OCR can cover aspects of centralized data entry process. A document scanning approach enables digitization of limited sets of printable elements such as typed textual data.

Through API, business processes can link with the established API calls to determine the verification patterns for Japanese writing pattern schematics. Furthermore, AI-OCR systems increase the verification patterns for OCR, enhancing structures where Cogent Labs' expert teams can adjust their B2B API to communicate in real-time with the business associated with OCR protocols. Moreover, advancing OCR enables recognition of constrained handwriting patterns that pose a problem for users of correlated handwritten characters. AI-OCR readers embedded in machine learning allow to create interconnectedness of information data semantics.

The accuracy of OCR systems depends on the quality of the input documents. Technical factors such as variation in shape attributes, deformation of textual elements and variation in spacing elements are a problem in developing accurate, concise AI-OCR systems, as they increase the errors generated thus affecting the viability of generic data elements. Cogent Labs intends to use AI systems to avoid human-generated mistakes effectively.

AI-OCR provides auxiliary technology, enabling the development of a structured approach of converting various document types, including scanned elements, digitized documents and PDF files, into searchable data elements. AI embodies the ability to use broad machine-learning paradigms and an Artificial Neural Network (ANN) approach of scanning digitized images to extract synthetic textual data necessary for verification. OCR APIs can be used by business enterprises to examine digitized images, retrieve information and send textual data to a centralized server. OCR provides a better, faster, more coherent, scalable data capture algorithm, saving extensive time on resource constraints and time factors.

OCR enables the algorithmic recognition for deformation of handwriting systems preprocessing relevant data from the database templates. Traditional document imaging methods use models and algorithms in a two-dimensional environment to recognize objects and patterns. OCR methods today recognize a broader spectrum of colors and can dynamically distinguish between the background and the forefront in digitized documents. The proprietary algorithm de-skews, de-speckles and enables 3-D image correction to work with lower resolution scanned images. OCR software on the market today includes an imaging technology called matrix matching technological footprint. Matrix matching is a form of artificial intelligence which combines feature extraction and similarity measuring. Matrix matching technology brings new possibilities to OCR.

Furthermore, AI-driven OCR algorithmic patterns transform data inputs into distinct sets of features through feature extraction of the digital content. Feature detection manipulates raw data images through ANN. ANN algorithms transform digitized images through feature allocation space.

Moreover, feature extraction enables extraction of scanned images to identify the properties and elements of character recognition patterns uniquely.

6 CLOUD-BASED AI ONLINE HANDWRITING RECOGNITION ALGORITHM

Using multiple keystrokes, Tegaki AI automatically and dynamically recognizes keystroke elements with real-time instances and transforms digital signatures into textual information in which Cogent Labs' Japan servers automatically convert critical strokes into analytic details. Cogent Labs develop API-based AI online handwriting software that can be embedded within business enterprise software and dynamically digitizes keystrokes in real-time instances.

Using pattern recognition and deep-machine-learning algorithms, machines can automatically detect Japanese writing systems. Online handwriting recognition software recognizes language symbols, thereby enabling the alphanumerical identification of the Japanese and Chinese Languages. Furthermore, AI online handwriting includes character segmentations and requires separation of textual elements captured from the user's computer systems (SoftWorks AI, 2017).
Discrete characters may require segmentations, which involves interaction between character segmentations and handwriting recognition. Pre-processing of online handwriting by the recognition algorithm enables the processing of handwriting data and importantly the recognition of shapes and patterns. Through character segmentation, the handwriting recognition patterns allow textual information to be extracted from the online recognition machine (SoftWorks AI, 2017).

In general, AI-driven OCR automatically predicts keystrokes and extracts textual data from multiple keystrokes to improve the data recognition algorithm. Handwriting consists of numerous strokes, which form each character in a sequential order, thereby forming character recognition patterns. Japanese writing systems include Hiragana, Katakana, Kanji and English alphanumerical attributes (SoftWorks AI, 2017). Tegaki AI doesn't need to know the order of keystrokes to perform the offline recognition in order to make the prediction.

Static and dynamic variation occurs within the typed elements representing each character in real-time scenarios. Dynamic variation captures multiple keystrokes from machine systems in real-time situations. Stroke direction determines the errors multiplier and evaluates the textual data information. Upper and lower-case characters serve as the baseline for handwriting variations and enable character segmentation. Online data capture refers to the capturing of data as the person writes. Using multiple neural network engines, the AI recognition algorithm observes users' stylus strokes and recognizes users' character elements, words and phrases elements.

Cogent Labs tries to adjust their AI protocols to include proprietary extensions that automatically read elements typed using users' stylus elements and attempts to deduce the character attrition and construct hypotheses based on it. Users type on the machine and the machine translates the document, assembling speculative information based on this information. The critical technological footprint required to create an interactive AI-based structure includes deep-learning technologies, machine-learning protocols, and ANN capability. Through sensor neurons, the profound learning principle leads to the creation of artificial neurons essential for recognizing patterns within image elements and trains the constructed network to facilitate fixed-point recognition of elements.

Embedded machine-learning protocols attempt to create an underlying artificial principle technology that uses using neural nodes to recognize writing systems such as Japanese, Chinese, and English. After the user types into the tablet devices using a computer stylus, it translates the footprint directly to the image database structure (Yasuda, Takahashi & Matsumoto, 2000).

Advancing digital footprints entails scanning documents, capturing them from scanners and tablets, sending the captured images to database servers, and converting them into meaningful information

such as text, graphics elements, mathematical notations or musical notations, thereby enabling users to transform the captured aspects through sharing, editing capabilities or searching for relevant features (Yasuda, Takahashi & Matsumoto, 2000).

Tegaki AI technological innovation should have advanced cross-platform ability and be available for either web-version, standardized platforms or run on an embedded platform. Importantly, integrating it for business consumer purposes is necessary to create a proprietary structure through natural language processing (FKI: Research Group on Computer Vision and Artificial Intelligence INF, University of Bern, 2016). Using AI protocols, Tegaki AI solves the problem of manual entry of data entry. Using advanced web components and dominant API protocols, Tegaki AI can be integrated within BPO to meet the needs of organizations. Tegaki AI seamlessly recognizes handwriting elements within enterprise business structures and industries such as insurance, healthcare and banking (Metz, 2015).

7 BUSINESS SMARTIZATION AND HANDWRITING RECOGNITION

AI plays a significant role in innovation and enhances how businesses addresses the need to solve problems related to OCR dynamics and the automation of business processes. AI and Internet of Things (IoT) facilitate the incremental automation of business processes and non-strategic business decisions. IoT allows devices to connect and communicate across the globe in real-time. I refer to this AI- and IoT-driven business transformation of business processes and business decision automation as "Business Smartization". Cogent Labs invests in powerful technologies to connect more people to businesses and provides automated solutions in the AI sector. Business Smartization equips the company with strategies on how to create a sustainable society through adopting technological architecture (Keysers, Deselaers, Rowley, Wang, & Carbune, 2017).

Business Smartization provides an increased flow of innovations to BPO. Business smartization processes increases the strategies Cogent Labs uses to influence the outcome of its innovation implications. Business Smartization can be illustrated in the following technical scope:

1. Technological approach. What strategy does Cogent Labs plan to implement in the advancement of Optical Character Recognition Techniques in improving AI handwriting concepts for business process automation?
2. Services and product design of AI-based algorithms. Can Cogent Labs improve the algorithmic procedure based on consumption patterns and solve human-oriented problems for automated business decision processes? The success of advancing Optical Character Recognition is directly dependent on the likeability of a product, consumption patterns and how OCR handwriting recognition devices are being designed in order to achieve handwriting behavioural recognition.
3. Business strategy. Entrepreneurship entails growing start-up ecosystems and influences the success of the algorithmic patterns. Cogent Labs uses the notion of algorithmic procedures to increase the financial growth of BPO protocols. Innovation is the key strategy in achieving and implementing newer ideas and enables Cogent Labs' R&D team to enhance AI protocols in advancing the notion of OCR protocols in handwriting recognition algorithmic patterns.

Advancing handwriting technology is a critical competitive value on Cogent Labs' business smartization value proposition within entrepreneurship ecosystems. Recognizing document patterns is extremely easy for human beings but extracting them through deep-machine learning is complex. Offline and online handwriting provides unique challenges to in-depth learning protocols, combining each segment into a series of a defined length to create patterns using AI sequence BPO protocols. Languages such as Japan required advanced OCR algorithms to extract elements within sequences in real-time. Cogent Labs offers auxiliary research patterns on how we can advance our technological footprints, promoting OCR handwriting implementation algorithms using deep learning and AI architecture to increase automatic extraction of segmented elements, thereby improving our ability to view documents (Keysers, Deselaers, Rowley, Wang, & Carbune, 2017).

8 DESCRIPTIVE ANALYSIS OF COGENT LABS

8.1 Business Smartization at Cogent Labs: Automating the OCR process using AI

Under the assumption that business smartization is a process of automation of a process AI-driven. Cogent Labs plans to automate the process of OCR of the Japanese language to increase accuracy by offering end-users software-as-a-service (SaaS) capability.

Cogent Labs is offering BPO capability by providing cloud software solutions to dynamic clientele markets. Furthermore, Cogent Labs intends to develop OCR capability with the potential of using AI-centric solutions to achieve credit management potential in order to prove the authenticity of application entered in the OCR system. Automating OCR capability in Japan is an advanced problem that requires start-up influence to enable the business enterprise to generate solutions for the problem, as the leading role of business start-ups is to create solutions for a given problem.

The automation of OCR is a particular extended problem in Japan and requires the application of AI to increase decision-making potential in proving the authenticity of credit card applications. Using enhanced business smartization, business enterprises create a correct trajectory for which entrepreneurial ecosystems can produce proof of concepts, increase accuracy and provides rapid monetization. AI-driven BPO enables to transform business enterprises by advancing the decision-making potential of the organization.

8.2 Drivers for business smartization

The exponential transformation of Cogent Labs' business models, services, operations and processes increases the real-time processing of decisions. AI ecosystems are a critical technological pillar for shaping the future and changing how OCR recognizes digital signatures within credit card processing using conceptual, proprietary algorithms. Using proprietary handwriting recognition algorithms with a precision rate of 99.2% (see Figure 3), Tegaki AI aims to eliminate complex, inaccurate manual data entry from application forms using Japanese writing systems. API protocols retrieve JSON data types via APIs to communicate via distributed database servers and interact with the business enterprise OCR application to monitor for credit application digital patterns (Tappert, Suen, & Wakahara, n.d., p. 1123).

8.3 Benefits of advancing AI-OHR

AI increases the growth potential of OHR in Japanese writing patterns. Using AI-powered OCR influences the sales of start-ups by enabling the generation of revenue-generating models. AI capability to solve human-oriented problems increases the sales of OCR components exponentially. Furthermore, by advancing OCR towards AI helps:

1. It boosts sales generated by promoting AI.
2. It efficiently boosts operations. AI boosts operational efficiency.
3. Advancing artificially induced handwriting recognition increases customer satisfaction.
4. Entrepreneurs can use AI to boost insights into consumers and enable better market analysis.
5. Start-ups can use AI to increase productivity potential, decrease productivity constraints by lowering operational costs.

8.4 Cogent Labs' business smartization model: business process outsourcing

Business smartization enhances automated AI Optical Recognition Protocols (ORPs) for OHR, thereby improving insight into customers and thus enabling them to make better decisions:

1. To promote business growth and innovation strategy.
2. To enhance customer experience and value proposition.
3. To increase through OHR business adaptability, alignment and agility.
4. To create data strategy, thereby influencing growth potential for knowledge intelligence.

BPO involves contracting specific subcomponents of computer systems with the aim of improving the efficiency and accuracy of processes in the organization. Through its BPO framework, Cogent Labs intends to develop AI capability to reduce operation costs, improve efficiency and upgrade the functionality of the OCR components. AI is revolutionizing how business interactions are handled through centralized API access.

Tegaki AI API provides an auxiliary mechanism where the end users access JSON AI tokens in real-time, facilitating increased, automatic communication between the distributed parties. Through the structured OCR toolkit, end-users can look at a real-time interaction between clients. Most businesses will benefit immensely from creating sustainability through AI-powered systems.

To improve the accuracy of the OHR systems, data structures are crowdsourced from different business enterprises to simultaneously perform data validation and verification (Tappert, Suen, & Wakahara, n.d., p. 1124). OCR-OHR transaction detection, crowdsourced data validation, and algorithmic reconciliation increases the accuracy and consistency of users' writing patterns, enabling them to construct meaningful data insight based on database servers' information retrieved through the AWS (Amazon Web Services) toolkit (Tappert, Suen, & Wakahara, n.d., p. 1124).

The pros and cons of using BPO for Cogent Labs for advanced OHR are:

1. Using BPO saves considerable time required to develop proprietary OCR algorithmic patterns.
2. Saves time required that is distributed uniformly in the management of core competencies of the applications.
3. Increased insights into consumers are necessary to facilitate accurate, efficient algorithmic procedures.
4. Enables real-time data analytics patterns.
5. Enables the use of third-party API functionality essential for generating solutions for a given problem.
6. Contacting through BPO is an important concept to enable stimulated business acceleration, since it reduces costs and exponentially increases the quality of services (QoS) for business growth.

9 COMPONENTS OF AI-OCR SYSTEMS

9.1 Optical scanning

AI-OCR improves the functionality of handwriting recognition processes through which digital scanners scans an original document. OHR fundamentally converts multilevel data images into scanned digital conversion images (Wright, 2015).

Advanced AI-OHR segments the constituent of pixels, including company logos, business imprints, stamping purposes, and recognizes stamps and high-density company images. AI-based human recognition structures increase the resolutions of pictures through OHR patterns (Wright, 2015).

9.2 Feature extraction

The objective of creating AI-OCR is to enable feature extraction to capture the essential characters of digitized images. Cogent Labs' OCR API rasters the pixel characteristics of models by increasing the threshold of images elements.

9.3 Optical Handwriting Recognition

OHR describes the recognition by an algorithm of users' keystrokes in real-time. As the user types on the machine, the algorithm dynamically deduces the keystrokes and processes the request in real-time. The recognition technique directly depends on the speed of the computer systems, the lag time of the computer systems and the technological structure of the AI handwriting recognition techniques (Wright, 2015).

In OHR, the transducer elements capture the keystrokes, determines the patterns of the writing through advanced sampling rate of 200 points per inch through scanners and digitizers such as tablets. Advances through AI increases the recognition ability of data captured techniques (Pham, Bluche, Kermorvant, & Louradour, 2014, p. 5).

9.4 Technical feasibility

The central question to answer while developing technical feasibility is the aim of the project in meeting end-user requirements. Is the required technology essential for solving errors in human handwriting patterns?

During the creation of an advanced system, information experts thoroughly analyze the merits of developing versioned systems and how the methods can meet increased user expectations. What are the significant barriers to information? OCR-OHR requires advanced human expertise and therefore a fundamental software metrics on the artificial intelligence resolution paradigm.

9.5 Economic feasibility

Economic feasibility generates the costs implication of developing an AI-OCR conceptualized model. Furthermore, financial viability weighs on the merits of advancing new information systems and how it can enable users to achieve improved human interaction patterns. Economic feasibility necessitates planning procedures and provides top management with economic justifications for advancing their new technological enterprise. The potential future market is huge for Cogent Labs' Tegaki AI-OCR solution, with a predicted cumulative revenue of $3,741.1m between 2015 and 2025 (Armstrong & Richter, 2016).

Moreover, the benefits of increased automation from the companies' perspectives includes expanding human interaction and improving their mechanisms for making timely, quality decisions, thereby improving their accuracy of standard operation. Increased automation also significantly contributes to correct entrepreneurship policies for Japan. Economic feasibility tests estimate the success rationale of entrepreneurship models and start-up bubbles across Japan to improve the revenue-generating model in Japan.

10 COGENT LABS ORGANIZATIONAL CULTURE: SOLVING THE MISMATCH OF PROFESSIONAL CULTURAL BEHAVIOURS

According to Dr Malkin (2018), "AI scientists view their software as an exoskeleton. ML engineers view their software as a robot". The key success factor is to eliminate the gap in perspectives between the characteristic cultures of scientists and engineers. Cultures that, by their very nature, differ considerably, since scientists tend towards abstraction, whilst engineers only accept practical results, with the two groups demonstrating a notable inability to collaborate. Scientists prioritise maximizing

knowledge through isolated conceptual models. Conceptual models that engineers find extremely difficult to quickly convert into real products that need to consider many other factors in addition to their feasibility in being produced and providing value to clients. Hence, many companies that implement AI-ML systems have serious difficulties in managing to monetize their AI solutions.

The AI Scientist's Approach:

- Seek accuracy and/or performance match domain.
- Create new algorithms and code samples to validate them.
- May be embedded in product teams.

The ML Engineer's Approach:

- Ensure model metrics match product metrics.
- Manage code and data inventories.
- Track model performances during product lifetime.

10.1 Cogent Labs Product Development: Building ML Products Faster

The solution of Cogent Labs to solve this clash between professional cultures, entails two fundamental aspects: build collaborative cross-functional product teams and recreate products for experimentation, making everyone understands what is being done and what results can be expected, with continuous supportive feedback.

10.2 Collaborative Approach by Cross-Functional Product Teams

The problem lies in the fact that even with the best AI scientists available, they are faced with serious difficulties in communicating outside of their strictly regulated scientific environment and in defining metrics that align with the product's needs. They tend to build parallel prototypes, recreating production models to iterate and systematically value accuracy improvement over maintainability/scalability concerns.

Because of this, a culture of collaboration needs to be created between scientists and engineers as well the sales team and clients, involving them in the product's development cycle. This involves taking on scientists who understand software engineering, equipping them with the tools to iterate ideas –always around the product– with the collaboration of engineers, thereby rewarding maintainability, stability, complexity and reduction.

The function of ML engineers is to professionalize the model design with the idea of developing a viable product from the beginning. They need to understand scientific models, their limitations and to be able to improve them, and to work with researchers in order to understand new concepts and research ideas.

Understanding, both scientists and engineers, that the model itself is a small part of an AI-ML system. This collaborative approach involves engineers in the research process, and also involve marketing and sales people, together with key clients (co-creating) in the development process.

10.3 Recreate Production for Experimentation

Dr Malkin summarises emphasizes the importance of creating an environment that facilitates experimentation and the construction of prototype/models to improve communication and collaboration between teams, setting common expectations and goals: "[The] traditional split of

infrastructure between production, where the infra is well-defined, scalable, and ML teams, where the infra is ad hoc, customized, is slowing innovation in AI products".

- Build you production system to be clonable for experimentation.
- Set up integration testing for model updates.
- Build pipelines so that training is part of production.

In this way (Figure 4) Cogent Labs has designed a cooperative organizational culture that has allowed it to create a general AI-ML system for the automation of business processes –Business Smartization– with solutions such as the processing of manually written, spoken or even unstructured information, and Big Data with its Time-Series Forecasting solution, which also incorporates information sources and external networks.

This AI-ML system is growing to be a general AI system in terms of scalability, providing increasing productivity through the implementation of extended Business Smartization in AI-driven companies. Something similar occurred in the era before Business Digitalization in terms of the need to transform data into information, except that now the capacity exists to convert this massive, unconnected, unstructured information, coming from various sources and knowledge-diffuse, into automatic decisions AI-driven with exponential results.

10.4 Evolution of AI product developments

Thanks to the collaborative and cross-functional management of projects, the research and development lines have been expanded, incorporating two new ones: Natural Language Processing and Times-Series. Having in June 2018, three lines of research in different stages of commercialization, and new product Kaidoku based on NLP (Cogent Labs, 2018). What represents a high capacity of development of projects and quantity that reaches its phase of commercial viability.

1. Image Recognition: Tegaki:
    1. Handwriting Recognition.
    2. Hierarchical Document Understanding.

2. Natural Language Processing: Kaidoku:
    1. Sequence-to-Sequence Learning.
    2. Latent Variable Models.
    3. Information Extraction.

3. Times-Series:
    1. Financial Time-Series Farecasting.
    2. Brain-Computer Interfaces.

11 CONCLUSION

The process of advancing OHR patterns is fundamental in ensuring the automatic prediction of users' keystrokes, analysing multiple keystrokes instantaneously and evaluating the projections, making a conclusive argument based on the predictions. Using the advanced capabilities of AI, a business enterprise can construct document recognition algorithms that predict the outcome of the attributes and deduces whether the digitized content meets required scenarios. Furthermore, advances in online and offline recognition patterns automatically makes the discrete communication elements. Spacing distinct characters allow character segmentations are deducing better hypothesis for user perspective.

Cogent Labs plans to create AI-enabled API procedure calls for businesses by facilitating full recognition of characters to make communication real-time and enable the creation of prerequisite

character recognition patterns. Through entrepreneurship, Cogent Labs intends to upgrade its Tegaki AI and discretely shape character segmentation, allowing pre-processing of character elements that require distinguishing between character and numerical elements. Cogent Labs strives to strengthen their provision of AI systems for handwriting recognition algorithms.

While developing its first AI product, the start-up has built a structure capable of applying the knowledge acquired and the experience accumulated in AI-ML through a collaborative, cross-functional organization, which creates motivation for scientists, engineers and professionals alike. The main key Success factor is to eliminate the gap in perspectives between the characteristic cultures and motivations of AI scientists and ML engineers, empowering team work. Cogent Labs achieves that by two approaches: a) collaborative approach by cross-functional product teams, and b) Recreate production for experimentation, where everyone understands what is being done and what results can be expected, with continuous supportive feedback.

Cogent Labs has demonstrated ability to overcome the transitional stage of the first entrepreneurship to stability and sustainability through the management, while at the same time keeping innovation by adding NLP and Times-Series, and creativity by rapidly developing products –Kaidoku and Times-Series-. Fulfilling the premises established in the initial Scope and Objectives of this article.

Figure 1 **Global Top 100 Companies by market capitalization, 31 March 2017 update**

Top 100 global companies 1-20

Company name	Nationality	Industry	Rank +/-	31 March 2017		31 March 2009	
				Rank	Market Cap ($bn)	Rank	Market Cap ($bn)
Apple Inc	United States	Technology	32	1	754	33	94
Alphabet Inc-Cl A	United States	Technology	20	2	579	22	110
Microsoft Corp	United States	Technology	3	3	509	6	163
Amazon.Com Inc	United States	Consumer Services	-	4	423	NA	31
Berkshire Hathaway Inc-Cl A	United States	Financials	7	5	411	12	134
Facebook Inc-A	United States	Technology	-	6	411	-	-
Exxon Mobil Corp	United States	Oil & Gas	-6	7	340	1	337
Johnson & Johnson	United States	Health Care	0	8	338	8	145
Jpmorgan Chase & Co	United States	Financials	19	9	314	28	100
Wells Fargo & Co	United States	Financials	45	10	279	55	60
Tencent Holdings Ltd	China	Technology	-	11	272	-	13
Alibaba Group Holding-Sp Adr	China	Consumer Services	-	12	269	-	-
General Electric Co	United States	Industrials	11	13	260	24	107
Samsung Electronics Co Ltd	South Korea	Consumer Goods	39	14	259	53	61
At&T Inc	United States	Telecommunications	-8	15	256	7	149
Ind & Comm Bk Of China-A	China	Financials	-12	16	246	4	188
Nestle	Switzerland	Consumer Goods	-2	17	239	15	129
Bank Of America Corp	United States	Financials	69	18	236	87	44
Procter & Gamble	United States	Consumer Goods	-9	19	230	10	138
China Mobile Ltd	Hong Kong	Telecommunications	-15	20	224	5	175

The risers – the 20 Global Top 100 companies with the largest absolute increase in market cap

	Company name	Nationality	Industry	Change in market cap 2009-2017 ($bn)		Market cap 2017 ($bn)	Market cap 2009 ($bn)
1	Apple Inc	United States	Technology	660	705%	754	94
2	Alphabet Inc	United States	Technology	470	428%	579	110
3	Amazon.Com Inc	United States	Consumer Services	392	1244%	423	31
4	Microsoft Corp	United States	Technology	346	212%	509	163
5	Facebook Inc	United States	Technology	330*	407%*	411	81*
6	Berkshire Hathaway Inc	United States	Financials	277	208%	411	134
7	Tencent Holdings Ltd	China	Technology	258	1940%	272	13
8	Wells Fargo & Co	United States	Financials	218	362%	279	60
9	Jpmorgan Chase & Co	United States	Financials	214	214%	314	100
10	Samsung Electronics Co Ltd	South Korea	Consumer Goods	198	324%	259	61
11	Bank Of America Corp	United States	Financials	193	441%	236	44
12	Johnson & Johnson	United States	Health Care	192	132%	338	145
13	Anheuser-Busch Inbev Sa	Belgium	Consumer Goods	178	405%	222	44
14	Visa Inc	United States	Financials	159	338%	206	47
15	General Electric Co	United States	Industrials	153	143%	260	107
16	Citigroup Inc	United States	Financials	152	1094%	165	14
17	Walt Disney Co	United States	Consumer Services	146	432%	179	34
18	Comcast Corp	United States	Consumer Services	140	361%	178	39
19	Home Depot Inc	United States	Consumer Services	137	342%	177	40
20	Unitedhealth Group Inc	United States	Consumer Services	133	520%	158	25

* Market Cap at IPO date and, respectively, increase since that date

(Source: PWC, 2017*)*

Figure 2 **Five drivers of Business Smartization: Exponential transformation of business models, products, services, operations and processes driven by real-time automation of decisions and control**
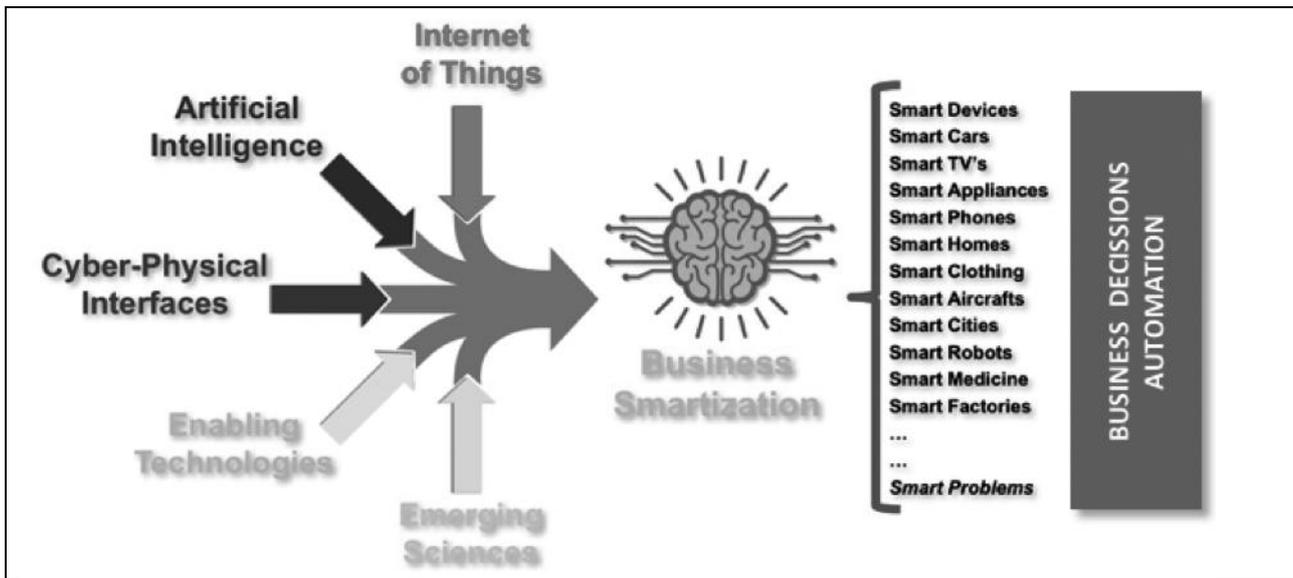
(Source: Author*)*

Figure 3 **Example of handwriting to text recognition from five different handwritten sources processed by Tegaki AI**

(Source: Cogent Labs Inc., 2017*)*

Figure 4 **Cogent Labs cross-cultural collaborative approach for faster development of AI-ML products**
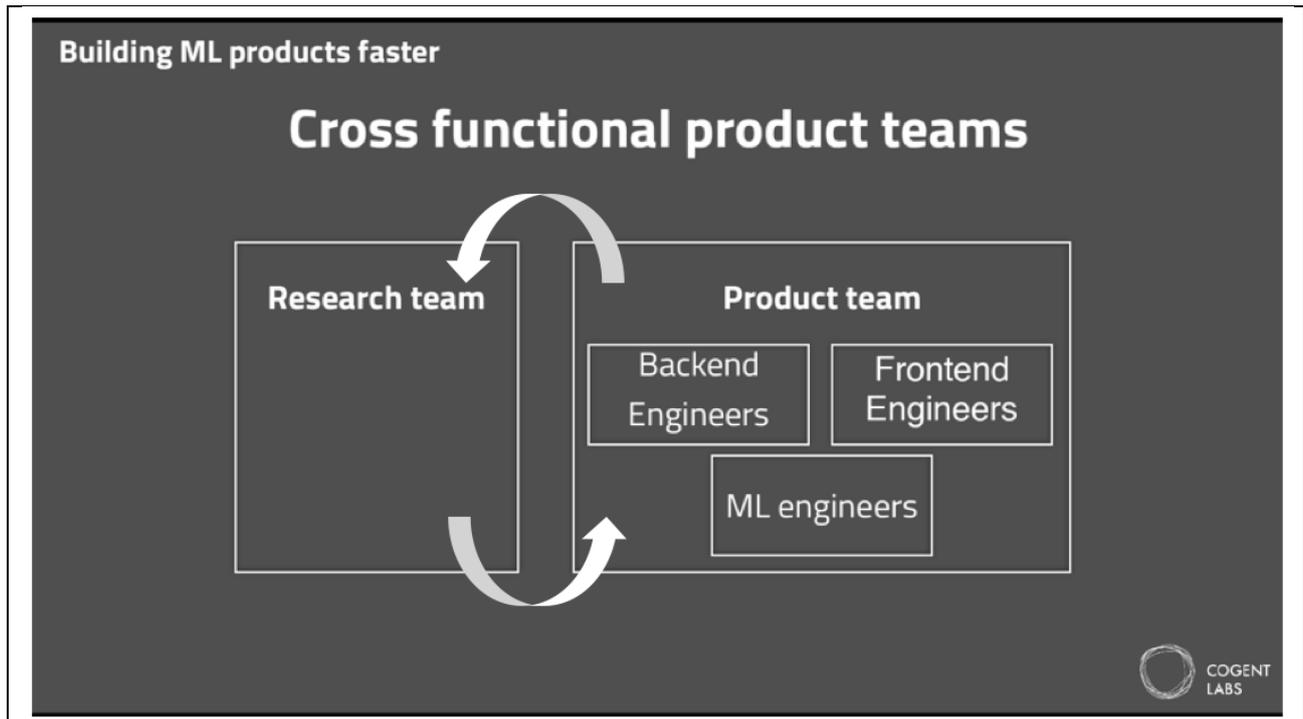
(Source: Malkin, 2018*)*

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SECTORAL AND FIRM-LEVEL DETERMINANTS OF PROFITABILITY: A MULTILEVEL APPROACH

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ABSTRACT

The paper aimed to contribute to the literature on the determinants of firm profitability, from the perspective of the Czech economy. We followed a multilevel/hierarchical approach towards the analysis of the sectoral and firm-level determinants of the profitability of companies operating in the Czech food processing industry during years 2005-2012 (622 Firms in 10 Sectors). We assessed an impact of industry (i.e. market concentration, sector growth rate and growth rate of imports) and firm-level characteristics (i.e. market share, firm age, firm size, number of employees, debt/equity ratio and short-term risk) on the return on assets (ROA). Surprisingly, there were no substantial differences between the separate models for industry and firm-level determinants and a combined one. We found a positive impact of market concentration and market share and a negative effect of age and risk-taking behaviour on a firm profitability. Based on these findings, managers in the Czech food and drink industry should pay more attention to the debt policy.

KEYWORDS: firm profitability; return on assets (ROA); industry and firm effects; multilevel analysis; Czech food and drink industry.

JEL CLASSIFICATION: L11, L66, D22

INTRODUCTION

In the current rapidly changing and global environment, quick response and adaptation to market conditions are considered to be the crucial determinants of entrepreneurial success. Business owners and managers need to very carefully study the factors that affect business performance to achieve maximisation of firm value and long-term profitability. We acknowledge there is large body of knowledge on factors impacting business performance (e.g. Hirsch *et al.*, 2014; Setiawan *et al.*, 2012; Lin *et al.*, 2014; Chaddad & Mondelli, 2013; Sauka, 2014; Daher & Le Saout, 2015; Bamiatzi *et al.*, 2016; Burger *et al.*, 2017; Adámek *et al.*, 2017; Blažková & Dvouletý, 2018a, 2018b). However, at the same time, there are still under-researched regions, where the empirical evidence is still scarce. One of these regional research gaps are countries of Central and Eastern Europe as pointed out recently by Kocsis & Major (2018), Gërguri-Rashiti *et al.* (2017), Davidova & Gorton (2017) or Giannakis & Bruggeman (2015). This study delivers empirical evidence to this discussion from the angle of the Czech enterprises.

In this study, we empirically focus on the analysis of the sectoral and firm-level determinants of the performance of companies operating in the Czech food-processing industry. Generally, the food and drink industry is considered as one of the most important economic branches in the European Union (Europe, Food Drink, 2016), which is also emphasised by researchers in the field of agribusiness, e.g. Zouaghi *et al.* (2017) or Tong *et al.* (2016). According to the Czech Statistical Office (2017), the food and drink industry generated 7.5% of value added of the whole manufacturing industry, and its share on the employment in the Czech Republic was 9.2% in 2016 that makes the industry important from both economic and social perspectives.

Theoretically, there are two contradictory concepts focused on the evaluation of firm-performance determinants. The first approach is based on organisation theory (Bain, 1968), which emphasises the structural (sectoral) characteristics of the industry and the second approach, known as resource-based view (Gabreath & Galvin, 2008), emphasises firm-specific factors of firm performance. As evidenced by numerous studies on this issue, both types of factors play a role in the explanation of firm performance variance. Although the sectoral determinants cannot be neglected (e.g. Blažková & Dvouletý, 2018b; Chaddad & Mondelli, 2013), the most variability of the firm performance is explained by the firm-level determinants (e.g. Goddard *et al.*, 2009; Hirsch & Schiefer, 2016).

Given the assumption that merging both types of determinants of firm performance in one analysis could provide us with different empirical findings and the fact that the hierarchical linear modelling is a relatively new technique in the Czech environment, we apply HLM/multilevel approach to firm-level data of the Czech food processing firms. Our goal is to estimate the impact of selected firm and sectoral determinants of profitability together. We assess the impact of industry characteristics (i.e. market concentration, sector growth rate and growth rate of imports) and the impact of firm characteristics (i.e. market share, firm age, firm size, number of employees, debt/equity and short-term risk) on the return on assets (*ROA*) indicator.

The structure of our paper is conventional. In the following section, we briefly introduce theoretical background of our study. Further, the obtained sample, collected variables, and our empirical approach are described. The next part is dedicated to the interpretation of the obtained results. The paper ends with conclusions summarising the main findings, implications, and avenues for future research.

1 THEORETICAL BACKGROUND

When it comes to the previous empirical evidence in the Czech Republic, Urbancová (2018) has studied the profitability of the companies in the Czech food industry. She concluded that there are substantial differences in profitability due to the organisational structure of the sector consisting of a large number of small and micro enterprises on the one hand and several dominating large companies on the other hand. Blažková and Dvouletý (2018b) have investigated the relative importance of sectoral and firm-specific effects on firm performance. Their results led to a conclusion corresponding with majority of studies on this issue conducted in Europe (e.g. Hirsch & Schiefer, 2016; Goddard *et al.*, 2009; Claver *et al.*, 2002) showing that the effects of firm-specific factors are more important (they explained around 50% of variability in firm performance) than the effects of sectoral factors (which explained only about 0.3% of variability in firm performance). Although other studies have separately investigated the role of firm-level determinants on firm performance (Blažková & Dvouletý, 2018a) and the role of sectoral variables affecting performance in the whole sector (Blažková & Dvouletý (2017a; 2017b), there is no study in the Czech environment that would combine both types of determinants (sectoral and firm) in one complex analysis.

Such an analysis, combining firm-level and sectoral determinants of profitability requires more sophisticated empirical approach than just a multivariate regression analysis. Scholars in the field

conduct studies based on more than one level of analysis most often with the help of hierarchical linear modelling (HLM) approach/multilevel analysis (e.g. Wendorf *et al.*, 2002; Huta *et al.*, 2014 or Hox *et al.*, 2017). Multilevel/hierarchical models have been gradually evolving since the second half of the 1980s, and have been increasingly used especially in sociological research (e.g. Liu *et al.*, 2010; Bernard, 2011; Shen *et al.*, 2014; Soukup, 2006), but also in economics (e.g. Ozkaya *et al.*, 2013; Hirsch *et al.*, 2014; Macher & Mayo, 2015; Bamiatzi *et al.*, 2016). This approach examines the relationships within and between the hierarchical levels of clustered data, making it more effective in detecting variations between variables at different levels better than other existing methods (Woltman *et al.*, 2012). Nevertheless, there are also other options that might be taken into account. According to Huta (2014), the most commonly used alternatives are Structural Equation Modeling (SEM) and Generalized Linear Model (GLM) based on repeat-measured variables, for empirical examples see, e.g. Choi & Lim (2017), Sivasubramaniam & Kara (2015), Hair *et al.* (2014), Mavrogiannis *et al.* (2008), Wisner (2003).

2 DATA AND METHODS

2.1 Sample and Data Sources

The empirical analysis is based on micro-level data for the Czech companies operating in the Czech food and drink industry. Data were drawn from the database MagnusWeb (Bisnode, 2017). We considered only firms with complete data across the full period under study, such as Hirsch et al. (2014). Therefore, the analysis was conducted for years 2005-2012, since data availability was best for this period. Firms with the main activity in any official 3-digit CZ-NACE food processing industry were considered, i.e. ten categories between CZ-NACE 101 and CZ-NACE 110 (namely CZ-NACE 101 Production, processing, preserving of meat and meat products; CZ-NACE 102 Processing and preserving of fish and fish products; CZ-NACE 103 Processing and preserving of fruit and vegetables; CZ-NACE 104 Manufacture of vegetable and animal oils and fats; CZ-NACE 105 Manufacture of dairy products; CZ-NACE 106 Manufacture of grain mill products, starches and starch products; CZ-NACE 107 Manufacture of bakery and farinaceous products; CZ-NACE 108 Manufacture of other food products; CZ-NACE 109 Manufacture of prepared animal feeds; CZ-NACE 110 Manufacture of beverages). Obtained data were screened for missing or extreme values, which resulted in the sample of 622 firms with full data in 2005-2012, i.e. the data set consisted of 4,976 observations across eight years and ten Czech food processing sectors, the number of firms included in the sample differs in particular sectors. Table 1 presents the allocation of firms to ten Czech food sectors within the population and within our data sample in 2012 to assess the representativeness of the sample (within each sector, firms are also divided into four size groups according to the number of employees, i.e. firms with 0-19, 20-49, 50-249 and with 250 and more employees).

To have information on total values for particular sectors, namely total sales and imports, we employed the data published by the Ministry of Agriculture of the Czech Republic (Ministry of Agriculture of the Czech Republic, 2008, 2015).

Table 1 **Structure of the Data Sample in 2012**

CZ-NACE		Population	Sample		CZ-NACE		Population	Sample	
		N	n	%			N	n	%
101	0-19	1,554	27	1.7	**106**	0-19	166	10	6.0
	20-49	91	31	34.1		20-49	22	10	45.5
	50-249	57	36	63.2		50-249	19	16	84.2
	250+	16	15	93.8		250+	0	0	x
	total	1,718	109	6.3		total	207	36	17.4
102	0-19	17	3	17.6	**107**	0-19	2,645	30	1.1
	20-49	4	2	50.0		20-49	205	36	17.6
	50-249	2	1	50.0		50-249	98	50	51.0
	250+	1	0	0.0		250+	24	16	66.7
	total	24	6	25.0		total	2,972	132	4.4
103	0-19	115	8	7.0	**108**	0-19	1,509	29	1.9
	20-49	15	4	26.7		20-49	58	26	44.8
	50-249	13	11	84.6		50-249	54	39	72.2
	250+	2	2	100.0		250+	9	9	100.0
	total	145	25	17.2		total	1,630	103	6.3
104	0-19	10	1	10.0	**109**	0-19	355	20	5.6
	20-49	3	2	66.7		20-49	20	16	80.0
	50-249	5	3	60.0		50-249	22	18	81.8
	250+	1	1	100.0		250+	5	5	100.0
	total	19	7	36.8		total	402	59	14.7
105	0-19	140	9	6.4	**110**	0-19	1,147	37	3.2
	20-49	9	4	44.4		20-49	29	21	72.4
	50-249	29	25	86.2		50-249	37	32	86.5
	250+	10	9	90.0		250+	9	8	88.9
	total	188	47	25.0		total	1,222	98	8.0

(*Source:* European Commission, 2016; Bisnode, 2016; authors' elaboration)

2.2 Definition of Variables

The data have two-level hierarchic structure – the level-1 corresponds to particular firms, and the level-2 corresponds to sectors, i.e. there are lower-level units (firm-level variables) nested within higher-level units (sector level variables). The dependent variable in models is operationalized by return on assets (ROA) indicator, which measures the firm's management ability to generate profits from the firm's assets (e.g. Brealey *et al.*, 2017), and belongs to the most commonly used measure of firm performance (Strouhal *et al.*, 2018; Rehman, 2017; Hult *et al.*, 2008; Richard *et al.*, 2009). All variables used in the analysis as determinants of profitability were selected based on the availability of data and based on the previous literature (e.g. Brealey *et al.*, 2017; Hirsch *et al.*, 2014; Blažková & Dvouletý, 2017a, 2017b, 2018a). Since the firm performance is influenced by the competitive environment on the market, market concentration ratio ($CR4_j$) was used to reflect the level of imperfect competition on the Czech food market. The size of the Czech food market and the demand growth is represented by the growth of sales indicator ($GROWTH\_SALES_j$), impact of foreign competition reflects the growth of imports ($GROWTH\_IMP_j$). According to previous research mentioned above, main firm-specific determinants

of profitability are connected with the firm age (AGE_{ij}), capital structure (in our analysis evaluated based on indebtedness, i.e. $DEBT\_EQUITY_{ij}$ and $SHORT\_RISK_{ij}$), and size of the company (in our study represented by the indicators of market share (MS_{ij}), firm size ($SIZE_{ij}$) and number of employees (NUM_EMP_{ij})). The list of variables at the appropriate hierarchical levels is presented in Table 2, and the descriptive statistics of all variables are shown in Table 3.

Table 2 **Variables at Particular Hierarchical Levels**

Hierarchical Level	Variables	Calculation of the Variable
Level-2 (Sector Level)	Market concentration ($CR4_j$)	$\sum_{i=1}^{4} MS_{ij}$
	Growth of sales ($GROWTH\_SALES_j$)	$\dfrac{Sales_{jt} - Sales_{j,t-1}}{Sales_{j,t-1}}$
	Growth of imports ($GROWTH\_IMP_j$)	$\dfrac{Imports_{jt} - Imports_{j,t-1}}{Imports_{j,t-1}}$
Level-1 (Firm Level)	Market share (MS_{ij})	$\dfrac{Sales_i}{Sales_j}$
	Firm age (AGE_{ij})	number of years the firm operates on the market
	Firm size ($SIZE_{ij}$)	logarithm of total assets
	Number of employees (NUM_EMP_{ij})	four categories according to the number of employees (0-19, 20-49, 50-249 and 250 and more employees)
	Debt/Equity ratio ($DEBT\_EQUITY_{ij}$)	$\dfrac{Total\ Liabilities_{ij}}{Shareholders'Equity_{ij}}$
	Short-run risk ($SHORT\_RISK_{ij}$)	$\dfrac{Short\text{-}term\ Liabilities_{ij}}{Current\ Assets_{ij}}$
	ROA*	$ROA_i = \dfrac{EBIT_i}{Total\ Assets_i}$
Note: *j* denotes sectors, *i* denotes firms; * outcome variable		

(*Source*: authors' elaboration; financial indicators are defined based on Brealey *et al.*, 2017)

Table 3 **Descriptive Statistics**

Variable	Mean	Median	Standard Deviation	Minimum	Maximum	Observations
Level-1						
ROA	0.06	0.05	0.09	-0.30	0.55	4,976
MS	0.01	0.00	0.02	0.00	0.24	4,976
AGE	13.52	14.96	4.00	3.76	18.89	4,976
SIZE	10.89	10.95	1.85	5.05	16.69	4,976
NUM_EMP	2.30	2.00	0.99	1.00	4.00	4,976
DEBT_EQUITY	12.32	1.32	63.92	0.02	1006.97	4,976
SHORT_RISK	0.85	0.71	0.80	0.02	10.66	4,976
Level-2						
CR4	0.39	0.35	0.15	0.21	0.71	80
GROWTH_SALES	0.03	0.00	0.05	-0.01	0.16	80
GROWTH_IMP	0.08	0.08	0.03	0.04	0.15	80

(*Source*: HLM7; authors' elaboration)

2.3 Empirical Approach

In the following analysis, we assess the impact of industry characteristics (i.e. market concentration, sector growth rate and growth rate of imports) and the impact of firm characteristics (i.e. market share, firm age, firm size, number of employees, short-term risk and long-term risk) on the return on assets (ROA) indicator. The effects of sectoral characteristics (Level-2) and firm characteristics (Level-1) on ROA were estimated with the use of hierarchical linear modelling (HLM). The models were estimated in the software HLM7 – Hierarchical Linear and Nonlinear Modelling. For a detailed description of the logic, rationale and parameter estimation approaches behind hierarchical linear models see for example Bamiatzi *et al.* (2016), Raudenbush & Bryk (2002) or Woltman *et al.* (2012).

As an initial step of HLM, we need to assess the differences in explained variance concerning both levels of analysis to see if we have selected suitable levels. In line with Soukup (2006), we have calculated Intra-Class Correlation Coefficient (ICC):

$$ICC = \frac{\sigma_u^2}{\sigma_e^2 + \sigma_u^2} \qquad\qquad (1)$$

where σ_u – denotes variance at the second level,
        σ_e – denotes variance at the first level.

Values of calculated ICC indicated that 15.5% of the variability of ROA is attributed to differences between sectors and 84.5% to differences between firms, which is in line with the previous research suggesting the greater importance of firm-specific determinants of performance in comparison with the sectoral variables (Blažková & Dvouletý, 2018b).

The next step of the analysis was to explain the differences between firms (level 1) while respecting the information that companies are from different sectors, i.e. respecting the existence of level 2. The relationships between particular explanatory level-1 variables (see Table 2) and the outcome variable (ROA) were analysed. In order words, for each explanatory level-1 variable, we have estimated a regression coefficient (including its statistical significance) that helps us to understand the relationship between the firm-level determinants (level-1 variables) and the outcome variable of interest (ROA). Then, we did the same for the sectoral determinants (level-2 variables). Finally, we have estimated a combined model with both firm-level (level-1 variables) and sectoral (level-2 variables) to understand the merged influence of both types of determinants on ROA. The most suitable model for our data was specified based on the values of different information criteria, such as Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC) and the logarithm of the likelihood function. Additionally, we have also checked for the level of collinearity, and no multicollinearity was detected in our estimates. The final model was found to be statistically significant, and all assumptions of HLM (see e.g. Raudenbush & Bryk, 2002) were met (including independent and normal distribution of residuals and independence of level-related errors and error terms). Thus we might proceed towards the interpretation of all obtained estimates.

3 RESULTS AND DISCUSSION

As we have described our approach in the previous section, we first present the separate estimates for firm-level (i.e. market share, firm age, firm size, number of employees, debt/equity ratio and short-term risk) and sectoral determinants (i.e. market concentration, sector growth rate and growth rate of imports) of firm profitability operationalized by ROA in Table 4. In the second step, we merged both levels of determinants into a final reduced model that is presented in Table 5.

3.1 Firm and Sectoral Determinants of Profitability

3.1.1 Firm-level Determinants

As seen in Table 4, the analysis proved the statistically significant positive impact of the market share (*MS*) on ROA. In general, the market share assesses the competitive position of the firm, as the growth of the market share of a firm usually leads to the growth of the firm's profitability (Farris *et al.*, 2010). This idea is based on the assumption that costs are decreasing as a result of easier access to cheaper resources, companies also more often differentiate their products, and because of their better competitive position and greater market power, they can afford to set higher prices than competitors. Moreover, they can also use economies of scale due to their size. Blažková and Dvouletý (2018a) also mention that the administrative burdens within the complex EU legislation regarding food safety, additives, packaging, and labelling put heavier administrative burdens on smaller firms than on large-scale firms. In the Czech agribusiness environment, food businesses are subject to strong pressure from the downstream vertical stage, i.e. trade, which is significantly concentrated (as documented by Blažková, 2016); therefore, the larger market share of the food company is an important factor that positively affects the profitability of firms in the Czech food industry.

Firm age can generally explain the effects of the business life cycle. It is usually expected that the costs will decrease with the increasing age of the company as a result of the learning effect, which will lead to higher profits for older and "more mature" companies (Ericson & Pakes, 1995). On the other hand, ageing may lead to the loss of flexibility within the rapidly changing environment, to the organisational rigidity, and slower growth, stated by Sørensen & Stuart (2000) and Hirsch *et al.* (2014). Therefore, it is not entirely clear whether ageing helps firms to thrive, or rather negatively influences their performance. The findings of our analysis confirm the negative relationship between firm age (*AGE*) and ROA in the Czech food processing industry, which is in line with the findings of Hirsch *et al.* (2014).

The results in Table 4 show that the size of the company has a positive impact on the performance of the Czech food processing firms in the observed period, which is confirmed by both size (*SIZE*) and employees category (*NUM_EMP*). Since price competition is one of the main competitive strategies among food processors, achieving economies of scale due to sufficient firm size seems to be a significant factor of the firm´s profitability. Also, large firms tend to be more successful on the market due to the prevailing market power of highly concentrated retail, as also found by Blažková & Dvouletý (2018a).

Two variables were used to assess the indebtedness and risk behaviour of the Czech food enterprises – *DEBT_EQUITY* and *SHORT_RISK*, which confirmed the negative relationship between risk and profitability in the Czech food industry. The similar findings were also obtained in studies by Hirsch *et al.* (2014), Asimakopoulos *et al.* (2009) or Blažková & Dvouletý (2018a).

3.1.2 Sectoral Determinants

The sectoral market concentration can generally be expected to have a significant impact on firm profitability. Companies in highly concentrated industries may have the ability to prevent entry into the industry, leading to higher profits (Newmark, 2004; Setiawan *et al.*, 2012; Hirsch *et al.*, 2014). Also, better bargaining positions of large food firms can be expected due to the highly concentrated downstream vertical level, i.e. retail (Blažková, 2016). The analysis confirmed the significant effect of market concentration (*CR4*) on profitability (*ROA*) of the Czech food enterprises.

The results in Table 4 show that the increase in growth of the sector (measured by *GROWTH_SALES*) led to higher profitability of the Czech food processing firms. If the industry

grows due to the growth in demand, companies in the industry can achieve higher profits by increasing the volume of output sold or higher prices, so higher profitability can be expected.

As seen in Table 4, with the increasing rate of imports (*IMP*), the negative impact on the profitability (*ROA*) of domestic enterprises is evident, as competition on the market and the downward pressure on prices are increasing.

Table 4 **Firm and sector determinants of profitability** (Dependent variable is ROA)

Independent Variable	Coefficient	Standard Error
Constant	0.0597***	(0.0120)
Level-1 (Firm-level Determinants)		
MS	0.7787***	(0.1487)
AGE	-0.0022***	(0.0008)
SIZE	0.0048**	(0.0018)
NUM_EMP	0.0088***	(0.0033)
DEBT_EQUITY	-0.0002***	(0.0001)
SHORT_RISK	-0.0262***	(0.0041)
Level-2 (Sectoral Determinants)		
CR4	0.3510***	(0.0848)
GROWTH_SALES	1.0687***	(0.2409)
GROWTH_IMP	-0.9121***	(0.2036)
Note: *** stat. significance at 1% level, ** stat. significance at 5%, * stat. significance at 10%. Number of Firms = 622 (i.e. 4,976 Observations), Number of Sectors = 10, (i.e. 80 Observations).		

(*Source*: HLM7; authors' elaboration)

3.2 Final Reduced Model including Merged Determinants of Profitability

Finally, we have estimated a combined model with both firm-level (level-1) variables and sectoral (level-2) variables. The model is presented in Table 5 below. The information criteria drove the selection process, and we have ended up with the four firm-level variables (market share, firm age, short-term risk and debt/equity ratio) and one sectoral variable (market concentration). The previous section showed that all obtained estimates have an economic logic, and so do the findings obtained from the merged model have. Initially, we do not see large differences in comparison with the previously presented (separate) models.

Table 5 **A Combined model of Firm and Sectoral determinants of Profitability** (Dependent variable is ROA)

Independent Variable	Coefficient	Standard Error
Constant	0.0648***	(0.0073)
CR4	0.3410***	(0.0861)
MS	0.8395***	(0.1427)
AGE	-0.0025***	(0.0008)
SHORT_RISK	-0.0238***	(0.0041)
DEBT_EQUITY	-0.0002***	(0.0001)
Note: *** stat. significance at 1% level, ** stat. significance at 5%, * stat. significance at 10%. Number of		

Firms = 622 (i.e.: 4,976 Observations), Number of Sectors = 10 (i.e.: 80 Observations).

(*Source*: HLM7; authors' elaboration)

The results show the positive impact of the sectoral market concentration (*CR4*) on *ROA*. As mentioned above, there are more possible explanations for this observation. One may think of a better bargaining position with customers, the use of economies of scale, better access to capital enabling large companies to use better and new technologies, product diversification and easier deployment of innovations.

From the firm-level perspective, market share (*MS*), indicates the idea mentioned above that more concentrated industry can achieve higher profitability. The combined model also confirmed the negative impact of firm age (*AGE*) on *ROA* – younger firms are likely to respond faster to changes in demand, which may be a more important factor than experience and savings due to the "learning" effect of older firms in the Czech food processing industry.

In spite of the risk theory (Roeser, 2012; Tsai & Luan, 2016), which suggests that higher-risk companies should achieve higher profits on average, the variables characterizing the risk, both short-term risk and debt/equity ratio (*SHORT_RISK* and *DEBT_EQUITY*), in the estimated model have a statistically significant negative impact on *ROA* – high-risk financing of activities led to lower profitability of food companies in the Czech Republic during the analysed period.

CONCLUSIONS

The paper aimed to contribute to ongoing research on the determinants of the firm profitability, from the perspective of an under-researched Czech economy. The previous researchers have turned attention towards the role of country, industry and firm-level determinants of profitability solely, however not many scholars have studied the impact of these determinants together. In this study, we have employed a multilevel/hierarchical approach towards the analysis of the sectoral and firm-level determinants of the performance of companies operating in the Czech food processing industry during years 2005-2012. Our goal was to investigate the impact of selected firm and sectoral determinants of profitability together. Particularly, we assessed the impact of industry characteristics (i.e. market concentration, sector growth rate and growth rate of imports) and the impact of firm characteristics (i.e. market share, firm age, firm size, number of employees, short-term risk and debt/equity ratio) on the return on assets (*ROA*) indicator.

We have separately analysed both types of effects, and then we have merged both levels of variables in a one multilevel-model. Surprisingly, there were no substantial differences between separate models and a merged one. The results showed that market concentration had during the analysed period positive impact on the firm-level profitability. This confirms the assumption that firms in high-concentrated sectors may have better opportunities to prevent new firms from entering the industry, leading to higher profits, as well as better negotiating position for food processors with the highly concentrated retail. Once we had a look at the firm-level determinants of profitability, we found a positive relationship between the company's market share and profitability which may be due to factors such as the use of economies of scale, better access to capital for larger firms, more qualified management or better market position when dealing with business partners. It follows from the analysis that younger food firms reached higher profitability in the monitored period, which is likely due to their ability respond quickly to changing market conditions. We have also found a negative relationship between the risk-taking behaviour (both short-term and long-term) and profitability.

The presented analysis offers implications for both entrepreneurs and policymakers. From the managerial viewpoint, agribusiness firms should base their strategies on differentiation from

competitors and seek market opportunities, which are important means of achieving higher market share and profitability. Due to the dynamic development of the global environment, not only experience but especially know-how and flexibility are important characteristics of success, which emphasises the need to employ high-skilled managers and employees. We have also found the negative impact of indebtedness on the firm profitability of the Czech food processing firms in the monitored period. Therefore, managers should pay attention to the debt policy, since high indebtedness worsens the competitive position of the Czech food processing firms on the market and contributes to a decline in their credibility. From the viewpoint of economic policy, special attention should be paid to market power assessment, merger approval both in the food processing industry and in the retail sector, and valuation of price relations within commodity verticals, i.e. between farmers, processors and retail, in order to ensure a competitive environment within the whole agribusiness sector.

Our analysis also provides a basis for at least two propositions for further empirical research focused on firm performance and its determinants. The first extension of our research should be the investigation of further firm-level determinants of profitability, such as e.g. R&D activities or expenditures on advertising. The second recommendation for future research is to include more hierarchical levels (such as e.g. country level) in the analysis. However, the main issue we would like to mention is the importance of data availability both at the firm and sectoral level, which is a crucial limitation for research community when conducting comprehensive hierarchical analyses such as this one.

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FEAR OF FAILURE AND ENTREPRENEURIAL RISK PERCEPTION

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ABSTRACT

The present study provides an understanding of the role of fear of failure in entrepreneurial decision making by examining the mediating role of appraisal dimensions through the study of the impact of fear (state and trait) on entrepreneurial risk perception and using the cognitive-motivational-relational process and the Appraisal Tendencies Framework as based theories. Using a sample of students, we confirmed that trait fear is significantly related with higher entrepreneurial risk perception and this relation is mediated by cognitive appraisal dimensions especially the certainty theme. The same relationship is not confirmed for the state fear, even the statistical difference between students in entrepreneurial risk perception due to state fear condition.

INTRODUCTION

Greater numbers of countries encourage entrepreneurship because it enhances economic and social development by employment creation and producing innovation. However, many factors are considered as impediment to entrepreneurship as insufficiency of feasible project idea, fear of failure, insufficiency of personal confidence, lack of social support and poor financial grounding.

Knowing more about barriers to entrepreneurship becomes necessary, especially in Tunisian context where entrepreneurship is at the beginning. We focus attention in this study on only one barrier to new venture creation: the fear of failure, because many empirical and theoretical researches shed some lights on this impediment implying its importance in entrepreneurship.

Because empirical research studying the relationship between emotion and entrepreneurial judgment are limited (Foo, 2009; Welpe *et al.*, 2012; Li, 2011), we try to expand the existing literature and on the basis of the appraisal theory of emotion (Lazarus, 1991) and the Appraisal Tendencies Framework (Lerner & Keltner, 2000) we attempt to explore how fear affects entrepreneurial risk perception. Particularly, because to our knowledge, no empirical entrepreneurship research have examined the relationship among fear of failure and entrepreneurial risk perception considering the mediation effect of controllability and certainty in Tunisian context.

According to (Cacciotti *et al.*, 2014), studies of fear of failure and entrepreneurship can be separated in two groups on the basis of definition of fear of failure. First group explains fear of failure as negative

emotion that issued from perception of menace in the environment. This means that fear represents experience derived from environmental influence (Li, 2011; Patzelt & Shepherd, 2011). Second group defines fear of failure as risk aversion and it is considered as personal trait (Hessels *et al.*, 2011; Arenius & Minniti, 2005).

As well as, there are many researches that have considered fear of failure as a motivation and not a barrier (Cacciotti *et al.*, 2016). Thereby, fear of fail is also a motivation to entrepreneurial action because fear is linked to the missing of an opportunity that accelerates venture process (Dickson & Giglierano, 1986; Venkataraman, 2002).

Indeed, emotion is essential for judgment and general decision making and especially, fear has impact on cognitive reaction of individuals (Damasio, 1994). In entrepreneurial field, emotions play also a role in explaining entrepreneurial behavior.

Taking the experience of fear of failure as an example of emotion because is the subject of this study, the appraisal theory explains this affect by exhibiting that fear of failure begins by an evaluation of the menace of environmental mutation that influences the individual personal ability to achieve his object which induces an emotion of fear of failure (Conroy, 2001). Thereby, fear is attached with high uncertainty and a strong attribution of situational control which means that situation is controlled by circumstances (Smith & Ellsworth, 1985; Lerner & Keltner, 2000).

Following the studies of (Lerner & Keltner, 2001) and those of (Foo, 2000), the purpose of this study is to examine the impact of fear on entrepreneurial risk perception taking into account the mediation effects of certainty and controllability. We empirically studied three research questions: Do fear lowered certainty and controllability? Are changes in controllability and certainty related to entrepreneurial risk perception? And are the effects of fear on entrepreneurial risk perception mediated by the appraisal dimensions of certainty and control?

The theoretical background is presented in next section. The procedure is then displayed. Following that section the results of the study are discussed. The final sections displayed ways for future research, extended practical implications of fear of failure to entrepreneurship and conclusion.

1 THEORETICAL BASES

1.1 The Appraisal Theory of Emotion

According to appraisal theory of emotion called also cognitive-motivational-relational process, the emotion is induced after a subjective assessment of an event by the individual. This emotion affects decisions because, once induced, affects change the profoundness of information processing (Lazarus, 1991b).

The appraisal process is concretized on two phases: a primary appraisal induced on the moment of being in touch with the triggering event, the subject assessed the importance of this event compared to his feeling of satisfaction, (Lazarus, 1991b), a secondary appraisal that concretize the means used by an individual to cope to the situation induced by the event (Lazarus, 1991b).

According to Smith & Ellsworth, 1985, cognitive appraisal of emotional experience is concretized by six dimensions: pleasantness, anticipated effort, certainty, attentional activity, responsibility and control. As stated by these authors, emotions changes along these factors revealing an important association between the evaluation of situations and the emotional state. Among these predictors, certainty and control affects risk (Lerner & Keltner, 2001).

Appraisal theory of emotion exhibited many aspects associated to fear of failure such anxiety and the trait and state of fear and the cognitive and affective aspects of fear. Fear of failure is employed to express the assessment of an ambiguous menace that induces both fear and anxiety (Barlow, 2000; Lazarus, 1991, 1999). In this context, fear and anxiety are considered as indistinguishable expressions (Cacciotti, 2014).

The appraisal theory of emotion put the accent on the importance to specify the fear of failure as a state and not only as a trait. While the trait is a relatively permanent disposition to experience fear of failure, the state is the actual experience of the phenomenon and making attention to the temporary condition induced in reaction to personal aspects and environmental characteristics (Cacciotti, 2014).

Fear of failure involves both cognition and affect. When a situational transformation is assessed, people evaluate the importance of such change for their objects. The cognitive appraisal is then pursued by the emotional experience whose intensity and valence are adjusted by the cognitive judgment (Lazarus, 1991b). Individual and environmental features are similarly important in recognizing the experience of fear of failure and cognitive processes illustrate aroused comportment of fearful person (Cacciotti *et al.*, 2014).

1.2 From the valence theory to the Appraisal Tendencies Framework

Valence theory of emotion and Appraisal Tendencies Framework are two theories that examined the relationship between emotion and risk perception. Consistent with the valence theory, emotions of the same valence conduce to the same judgment and decision making. Thereby, positive affects lead to optimistic choices and negative affects conduct to pessimistic judgment (Kavanagh & Brower, 1985).

According to studies of affect judgment, it exist two types of emotions: integral and incidental emotions. For the first, the emotional experience lived by the person is related to her current decision, for the second, the emotional experience lived by a person is unrelated to the present judgment.

Schwarz & Clore, 1983 suggested a robust and stimulating impact of valence factor on judgment and decision making. However, valence cannot clarify all effects of emotion on judgment and choice because emotions of the same valence varied in important manners (Lerner & Keltner, 2014).

Lerner & Keltner, 2000 advanced a model of emotion-specific influences on judgment and choice. The model is established on two theoretical approaches: cognitive-appraisal theories and functional theories of emotion and it is called the Appraisal Tendencies Framework (ATF) revealing that affects of the same valence can exert contradictory effects on judgments and decisions.

According to Lerner & Keltner, 2014, The ATF hypotheses are: emotions are attached with cognitive appraisal patterns (Lazarus, 1991, Smith & Ellsworth, 1985), affects triggering many categories of responses (physiological, behavioral, experiential, and communication) that conduct the person to take on problems and opportunities rapidly (Frijda, 1988), emotions have motivational aspects depended on emotion's intensities and its qualitative characteristics.

Lerner & Keltner, 2001 examined the influence of fear and anger (two emotions of the same valence) on risk perception. The findings indicated that fearful people are usually implicated in risk aversive behaviors. Thus people who experiencing fear, are agreeable to approve more risk. The results proved that investors having emotions of fear estimate risk pessimistically. In contrast, angry people predict risk optimistically.

1.3 Fear of failure in entrepreneurship

By examining fear of failure in many entrepreneurial studies, Cacciotti *et al.*, 2016 classified theses researches on economic-based view and a psychology-based view of fear of failure in entrepreneurship. On economic-based view, fear of failure is generally measured by a single item "fear of failure would

prevent me from starting a business". On psychology-based view (that expressed social psychology view and purely psychology view), fear of failure is measured by The Positive and Negative Affect Schedule (PANAS) scale (Watson *et al.*, 1988), and the Performance Failure Appraisal Inventory (PFAI) (Conroy, 2002). According to Cacciotti *et al.*, 2016, these measures of fear of failure negatively affect the entrepreneurial action. In other words, fear of failure is a threat to entrepreneurial behavior that contradicts the fact that fear of fail is also a motivation to entrepreneurial action (Dickson & Giglierano 1986; Venkataraman, 2002).

Cacciotti *et al.*, 2016 characterized fear of fail as static measures that are not suitable to entrepreneurship. As a consequence of this shortcoming, Cacciotti *et al.*, 2016 re-conceptualized the fear of failure construct by taking into account a mix of cognition, affect and actions to hold the dynamic nature of entrepreneurial domain. The dimensions of fear of failure suggested by Cacciotti *et al.*, 2016 are: sources of fear of failure (financial security, personal ability, ability to finance the venture, potential of the idea, social esteem, venture ability to extend and opportunity cost), affective arousal (negative affect and positive affect), behavioral responses (inhibition and motivation), temporal dynamics (repression, commitment and learning).

Hessels *et al.*, 2011 advanced that fear of failure is associated to risk aversion. Other authors considered fear of failure as negative affect deduced from the apprehension of environmental menace (Welpe *et al.* 2012; Li, 2011). In other words, fear is designated in terms of individual characteristics and it is considered as an emotion that differentiates one person from another. Fear is also identified as an emotion that is perceived as the consequence of environmental signs, and it is related to some psychological and behavioral issues (Cacciotti & Hayton, 2014).

1.4 The entrepreneurial risk perception

Risk perception is a decision maker's evaluation of the risk essential in a specific case (Sitkin & Pablo, 1992). This proposes that people may diverge about the level of perceived risk in a decision alternative and, depending on such discrepancy, may vary in their judgment (Mullins & Forlani, 2005).

Entrepreneurial risk is interpreted by Dickson & Giglierano, 1986 as the ability to respond rapidly on an unproven opportunity (sinking the boat), or the ability to remain lengthy before responding (missing the boat). In accordance with the same authors, sinking the boat is the probability that a new project will be unable to attain acceptable sales, and missing the boat is the probability that a very important opportunity will be ignored, rejected, or lost.

According to March & Shapira, 1987, the core of entrepreneurial risk is the likelihood and magnitude of risk. The likelihood feature of risk corresponds to the probability that a new project will attain a determined level of losses or profits. The magnitude feature of risk is the size of losing.

Entrepreneurs are ready to evaluate venture situations more positively and to identify opportunity where other identifies less chance to gain (Palich & Bagby, 1995). So, entrepreneurs try to check opportunity that others do not because they simply see such opportunity in another way.

Risk propensity is the person's disposition to take or avoid risk (Sitkin & Pablo, 1992; Mac Crimmon & Wehrung, 1990). Consistent with Krueger & Dickson, 1994, entrepreneurs with high risk propensities provide little importance to the likelihood of effectuating a loss and much importance to the chance of gains.

Forlani & Mullins, 2000 examined the influence of risk perception and risk propensities on entrepreneurs' risky choice decisions. The authors proposed a riskier venture choice scale. The perception of new venture risk is driven by: the level of investment, the variability in the anticipated outcomes and potential losses.

Forlani & Mullins, 2000 proposed four scenarios of new venture: green venture characterized by high variability and hazard (is the most risky venture), purple venture characterized by low variability and hazard (classified the third venture on risk terms), yellow venture characterized by high variability and low hazard (classified the second venture on risk terms) and white venture characterized by low variability and hazard (classified the fourth venture on risk terms).

Forlani & Mullins, 2000 suggest that entrepreneurial preferences are affected by the risks, the estimated outcomes in each venture, the entrepreneurs diverging perceptions of those risks, and variation in their personal propensities to take risks. Forlani & Mullins, 2000 continued their interpretation that high magnitude of hazard did not discourage entrepreneurs from selecting ventures with high magnitude of profit, but, ventures having high level of variability were less disposed to be selected. By removing uncertainty and reducing variability in anticipated outcomes, the entrepreneurs will decide to carry on the venture.

2 AIM AND METHODOLOGICAL BASES

To test our hypotheses, we applied state fear of failure and inductive technique to assign fear induction of participants (Lerner & Keltner, 2000). We prevailed fear moods in participants and requested them to ascertain anticipated outcomes.

2.1 Hypotheses

Remembering that, the purpose of the study, is to examine the impact of fear (state and trait fear) on entrepreneurial risk perception, taking into account, the mediation effects of certainty and controllability. Eight hypotheses are generated from this purpose.

H1: Scores on uncontrollability will be significantly higher for fear-induced individuals than for trait fear participants.
H2: Scores on uncertainty will be significantly higher for fear-induced individuals than for trait fear participants.
H3: Uncertainty and uncontrollability will be significantly linked with entrepreneurial risk perception.
H4: State fear will be significantly linked with entrepreneurial risk perception.
H5: Trait fear will be significantly linked with entrepreneurial risk perception.
H6: The relationship between state fear and entrepreneurial risk perception is entirely mediated by uncontrollability and uncertainty.
H7: The relationship between trait fear and entrepreneurial risk perception is entirely mediated by uncontrollability and uncertainty.
H8: State and trait fear produce similar effect on entrepreneurial risk perception.

2.2 Statistical methods

A one-way multivariate analysis of variance (MANCOVA) was used to analyze our data and test the first two hypotheses. Especially, we accomplished an analysis of variance with state and trait fear condition as the independent variables, entrepreneurial risk perception, and appraisal tendencies as the dependent variables and scores of trait fear from PFAI and state fear related items from PANAS as covariates.

A structural equation model was used to examine the direct and indirect effects indicated in hypotheses 3-7 are tested, first by regressing the entrepreneurial risk perception (dependant variable) on uncertainty and uncontrollability (hypothesis 3), second by regressing uncontrollability and uncertainty on the state and trait fear (the independent variables). The third regression investigates the influence of state and

trait fear on entrepreneurial risk perception (hypotheses 4 and 5). A fourth model regressing entrepreneurial risk perception on the state and trait fear and the mediators (hypotheses 6 and 7).

If the impact of fear on entrepreneurial risk perception will be no significant when uncontrollability and uncertainty are included in the fourth model, the full mediation effect is supported. But if the effect of the independent variable decreases, but stills significant after adding mediators, partial mediation is verified.

2.3 Participants

This study took place at University of Carthage, Bizerte State. Data was collected on February 2018. 77 students accepted to respond to questionnaire. After removing 14 incomplete questionnaires, we were departed with a remaining participants pool of 63 undergraduate students (54 females and 09 males) joined up in entrepreneurship course. Demographic and general information were included in the questionnaire. The participants in the sample are varied between 19 and 25 years of age, with mean of 21.08 years (SD = 1.112). A majority of the respondents were computer science majors (58.7%) and the remaining participants were biology majors (41.3%). Ethnicities were also taken, students of Tunisian ethnicity were coded as 1, and students of Mauritanian ethnicity were coded as 0. The majority of participants are Tunisians (95.2%).

2.4 Materials

Four research instruments were used for the study, which includes: Performance Failure Appraisal Inventory (PFAI) scale developed by Conroy *et al.*, 2002, The Positive and Negative Affect Schedule (PANAS) scale of Watson *et al.*, 1988, controllability and certainty scales jointly developed by Smith & Ellsworth, 1985, entrepreneurial risk perception and risk propensity used by Forlani & Mullin, 2000 and adjusted by Foo, 2009. The instruments were reported to have high validity. The participants completed the Positive and Negative Affect Schedule (PANAS) scale then the scenarios of evaluation of entrepreneurial risk perception and the controllability and certainty variables and finally they evaluated the trait fear scale of Performance Failure Appraisal Inventory (PFAI).

Fear induction: Thirty eight students were appointed to a fear induction. In accordance with the induction emotion proceeded by Lerner & Keltner, 2001, students answered two induction questions. The first question was to illustrate three to five things that make students fearful. In the second question students illustrated with detail one item from the first question so that somebody reading the illustration becomes afraid just from learning about the situation.

After the induction, students completed the PANAS scale. The other twenty five students completed the same questionnaire without answering the two open-ended questions. So, state fear condition variable takes value 1 for induced fear participants and value 2 for no induced fear participants.

State fear: From the Positive and Negative Affect scale (PANAS) of Watson *et al.*, 1988, we used only fear related items (scared, nervous and afraid) to evaluate state fear by combining them into one factor (Lerner & Keltner, 2001). The psychometric quality of state fear scale is 0.667. If we remove the nervous item, the scale reliability will be 0.851.

Trait Fear: To evaluate trait fear, we used a 25-items global scale and five subscales namely, the fear of experiencing shame and embarrassment including 7 items (items: 10, 15, 18, 20, 22, 24, 25), the fear of devaluing one's self-esteem involving 4 items (items: 1, 4, 7, 16), the fear of having an uncertain future comprising 4 items (items: 2, 5, 8, 12), the fear of important others losing interest including 5 items (items: 11, 13, 17, 21, 23), and the fear of upsetting important others involving 5 items (items: 3, 6, 9, 14. 19).

The psychometric qualities of the PFAI scales have been examined in a great number of studies, in Jordan for instance by Alkhazaleh & Mahasneh, 2016 and in Turkish by Khahraman & Sungur, 2016 and they have demonstrated strong internal consistency. The short version of the PFAI that included 5 items (items: 7, 8, 11, 19, 24) was demonstrated to be also a valid and reliable measure of fear of failure.

The internal consistency reliabilities were as follows: 0.723 for the fear of experiencing shame and embarrassment, 0.571 for the fear of devaluing one's self-esteem, 0.414 for the fear of having an uncertain future, 0.712 for the fear of important others losing interest, and 0.638 for the fear of upsetting important others. Cronbach's alpha coefficient was 0.880 for PFAI scale in the present sample.

Appraisal dimensions: many studies investigated the important role of control in interpreting subjective experiences (Russel, 1978). An event can be controlled by a situation, by another person or by a person. According to Smith & Ellsworth, 1985, fear is defined by situational control and uncertainty; they added also that an unpredictable event needs more attention and certainty than a predictable event. These findings are confirmed also by Lerner & Keltner, 2001. The Cronbach-α results were 0.586 for certainty and 0.338 for controllability.

Entrepreneurial risk perception: the measure of entrepreneurial risk perception used by Forlani & Mullin, 2000 and adjusted by Foo, 2009 was employed in the present study. Students were displayed with a scenario that demanded them to suppose that they were about to attempt a new venture and they were about to assess the level of risk related with this scenario. The estimated outcomes for this scenario are 5 million. The new venture have high variability (There is a 30% chance of being under target by $5 million, a 40% chance of meeting target ROI and a 30% chance of going over target by $5 million), and low hazard (possible outcomes 5 million over or under target). So the new venture is considered as risky.

The students look at the investment choice and they had to exhibit the amount of entrepreneurial risk perception on a 3, 7-point items scale. The reliability of perception risk scale is mentioned by an alpha of 0.924.

Risk preferences: the second dependent variable is risk preference (risk propensity) that consisted to demand students to mention which venture they would select. The risk propensity is a general tendency to take or avoid risk in a decision situation that combining five items. Risk-prone entrepreneurs give less importance to the probability of obtaining a loss and more importance to the chance of gains (Mullin & Forlani, 2005). The reliability of risk preferences scale is mentioned by an alpha of 0.616. The factor reflecting risk preference is the sum of the five items.

3 RESULTS

3.1 Descriptive statistics

Table 1 exhibits the standard deviations, means, and correlations between the variables. Correlation tests were accomplished on the entrepreneurial risk perception, uncontrollability, uncertainty, state fear condition (induced fear participant = 1, no induced fear participant = 2), trait fear condition (participants which have a positive PFAI =1, participants which have a negative PFAI = 2), Performance Failure Appraisal Inventory (PFAI) scale, state fear factor derived from the Positive and Negative Affect scale (PANAS) and entrepreneurial risk propensity.

The results indicated that entrepreneurial risk perception was significantly and positively correlated with PFAI and uncertainty and significantly and negatively correlated with trait fear condition. A significant correlation was also found between state fear condition, trait fear condition, PFAI, state fear factor from PANAS and entrepreneurial risk preference. A significant correlation was also found between

appraisal dimensions. But no significant correlation was found between uncontrollability and risk perception.

Table 1 **Means, Standard deviations, and variable inter-correlations**

		Mean	SD	Inter-correlations							
				1	2	3	4	5	6	7	8
1.	Entrepreneurial Risk perception	0.017	(0.943)	1							
2.	Uncontrollability	-0.017	(0.960)	0.006	1						
3.	Uncertainty	3.016	(1.601)	0.283*	-0.428**	1					
4.	State Fear Condition	1.397	(0.493)	0.192	-0.140	0.196	1				
5.	Trait Fear Condition	1.714	(0.455)	-0.233*	-0.027	-0.149	0.369**	1			
6.	PFAI	-0.415	(0.638)	0.298**	0.044	0.147	-0.221*	-0.782**	1		
7.	State fear from PANAS	0.086	(1.022)	0.115	0.000	-0.127	-0.268*	-0.355**	0.230*	1	
8.	Entrepreneurial Risk Preference	0.441	(0.307)	-0.070	-0.017	-0.139	0.231*	0.086	-0.049	-0.101	1

Note: $p < 0.05$, * * $p < 0.01$, N = 63

3.2 State fear and entrepreneurial risk perception

In order to examine the influence of uncontrollability, uncertainty, state fear on entrepreneurial risk perception, we established a one-way multivariate analysis of variance (MANCOVA) with state fear condition as the independent variable, appraisal factor scores and entrepreneurial risk perception as the dependent variables, and scores of state fear from the PANAS and PFAI scale as covariates. The results revealed no significant multivariate effect of state fear condition on entrepreneurial risk perception but the individual effect of fear condition on entrepreneurial risk perception was significant $F(1, 55) = 4.838$, $p < 0.05$), so there was a statistical difference between groups in entrepreneurial risk perception due to state fear condition. A significant covariance impact of the PFAI on the dependent variables was also confirmed, $F(3, 53) = 3.961$, $p < 0.05$ (Wilks's $\lambda = 0.817$), but the influence of interaction between PANAS, PFAI, and fear condition on entrepreneurial risk perception were not statistically significant.

3.3 Trait fear and entrepreneurial risk perception

In order to examine the influence of uncontrollability, uncertainty, and trait fear on entrepreneurial risk perception, we established a one-way multivariate analysis of variance (MANCOVA) with trait fear condition as the independent variable, appraisal factor scores and entrepreneurial risk perception as the dependent variables, and scores of state fear from the PANAS and PFAI scale as covariates. The results revealed no significant multivariate effect of trait fear condition on entrepreneurial risk perception. The same thing for the individual effect of trait fear condition on entrepreneurial risk perception was not significant $F(3, 53) = 0.608$, p>0.05). So, there was no statistical difference between groups in entrepreneurial risk perception due to trait fear condition.

There was also no significant covariance impact of the PFAI and PNANS on the dependent variables, the same thing for the influence of interaction between PANAS, PFAI, and trait fear condition on entrepreneurial risk perception that were not statistically significant.

As a conclusion there were no statistical differences between participants which have a positive PFAI and participants which have a negative PFAI for their influence on entrepreneurial risk perception estimates.

3.4 Mediation effect of appraisal dimensions

3.4.1 PFAI and entrepreneurial risk perception

We established a multiple regression analyses between fear and risk perception considering PFAI as independent variable and entrepreneurial risk perception, uncontrollability and uncertainty as dependent variables. Table 2 includes the results of the multiple regression analyses employed to check hypotheses 3–7.

Table 2 **Results of Regressions: The relationships among fear of failure, uncontrollability, uncertainty, and entrepreneurial risk perception**

	Regression 1 Entrepreneurial risk perception		Regression 2.1 Uncertainty		Regression 2.2 Uncontrollabilty		Regression 3 Entrepreneurial risk perception		Regression 4 Entrepreneurial risk perception	
	Coef	SE	Coef	SE	Coef	SE	Coef	SE	Coef	SE
Gender	0.421	(0.328)	-0.624	(0.582)	0.331	(0.349)	0.317	(0.328)	0.404	(0.322)
Ethnicity	0.754	(0.540)	-0.382	(0.966)	0.668	(0.580)	0.608	(0.544)	0.622	(0.534)
Uncertainty	0.211*	(0.079)	-	-	-	-	-	-	0.185*	(0.079)
Uncontrollab	0.106	(0.133)	-	-	-	-	-	-	0.084	(0.131)
PFAI	-	-	0.399	(0.323)	0.028	(0.194)	0.406*	(0.182)	0.330	(0.180)
F statistic	2.715		0.922		0.881	-	2.827	-	2.935	
R²	15.8%		4.5%		4.3%		12.6%		20.5%	

Note: $p < 0.05$, all tests are two-tailed. $N = 63$.*

The results of regression 1 partially validate hypothesis 3. There is no significant association between uncontrollability and the entrepreneurial risk perception ($\beta = 0.106$, $p>0.05$). Item 1 in uncertainty scale, rather than the global scale, was used as independent variable because it is significantly associated to entrepreneurial risk perception, so there was no need to integrate the three items into the uncertainty scale and results showed a significant relationship between uncertainty and risk perception ($\beta = 0.211$, $p<0.05$), $F(4,58) = 2.715$, $p<0.05$). At all, uncertainty and uncontrollability explained 15.8% of the variance of entrepreneurial risk perception.

The control variables were not significant ($\beta = 0.421$, $p>0.05$ for gender) and ($\beta = 0.754$, $p>0.05$ for ethnicity), indicating that gender and ethnicity don't affect entrepreneurial risk perception.

Regression 2, showed a non-significant relationship between the mediator (appraisal dimensions) and the independent variables (trait fear of failure). Thus, the trait fear explained only 4.5% of the variance in uncontrollability and 4.3% of the variance in uncertainty.

Regression 3 analyzed hypothesis 5, indicated that entrepreneurial risk perception was significantly related with trait fear of failure ($\beta = 0.406$, $p<0.05$), $F (3, 59) = 2.827$, $p<0.05$) which explained 12.6% of the variance. Thus, the one unit increase in trait fear of failure was associated with increased odds (0.406) of being in higher risk category.

Regression 4 explored whether uncontrollability and uncertainty mediated the effects of trait fear on the entrepreneurial risk perception $F (5, 57) = 2.935$, $p<0.05$). The regression explains 20.5% of the variance in the entrepreneurial risk perception.

To examine the full or partial mediation, the coefficients for the fear of failure in regression 3 ($\beta = 0.406$, $p<0.05$) are compared to their coefficients in regression 4 ($\beta = 0.330$, $p>0.05$). The comparison displayed that the coefficients become insignificant after adding uncontrollability and uncertainty in regression 4, advancing a full mediated relationship. So trait fear of failure affected entrepreneurial risk perception indirectly through uncontrollability and uncertainty. Findings suggested that scholars experiencing fear of failure with appraisal tendencies of uncontrollability and uncertainty manifested important entrepreneurial risk perception. The Sobel test showed that uncertainty ($z = 1.91$, $p<0.05$) fully mediated the relationship between fear of failure and entrepreneurial risk perception.

3.4.2 Fear from PANAS and Entrepreneurial risk perception

We established a multiple regression analyses between state fear and entrepreneurial risk perception considering fear related items from the PANAS as independent variable and entrepreneurial risk perception, uncontrollability and uncertainty as dependent variables. Table 3 includes the results of the multiple regression analyses employed to check hypotheses 3–7.

Table 3 **Results of regressions: The relationships among state fear, uncontrollability, uncertainty, and entrepreneurial risk perception**

	Regression 1 Entrepreneurial risk perception		Regression 2.1 Uncertainty		Regression 2.2 Uncontrollability		Regression 3 Entrepreneurial risk perception		Regression 4 Entrepreneurial risk perception	
	Coef	SE	Coef	SE	Coef	SE	Coef	SE	Coeff	SE
Gender	0.421	(0.328)	-0.491	(0.610)	0.356	(0.353)	0.259	(0.353)	0.326	(0.340)
Ethnicity	0.754	(0.540)	-0.247	(0.965)	0.673	(0.575)	0.802	(0.560)	0.778	(0.540)
Uncertainty	0.211[*]	(0.079)	-	-	-	-	-	-	0.221[**]	(0.079)
Uncontrolla	0.106	(0.133)	-	-	-	-	-	-	0.118	(0.133)
PANAS	-	-	-0.155	(0.209)	-0.033	(0.124)	0.084	(0.121)	0.122	(0.116)
F statistic	2.715		0.589		0.894		1.248		2.396	
R²	15.8%		2.9%		4.3%		6 %		17.4%	

*Note: ** p < 0.01, N = 63.*

The tests failed to show any association between state fear and entrepreneurial risk perception, so they don't validate hypotheses 3–7. Uncontrollability proved to have insignificant impact on the dependant variables (entrepreneurial risk perception), however uncertainty has a significant impact on entrepreneurial risk perception (($\beta = 0.221$, $p = 0.007<0.01$). The control variables were not significant, indicating that gender and ethnicity don't affect entrepreneurial risk perception.

So, it is impossible to examine the full or partial mediation of appraisal dimensions on the relation between state fear and risk perception in this case. In other words, state fear doesn't affect entrepreneurial risk perception through appraisal dimensions.

3.5 Path analysis

A path analysis was accomplished to detect whether the direct effects of trait fear or the indirect effects through appraisal dimensions, were greater. Figure 1 reveals the standardized beta coefficients and the standard error for these interactions. The significant direct effect from trait fear to entrepreneurial risk perception dropped to insignificance when the uncontrollability and uncertainty was added in the model.

Figure 1 **Path diagram**

* p< 0.05
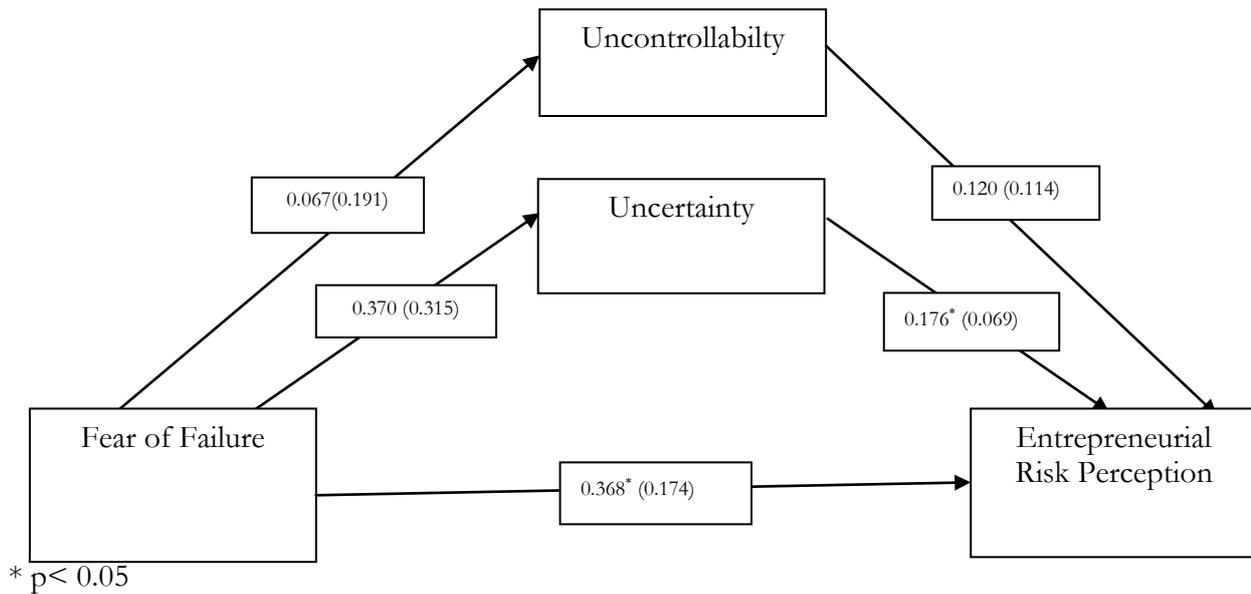
4 DISCUSSION

The study has for aim to respond to the flowing questions: 1) Do fear of failure lowered certainty and controllability? 2) Are changes in controllability and certainty related with entrepreneurial risk perception? And 3) are the effects of fear of failure on entrepreneurial risk perception mediated by the appraisal dimensions of certainty and control?

The results advance that fear of failure doesn't intensifies the level of entrepreneurial risk through uncontrollability. So, the fear of failure doesn't increase the appraisals of control in a risky situation. In other words, for fearful people the failure of new venture is not under control. Thus, fearful individuals are not more likely to highly perceive risk because they may not appraise high control over the failure of new venture.

The research confirmed hypothesis 7, so fear of failure indirectly arouses the entrepreneurial risk perception through their impact on uncertainty. It is suggested also, that differences in uncertainty and uncontrollability accounted over 10% of the variation in the entrepreneurial risk perception. The students perceived high entrepreneurial risk for this uncertain event because for the majority of respondents, the failure of new venture is considered as unpredictable and uncertain event. But, it was impossible to examine the full or partial mediation of appraisal dimensions on the relation between state fear and risk perception in this case.

The results follow the prior findings on the cognitive effects of fear on risk perception and are in agreement with the results of (Lerner & Keltner, 2001) in which they advanced that appraisal dimension mediate the relation between risk perceptions and fear but the authors confirmed the significant mediation of controllability and not for the certainty, the inverse for our study. This may have appeared because there was a problem in the comprehension of questions associated to controllability in the questionnaire. Future research should examine this employing other items of appraisal of control tendencies.

The research demonstrated also that control variables (Fear from PANAS and PFAI) are significantly associated to the entrepreneurial risk perception when both appraisal of control and fear condition were integrated in the same pattern. As well as, the link among control variables and risk perception has been exhibited in preceding studies.

CONCLUSIONS

The study affords crucial understanding into the fear of failure in entrepreneurship and their associations to appraisal dimensions of emotions and to entrepreneurial risk perception. In other words, it was suggested through this study that students revealing higher trait fear of failure with appraisal tendencies of uncontrollability and uncertainty manifested important entrepreneurial risk perception. As well as, although a statistical difference between students in entrepreneurial risk perception due to state fear condition, state fear didn't affect entrepreneurial risk perception through appraisal dimensions.

According to Lerner & Keltner, 2001, fear is the origin of risk perception. Studying the association among fear of failure and entrepreneurial risk perception is relevant to know the barrier that lead people to disagree from adopting entrepreneurship as a career. We have established that the association among fear of failure and entrepreneurial risk perception was fully mediated by certainty and not by the control.

The present study provides to the literature the beginning to the understanding of the association among fear of failure, control, certainty and entrepreneurial risk perception. However, we must mention that there was an insufficiency of accuracy in the conception of fear of failure scale in entrepreneurship literature. This construct is studied as only an impediment to entrepreneurial action by employing the PFAI construct which is anticipated to increase entrepreneurial risk perception and limiting the relationship between fear of failure and entrepreneurship. So, it is important to shed some light on the beneficial influence of fear of failure on entrepreneurship and find a scale of fear of failure that integrate the inhibiting and motivational role of fear in entrepreneurship (Cacciotti, 2016). Furthermore, an employing of fear of failure scale specific to entrepreneurship field may also enhance the research findings.

The findings advance that it may be important to integrate appraisal dimensions as mediators when studying the impact of fear on entrepreneurial risk perception. The research has implications for entrepreneurs. So, institutions boosting entrepreneurship should fix attention on the determinants of certainty and controllability.

If fear increase risk perception, entrepreneurs may want to minimize their fear by remembering previous failures. This research examined the two appraisal dimensions that were most likely to mediate the relationship among fear and entrepreneurial risk perception, may be other cognitive appraisal dimensions require to be tested in future research and that integrate: pleasantness, attentional activity, anticipated effort and responsibility.

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ENTREPRENEURIAL INTENTIONS: GEM BASED EMPIRICAL ANALYSIS ON THE NORTHERN EUROPE AND ASIAN COUNTRIES

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ABSTRACT

The requirement to contextualize research in the field of entrepreneurship has converted into the main theme from the last two decades. Therefore, this study bridges the gap by analyzing the relationship between the entrepreneurial activity in northern Europe and the Asian region countries in perspective of an individuals' perception skills, attitudes, and the subjective norms. Based on our research, we propose a new conceptual framework to analyze EI in the context of entrepreneurship by using the theory of planned behavior (TBP) and the Global Entrepreneurship Monitor (GEM). We empirically examine the influence of key developmental differences on the entrepreneurial intentions (EI) model with structural equation modeling (SEM). In the studied GEM countries, our findings affirm the applicability of the EI model across countries confirming that entrepreneurial activities are the key drivers of economic growth. The findings also recommend that the progression from perception to intent is modified across the 23 European and Asian countries, though there exist several cultural differences to the extent of casual effects also including the differences of influential factors. This study contributes to the debate on entrepreneurship by analyzing key factors influencing the EI model and extends our understanding of entrepreneurship.

KEYWORDS: entrepreneurial intentions; cultural differences; motivational antecedents; northern Europe; Asian region

JEL CLASSIFICATION: L26, N14, O3

INTRODUCTION

Entrepreneurship and its influence on economies are now both widely recognized and determined (Fisher, Maritz, & Lobo, 2014). In view of the existing benefits of entrepreneurship, policymakers and academicians are highly focused on gaining more understanding of entrepreneurship and its process. The objective of this study is to analyze the entrepreneurial process, considering the factors that influence entrepreneurial intentions (EI), particularly, individual's perception skills, subjective norms, and attitudes. The analysis is based on the dataset of 23 countries falling in Asian and the northern Europe region participating in the Global Entrepreneurship Monitor (GEM) study.

As entrepreneurial intention research is a widespread and emergent research area. The theory of entrepreneurial event reveals the early stages of this research area (Shapero and Sokol, 1982; Shapero, 1984). Later the theory of planned behavior (TPB) was incorporated into EI research, a variety of models have been developed (Bandura, 1982; Ajzen, 1991; Ajzen&Fishbein, 1980). EI may be considered as the key initial phase in the entrepreneurial activity and venture creation development process. The existing literature provides a variety of entrepreneurship definitions – according to GEM, entrepreneurs are defined as "the adult people who are active in an entrepreneurial way in developing a start-up they will partially own or are owing in the present and running an effective infant business (Reijonen and Komppula, 2007; Hosseini, Dadfar, &Brege, 2018). In a broader sense, an entrepreneurial experience comprises of creating a new venture (whether workable or not), a small business that provides employment opportunity (Lee & Wong, 2004). infant and recognized businesses, the establishment of businesses and exits from entrepreneurship.
The entrepreneurial action is unlikely to occur in the absence of EI (Gorgievski, Ascalon, & Stephan, 2011). Therefore, EI plays a crucial role in getting to understand the whole procedure of entrepreneurship, as EI serves as a base conduit for consequent actions that are associated with organizational development. In view of TPB, there exists three antecedents to EI: subjective norms (SN), personal attitude (PA) and perceived behavioral control (PBC) (Ajzen, 1991; Ajzen, 1988). The main factors leading to real entrepreneurial behavior are various non-influential elements, such as the accessibility of opportunities and financial support (Lumpkin &Dess 2001). Many studies have determined EI, but from a cross-country point of view, this study fills the research gap. As a research gap is evident in EI studies that would consider regions, though a limited number of countries were examined (Parker, 2004).

The current study fills the research gap by comparing 23 countries falling in the northern Europe and Asian region. These regions are selected for analysis on the basis of their past significant growth in the field of entrepreneurship in comparison to the rest of the European regions and at present they are the most entrepreneurially developed regions to which European Union has paid considerable attention to the application of EU strategy (European Commission, 2010). Historically, all these countries are completely different in view of Global Competitiveness Index and GDP per capita calculated by using purchasing power parity (PPP). In terms of EI and initial entrepreneurial activity levels, they are also different as well as several dimensions are taken into account in the model of this study with the aim to contribute in enhancing the knowledge regarding EI variations in these countries.

Several past studies were commonly based on the research from GEM which is a project which efforts to analyze the association between entrepreneurship and economic development with the help of a research consortium (Reynolds, Bosma, Autio, Hunt, De Bono, Servais, 2005; Bagozzi, Baumgartner & Yi, 1989). In this study, we also used the GEM database and took a closer look at a conceptual framework developed by relating EI to TBP.

Our study is vital since policymakers and academicians are increasingly focused to encourage more people to start an entrepreneurial career. So far, few empirical studies exist in this field. The objective of this research is bi-fold; to create the applicability of the developed model for doing cross-country

studies and to analyze the evolving factors and their influence on the entrepreneurial intentions in northern Europe and the Asian region.

1. LITERATURE REVIEW

1.1 Theoretical Framing

Entrepreneurship researchers agree that entrepreneurial activities vary over time and across countries, and are influenced by various factors (Wach et al. 2016). Commonly EI is defined as an individual's desire to initiate a business or to own someone's business (Bae et al., 2014).

Various models have been applied to explain EI, such as the expected utility model (Douglas & Shepherd, 2000), Model of executing entrepreneurial ideas (Bird, 1988) and Entrepreneurial Event Model (Shapero, 1984). The early-stage of EI can be found back to the theory of entrepreneurial event (TEE) and to the 1980s (Shapero and Sokol, 1982; Shapero, 1984). According to TEE persistence (inertia) modifies human behavior and the interruption caused by some negative or positive events may lead to displacement in it. The area of EI has further broadened by the joining of TBP from social psychology (Reynolds 1987; Ajzen, 1991; Bandura, 1982; Ajzen, 1988). This theory states that EI highlights the intentions which show a person will be inclined towards a selection of entrepreneurship as a career. In the field of EI, several models have been prepared since then, which applied cognition and perception into entrepreneurial behavior – the conventional entrepreneurial potential model (Gimeno et al. 1997). However, none of them has been as effective as the TBP. Moreover, several studies based on the EI concept have evolved contributing to the latest specifications and applications along with inconsistencies (Cruz et al., 2015).

The eclectic model of entrepreneurship focuses on the abilities and resources of individuals along with their preferences and attitudes towards entrepreneurship as key factors of the social environment that affects entrepreneurship process. As Ajzen highlighted (Ajzen, 1991) that for assessing a particular behavior of interest its antecedents must be analyzed. According to TBP three antecedents describe EI, perceived behavioral control (PBC) describes the apparent difficulty or easiness of doing any kind of entrepreneurial task and the perception regarding the behavioral control. Subjective norm (SN) describes the supposed social pressure or approval to execute or not to execute an entrepreneurial activity. Personal attitude toward entrepreneurship (PA) refers to the extent to which an individual has a satisfactory or disapproving assessment or appraisal of entrepreneurship (Linan& Chen, 2009).

EI has been analyzed in the past empirical studies, and many of them proved that it is influenced by several elements including, PBC, SN and PA (Hayton, George, and Zahra, 2002; Linan and Chen, 2009; Bae et al., 2014; Shinnar, Giacomin& Janssen, 2012). While many studies also measured intentions differently; some researchers used estimated likelihoods of EI (Kolvereid and Isaksen, 2006) and others used unconditional measures of intentions (Autio et al., 2001). Ajzen (1991) also emphasized that an actual behavior of a person is dependent on various non-motivational factors which comprise of resources and opportunities. Hence, behavioral achievement is dependent on the ability of an individual (behavioral control) and motivation (intention) and this concept are particularly significant in the area of entrepreneurship. In keeping view, the proved significance of TBP this study applies the latest advancements in the TPB.

1.2 Hypotheses

In order to assess the antecedents of EI, we connected the intention of individuals with key variables distinguished as antecedent to EI. By considering only, the internal structure of EI along with SN and PBC, the model reveals the influence of PBC and SN on EI. Moreover, our model also includes high job creation (HJC) and perceived opportunities (PO) as constructs that influences one's anticipated barriers and prospects that contributes to EI development. The hypotheses formed for our study are as follows:

H1: Perceived behavioral control influences entrepreneurial intentions.
H2: Subjective norms effects entrepreneurial intentions.

H3: Perceived opportunitiesinfluence perceived behavioral control.
H4: Perceived opportunities influences entrepreneurial intentions.
H5: Expectation of high job creation effects entrepreneurial intentions.

In this study, 23 countries from the Asia and northern Europe are considered. The north European countries are: Lithuania, Estonia, Latvia, Finland, Iceland, Sweden, United Kingdom, Denmark, Ireland, and Norway are located in northern Europe. While from Asia the data of 11 countries was available from the GEM website for the year 2012 and the countries are the China, Iran, Israel, Japan, Malaysia, Pakistan, Palestine, Singapore, South Korea, Taiwan, and Thailand.

In the perspective of economic growth, early-stage entrepreneurial activities are mostly analyzed by the Total Early-Stage Entrepreneurial Activity Rate (TEA), it is the percentage rate of those people whose age fall within the range of 18-64 years and they are either a nascent entrepreneur or an owner-manager of a new start-up (Amoros and Bosma, 2014), wherein a firm's birth is taken as the time when a venture/firm has been disbursing salaries over three months.

Kelley, Bosma and Amorós, (2011) have claimed a significant relationship between economic development and rates of entrepreneurial ventures and also revealed that the level of TEA diminishes with a rise in GDP per capita rise. Thus, GDP of a country allows us to have assumptions for the phase (and type) of early-stage start-ups to be extensive in that country. The GDP per capita of selected countries, TEA with EI rates reported by GEM, Global Competitiveness Index, are shown in Table 1.

Table 1. **Total Early Stage Entrepreneurship Prevalence Rate, GDP Per Capita (PPP), and Global Competitiveness Index**

Country	Global Competitiveness Index – overall 2012–2013 (ranks out of 144) Score (1-7)	Entrepreneurial intention prevalence rates	Total early-stage entrepreneurship prevalence rate (TEA)	GDP per capita (PPP)
The Northern Europe				
Austria	16(5.22)	8.57	9.58	0.2224
Denmark	15(5.27)	6.64	5.36	-0.1499
Estonia	34(4.64)	16.38	14.26	4.6812
Finland	3(5.55)	7.73	5.98	-1.8940
Germany	6(5.48)	6.01	5.34	0.3035
Ireland	27(4.95)	5.43	6.15	-0.3858
Latvia	55(4.35)	21.85	13.39	5.3330
Lithuania	45(4.41)	17.98	6.69	5.2288
Norway	28 (4.99)	4.91	6.75	1.3812
Sweden	4(5.53)	10.96	6.44	-1.0212
UK	8(5.45)	9.52	8.98	0.7781
Asian Countries				
China	29(4.83)	20.39	12.83	7.3320
Iran	66(4.22)	22.78	10.79	-8.6091
Israel	26(5.02)	12.81	6.53	0.0777
Japan	10(5.40)	2.49	3.99	1.6573
Malaysia	25(5.06)	13.34	6.99	3.5371
Pakistan	124(3.52)	24.51	11.57	1.3385
Palestine	22(4.01)	35.61	9.84	1.0213
Singapore	2(5.67)	16.08	11.56	1.5607
South Korea	19(5.12)	12.98	6.64	1.7560
Taiwan	13(5.28)	25.49	7.54	1.9541
Thailand	45(4.89)	18.98	18.94	6.7466
Turkey	43(4.45)	14.72	12.22	3.1592

Source: World Bank, International Comparison Program database: GDP per capita based on purchasing power parity (PPP) (current US dollar-2017).
Source Global Competitiveness report 2012

Source: Global Entrepreneurship Monitor (GEM-2012), Adult Population Surveys.
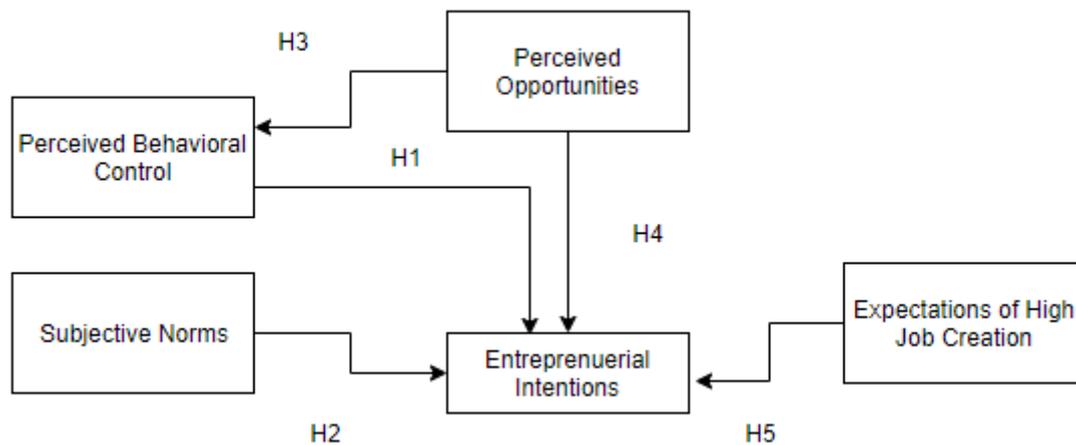
Figure 1: Conceptual Framework

2. METHODOLOGY

The study analysis representative samples of adult people from 23 countries selected from northern Europe and Asia region with GEM research. GEM reports of 2012 have been considered as the main source of data regarding entrepreneurial activities and attitudes towards start-ups. The construct taken in this study along with their respective measurements are explained as follows:

Perceived Opportunities (PO)

This variable measures the percentage of those people who recognize best opportunities in the market for launching their entrepreneurial venture. Their age range is from 18 to 64 years. This variable is measured as a binary variable by assigning 1 = individual perceiving opportunities, 0 = individual not perceiving opportunities.

High Job Creation (HJC)

High job creation measures the percentage of those people who are at the early stage of entrepreneurship and expect to create job opportunities comprising of minimum 6 or more jobs within the next five years. Its measure is done by using a binary variable by assigning 0 = No and 1 = Yes.
In accordance to theory of planned behavior, the entrepreneurial intentions of a person are recognized through the attitude towards a certain phenomenon, like subjective norms and perceived behavioral control. By considering this aspect, in this paper we have included perceived behavioral control by including two factors;

- *Fear of Failure (FF)*

This variable assesses the percentage of people falling within the age range of 18 to 64 years perceiving prospects in the field of entrepreneurship but expresses that fear of failure may prevent them from launching their entrepreneurial venture.

- *Perceived Capability (PC)*

This variable evaluates the percentage of those people falling within the age range of 18 to 64 years who know that they have the required abilities and understandingto launch their entrepreneurial venture. Both elements were evaluated using binary variables (1 = Yes, 0 = No)

Entrepreneurial Intentions (EI)

In this study we have analyzed EI as the dependent variable. For the application of our methodology we have measured this variable as a twofold factor: a person is assigned 1 if h/she plans to launch their own business in the upcoming three years, 0 in the other case.

EI (Antecedents)

In view of existing literature, PBC and SN are considered as the antecedents of entrepreneurial intentions. In this study, PBC and SN impact on EI are measured by using following two elements;

- *Innovation:*

This variable involves the percentage of those people who are at the early stage of entrepreneurship and expresses that their product or service is novel to at least some consumersand few or no venture is producing the same product or service (1 = Yes, 0 = No).

- *Entrepreneurial Employee Activity (EEA):*

This variable measures the rate of participation of employees in activities related to entrepreneurship, like producing new product or service etc. 1 = Yes, 0 = No).

2.1 Sample Description

The selected data were collected from the 2012 Global Entrepreneurship Monitor research website.
Table 2 shows that all the variables of the study have Cronbach alpha values greater than 0.6 which confirms the internal consistency of constructs on reliability scale. The characteristics of European and Asian countries selected as sample for our study are exhibited in Table 3.

Table 2 **Constructs' Reliability**

Serial No.	Variables	Cronbach's Alpha
1	Perceived Opportunities	0.820
2	High Job Creation	0.910
3	Fear of Failure	0.904
4	Perceived Capabilities	0.958
5	Innovation	0.905
6	Entrepreneurial Employee Activity	0.812
7	Entrepreneurial intentions	0.885
8	**Average Cronbach Alpha**	**0.884**

Table 3 **Characteristics of the European countries**

Country	Sample size	Number of males in the sample	Number of females in the sample	Average age, in years
Subsample 1 (Northern Europe)				
Austria	4570	2,259	2,311	42.57
Denmark	5549	3,115	2,434	43.05
Estonia	4247	2,109	2,138	38.52
Finland	1001	489	512	40.51
Germany	1551	882	669	43.52
Ireland	2536	1,121	1,415	40.57
Latvia	2830	1,317	1,513	42.87
Lithuania	822	431	391	40.61
Norway	963	460	503	41.51
Sweden	2298	1,118	1,180	40.52
UK	5,733	2,821	2,912	39.50
Subsample 2 (Asian Countries)				
China	1984	1,012	972	41.53
Iran	8898	3,274	5,624	42.89
Israel	2705	1,213	1,492	43.52
Japan	2294	1,354	940	42.89
Malaysia	1987	916	1,071	40.78
Pakistan	2618	1,453	1,165	39.20

Palestine	4578	2,231	2,347	41.51
Singapore	3066	1,545	1,521	41.09
South Korea	1539	654	885	40.58
Taiwan	4683	2,219	2,464	41.10
Thailand	3,094	1,437	1,657	41.39
Turkey	4,402	2,631	1,771	39.51

Source: Adult Population Survey - Global Entrepreneurship Monitor (GEM)

Table 4 **Total Country Measures**

Country	Entrepreneurial Employee Activity	Perceived Capabilities	Perceived Opportunities	Fear of Failure	Innovation	High Job Creation Expectations
			Subsample 1			
Austria	11.01	49.61	49.21	35.96	33.55	10.14
Denmark	12.62	31.02	44.41	39.26	44.41	25.72
Germany	10.05	37.09	36.16	41.91	31.77	23.1
Ireland	12.60	45.16	25.55	35.37	37.33	31.45
Latvia	10.81	43.56	33.05	36.74	34.59	48.43
Sweden	11.58	36.99	66.48	32.61	21.15	15.72
United Kingdom	10.08	47.13	32.82	36.01	30.54	23.66
			Subsample 2			
China	0.59	37.6	32.24	35.82	21.06	18.23
Iran	0.74	54.15	39.17	41.42	7.95	16.42
Israel	4.24	29.31	30.62	46.76	29.15	21.33
Japan	3.01	9	6.37	53.13	21.73	32.03
Malaysia	0.9	30.82	35.69	36.34	17.13	12.82
Pakistan	0.17	48.74	46.48	31.24	28.49	22.77
Palestine	2.46	59.37	46.14	40.19	21.48	25.61
Singapore	2.86	26.58	22.51	41.63	21.79	39.63
South Korea	2.07	26.93	12.52	43.01	26.53	29.44
Taiwan	3.78	26.38	38.55	37.6	18.85	37.77
Thailand	1.11	45.97	44.61	50.06	19.57	12.15
Turkey	0.97	49.44	39.88	30.39	24.89	36.56

Source: Adult Population Survey - Global Entrepreneurship Monitor (GEM)

Table 4 reveals total country measures of the selected factors assessed in this study. For assessing the data structural equation modeling (SEM) technique is used as it assesses to analyze the relationships between mulitiple independent and dependent constructs (Henseler, J., and Sarstedt, M. 2013; Brewer, Cinner, Fisher & Wilson, 2012). In order to assess the goodness fit of our model, we have applied tests of goodness fit (GoF), average adjusted R-square (AARS) and average path coefficient (APC). Similarly, path coefficients are used for testing hypothesis, level of significance (p< 0.01, 0.05, 010) and standard error. For analyzing the subsets of countries parametric t-tests are used.

4. RESULTS AND DISCUSSION

According to the results, majority of the paths are found significant while few were found non-significant. The results revealed that the relationship between perceived capabilities is positive and significant while the relationship between fear of failure over intentions is negative but insignificant and this result is in contrast to the past studies (Corbett, 2007; Cassar& Friedman, 2009). This result may lead to future direction for more comprehensive research on these factors. The result proves that if a person is having strong abilities then he/she would have greaterentrepreneurial intentions and this result is aligned with past research studies (Conroy 2004; Bosma et al., 2008). Thus, H1 of our study is partly accepted.

Table 5 **Path Coefficients (Estimated Values)**

Hypotheses	Model group 1	Path coefficient	Expected relationship	Standard error	Significance level
H1	PC → intention	0.411***	Positive	1.69	Significant

	FF → intention	-0.055	Negative	-0.007	Non-significant
H2	innovation → intention	0.016*	Positive	1.78	Significant
	EEA → intention	0.068**	Positive	0.034	Significant
H3	innovation → capability	0.044**	Positive	0.021	Significant
	EEA → capability	0.152***	Positive	0.086	Significant
H4	PO → capability	0.144**	Positive	0.072	Significant
	PO → fear	-0.203*	Negative	-0.076	Significant
H5	HJC → intention	0.015*	Positive	5.576	Significant

Note: * indicates significant level at 1%, **indicates significant level at 5%, *** significant level at 10%
Values of AARS = 0.072, p < 0.05; GoF = 0.212; APC = 0.082

Table 6 **Path Coefficients (Northern Europe & Asian Countries)**

Hypotheses	Model group 1	Path coefficient (Northern Europe)	Path coefficient (Asia)	Expected relationship	Significance level
H1	PC → intention	0.231*** (0.129)	0.115** (0.050)	Positive	Significant
	FF → intention	-0.045 (0.031)	-0.025 (0.025)	Negative	Non-significant
H2	innovation → intention	0.024** (0.0125)	0.036*** (0.020)	Positive	Significant
	EEA → intention	0.078* (0.0310)	0.069* (0.026)	Positive	Significant
H3	innovation → capability	0.054*** (0.030)	0.047*** (0.025)	Positive	Significant
	EEA → capability	0.162* (0.057)	0.145*** (0.084)	Positive	Significant
H4	PO → capability	0.176** (0.081)	0.185** (0.92)	Positive	Significant
	PO → fear	-0.124** (-0.063)	-0.194*** (0.106)	Negative	Significant
H5	HJC → intention	0.052*** (0.027)	0.069*** (0.038)	Positive	Significant

Note: * indicates significant level at 1%, **indicates significant level at 5%, *** significant level at 10%
Values of AARS = 0.085, p < 0.05; GoF = 0.292; APC = 0.078

In order to assess the influence of subjective norms over entrepreneurial intentions, the impact of innovation on intentions and entrepreneurial activity on intentions is considered. Our results regarding the influence of innovation on intentions reveals that innovations positively influences intentions and this finding is consistent with past studies which found that innovation is an aptitude to recognized opportunities and use them in innovative ways and it enhances intentions (Robinson et al., 1991; Schumpeter, 1934).Regarding the influence of entrepreneurial activity on intentions we found a positive relationship between the both. The findings prove that employees participating more in entrepreneurship field would have higher EI andthis is also consistent with past studies (Kuratko, 2005; Lado&Vozikis, 1996). Thus, H2 is proved.PBC is the perceived easiness or difficulty of exhibiting a behavior under different circumstances when the behavior may go out of controllable situations of forecasting behavior directly or indirectly. For assessing the influence of perceived opportunities on PBC, we assessed the impact of innovation and entrepreneurial employee activity (EEA) on intentions.

Our results reveal that innovation and entrepreneurial employee activity positively and significantly influences perceived capability. Therefore, our findings confirm that people perceiving their product or service is novelin the market to at least few customers would have positive perception regarding their abilities of starting their own venture and similarly entrepreneurial activities boosts positive perception regarding own capabilities of an individual and this result is also supported by past studies (Kuratko, 2005; Hamidi et al., 2008).Our results indicate that an individual having strong potential of recognizing opportunities in the market would have stronger control over his behavior and would have higher entrepreneurial intentions. This finding is consistent with past studies indicating positive relationship between both the constructs (Ajzen, 1991; Ajzen& Madden, 1986). Hence, H3 and H4 is proved.

Recent research recommends that the number of entrepreneurs who expect to create maximum number of jobs, leads to higher macro-economic growth and to entrepreneurial intentions in general (Stam, Suddle, Hessels, & Van Stel, 2009; Stam, Hartog, Van Stel, &Thurik, 2011;). Our results also show that entrepreneurs expecting to create job opportunities would have stronger EI and the result supports H5.

CONCLUSION

A realization of personal effectiveness that is both strong and accurate is critical to the commencement and tenacity of performance in all phases of human progress (Lent & Hackett, 1987). The most valuable contribution of our study is that the EI model is appropriate to apply across different countries and the antecedents of EI have a statistically significant effect on EI. This article's approach is fundamentally validated as it gives outcomes that are consistent with the modified conceptual framework. Hence, this study represents a key step toward recognizing entrepreneurship in a more systematic way from a career viewpoint and considering mainly the entrepreneurial context. The study further exposed that the impact of PBC and SN factors are stable and significant across all countries. The findings are supported by the literature which indicated that PBC and SN are extremely important in determining EI (Wedayanti, N. P., &Giantari, I., 2016; Cruz et al., 2015). This study also recommends that the extent to innovation level have a significant and positive impact on EI. As, TPB describes that individuals are concerned about theirperceptionsregarding their own abilities and capabilities (Krueger et al., 2000; Ajzen, 1991). Additionally, these findings support prior studies that associated perceived the capability to entrepreneurship (Bandura, 1982; Krueger, Reilly and Carsrud, 2000; Martinez, M., Yang, T. & Aldrich, H., 2011). As perceiving entrepreneurship,a creator of job opportunities also has a significant and positive influence on EI. With the help of structural equation modeling the internal structure of selected antecedents of EI is analyzed in which the key role of perceived opportunities and entrepreneurship employee activity (EEA) are also supported by the key results of the study which depicted a positive and significant relationship with intent and this is also consistent with past studies that indicated the importance of perceived opportunities of an entrepreneur with the key actors of entrepreneurial ecosystem leads to undertaking of successful entrepreneurial career (Bruton et al., 2013; Clemens, 2006).

From a practical perspective of the strategic priorities of north European countries and the Asian region, various policy implications can be recommended. By considering the viewpoint of entrepreneurial perceived opportunities and perceived capabilities, it is essential to associate a variety of formal and informal entrepreneurial learning methods and training techniques, which focuses on teamwork in an actual entrepreneurial ecosystem. Policy measures should be focused on boosting entrepreneurial knowledge, capabilities and reducing the fear of failure as it affects key factors leading to influence the decision of an entrepreneur.

Though many past researchers have analyzed entrepreneurial intentions from a cross-cultural viewpoint (Davidsson, 1995; Hayton, George, & Zahra, 2002; Davidsson&Wiklund, 1997). Our research contributes by providing a valuable knowledge of how key variations across countries modify entrepreneurial intentions along with their antecedents in the countries of northern Europe and the Asian region. In this study, we did not limit this study to institutional factors, but we focused on the European and Asian countries with its key features, affecting the link of a probability of reporting entrepreneurial intentions with its antecedents, making this study commendable in the future.

This study supplements past studies and makes contributions to the research in the following ways. First, in view of analyzing GEM data, it uses the Adult Population Survey (APS) data that strives to compare entrepreneurial activities by collecting the most reliable and latest data from all countries. Second, the study combines the entrepreneurial intention components with the theory of planned behavior (TPB) and formulated a GEM-based conceptual framework and highlighted the role of EI in an entrepreneurial context. Finally, the study tests the applicability of the developed framework across entrepreneurially developed in 23 European and Asian

countries. Findings of this study also disclose that policymakers should know that entrepreneurial activity is not only dependent on an individuals' amateur liking of entrepreneurial career and its challenges, but it is also dependent on the conditions provided for starting an entrepreneurial venture. Thus, the environment plays a key role in enhancing entrepreneurial activity in any country. Based on our findings, we suggest that the north European and the Asian region countries' have stronger entrepreneurial intentions rooted in their feelings linked to their capability to perform in the field of entrepreneurship, mirroring outcomes found in the SEM analysis confirms that perceived abilities are significantly linked to intentions. In spite of the key empirical and conceptual contributions of our study, our findings also provide several recommendations for the entrepreneurship policy makers so that they may foster entrepreneurship initiatives at a national level in the European context of 2020 Strategy.

Concerning the findings of this research, three limitations should be noted, each of which leads to future research. First, this study analysis EI within a reasonably narrow timeframe as it is a cross-sectional study. Mainly, EI is not stable over time in view of dynamic economic conditions. As such, it would be interesting to follow our study in a longitudinal timeframe in order to analyze the evolution of EI over time. Secondly, it would be of interest to investigate the extent to which EI results in the creation of new entrepreneurial ventures and after that, the key factors can be identified. Third, in order to determine the authors and pivotal research work of this field, we suggest a co-citation investigation on the same research subject.

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THE IMPACT OF SELECTED FACTORS ON THE QUALITY OF BUSINESS ENVIRONMENT ASSESSMENT IN THE CZECH REPUBLIC AND THE SLOVAK REPUBLIC

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ABSTRACT

The paper's aim is to examine the dependence of the quality of the business environment on defined technological factors (availability of human capital and research and development infrastructure) and to define and quantify significant technological factors that create the quality of the business environment in the SMEs segment. Part of its goal was the comparison of the defined factors between the Czech Republic (CR) and the Slovak Republic (SR). In connection with the stated research goal, a questionnaire survey was conducted among businesses operating in the SME segment. Through this research, 312 companies were surveyed in the Czech Republic and 329 companies in the Slovak Republic. To achieve the primary goal of the article, methods such as correlation analysis and multiple linear regression modelling (t-tests, F-ratio, adjusted coefficient of determination, and so on) were applied. The results of the research have brought interesting findings. Research and development infrastructure, as well as the availability of human capital are important factors that have a positive impact on the business environment in both countries.

INTRODUCTION

Small and medium-sized enterprises (SMEs) are an essential part of the economic system of each country, having important effects on the development of the whole society (Dobeš et al., 2017; Ključnikov & Popesko, 2017; Kozubíková et al., 2017; Virglerova et al., 2016; Czarniewski, 2016; Dubravska et al., 2015; Belas et al., 2015).

This paper explores critical technological factors and their impact on the quality of the business environment in the Czech Republic and Slovakia. We are interested in how the availability and quality of human capital and the support of science and research influence the growth of the quality of the business environment for SMEs.

The structure of the paper is as follows: The theoretical part presents the results of research in the area of quality of the business environment. The next section defines the research goal, methodology, and

the data used. In the third part, the results of the research are presented along with a brief discussion on the issue. In the final section of the article, the essential conclusions of the research are formulated.

1. THEORETICAL PART

The quality of the business environment is of great importance for the competitiveness of the economy as well as for its future and sustainable growth (Korcsmáros et al., 2017, Wruuck, 2015, Chládková, 2015, Bunoa et al., 2015, Fetisovová a kol., 2012).

Several authors examine the factors that determine the quality of the business environment for SMEs. Belas et al. (2018) investigate significant economic risk factors and their impact on the segment of SMEs. Hudáková et al. (2018) pointed to many risks (corruption, clientelism, operational risk, legislation) that may affect the functioning of the company. It focuses more on market risk in the article (Hudáková a kol., 2017). Lazányi et al. (2017) examine whether age, gender, or education have an impact on perceived risk in the context of the quality of the business environment.

According to Buno et al. (2015), the business environment in the firm includes economic, political, institutional, legal, technological, and cultural conditions in which it operates and which form business activities. Similarly, Chládková (2015) states that the business environment is influenced by a wide range of conditions concerning legislation, institutional infrastructure, and market operations.

The complex characteristics of the factors that determine the quality of the business environment are presented by Conorto et al. (2014). Technological factors are factors such as the availability of human capital, research and development infrastructure, public sector cooperation with the private sector, etc.

An interesting issue is the importance of education for SMEs entrepreneurship and specifically the importance of higher education. Several authors address this issue. Irwin and Scott (2010) report that higher entrepreneurship education has a positive impact on the ability to overcome financial difficulties and allows better access to external funding. Higher educated people are more motivated to be entrepreneurs (Velez, 2009; Lafuente, Vaillant, 2013). Well-educated entrepreneurs are more able to perceive opportunities in the market (Naude a kol., 2008), which is closely linked to the higher growth of companies (Rauch, Rijsdijk, 2013, Van der Sluis and Van Praag, 2008). Millian et al. (2014) report that educated entrepreneurs are getting educated employees on the labour market for their business, which has a positive effect on company productivity. Jones et al. (2011) report that entrepreneurial education at a university can positively influence the decision of students to become entrepreneurs. A similar opinion is also provided by Popescu et al. (2016). If universities create a positive environment in their educational activities and support entrepreneurial activities, students are more motivated to start an enterprise (Tredevi, 2016). Quality education in this area significantly increases students' enthusiasm and entrepreneurial skills (Bergmann et al., 2016). Oehler et al. (2015) emphasise that knowledge of finance, accounting, and corporate management is very much needed for students interested in doing business.

In their study, Botlikova and Botlik (2014) attempted to map out from the data of the Czech Statistical Office, their databases and strategic documents on the development of SMEs, and to find a relationship between the development of entrepreneurial activities and the educational structure. The authors were considering factors which would help to create a competitive region that will be able to offer entrepreneurs sufficient conditions for entrepreneurial activities. The research task has highlighted the importance of human capital for the development of the region. The authors emphasise that low business activity in a region associated with a low level of education predetermine the region's position towards a pathological phenomenon such as crime and social exclusion. Finally, the authors declare the fact that the increase in the educational level and the number of educated people in the region demonstrably support the development of SMEs. In their analyses, the authors have shown that the closest relationship is between the development of SMEs and those with secondary education with school-leaving exams and without school-leaving exams. Further development of SMEs is associated with an increase in university-educated people.

A crucial area that shapes the business environment is the application of scientific and research knowledge to the business activities of SMEs. Several authors address this issue.

The knowledge spill-over theory of entrepreneurship points out the role of knowledge as a source of entrepreneurial opportunities to provoke innovative start-ups (Acs et al., 2009). However, the study conducted by González-Pernía et al. (2015) showed that the different context found in developing economies produces a limited connection between knowledge spill-overs, innovation, and entrepreneurship in comparison with the conventional linkage studied in the literature of this theory. Their findings point out that policy efforts to attract foreign direct investments which are not accompanied by efforts in research and development investment seem to be useless regarding enhancing innovation in developing economies. Policies aimed at improving both knowledge absorptive capacity and the access of entrepreneurs to foreign firms can be beneficial for enhancing innovative business formation in developing countries.

Innovation is an essential factor for a growing firm (Kovaľová et al., 2018). Hashi and Krasniqi (2011) researched this relationship, covering data from firms that operate in Central Eastern and South Eastern European countries. The innovation index resulted in the same positive impact in both regions. Furthermore, there were no significant differences regarding the impact of innovation on firm growth in two groups of countries. A similar influence was found for organisational innovation which is positive and statistically significant. In this context, Krasniqi and Desai (2016) found innovation as a key factor that positively influences high-growth firms operating in transition economies. Calabrese et al. (2013) studied the relationship between types of innovations on firm performance in the context of Italian firms. They found a positive impact of innovation drivers on knowledge of grants and funding opportunities, network, and innovation efforts. On the other hand, innovation efforts and innovation protection affect the positive economic performance of the firm.

Bockova and Zizlavsky (2016) study the innovation and financial performance of a company in the context of the Czech manufacturing industry. Their analysis revealed that the long-term financial performance of investigated companies is closely linked to their investment into innovation. Ivanová and Kordoš (2017) conducted a study on innovation policy of SMEs in Slovakia in the context of European Union innovation policy. Surprisingly, they found no effect of the type of innovation policy on firms, so there is no statistically significant difference between investing in different types of innovation. Also, enterprises do not prefer individual financial sources on equivalent bases. Besides, they concluded that the type of innovation is not dependent on the size of an enterprise.

Žižlavsky (2016) focused in his research on the measurement of innovation performance, the degree and the methods of its implementation in the Czech business environment. According to the author, there is a tendency to neglect an essential area of research and development for the future existence of companies and increase their competitiveness. The author states that many businesses still do not measure the performance of innovation, although innovation is the engine of growth in the company. Only a few companies have a capable system in place to measure complex innovation performance. Large enterprises benefit from better innovations. The advantage of SMEs in innovation processes is their flexibility, more efficient use of innovative inputs due to individual entrepreneurial abilities, and greater flexibility in production processes. Czech manufacturing companies show 77% (in 2014) irregularly and randomly innovated processes as a result of intuitive and immediate decision against negative development, respectively as an immediate reflection on the change in an external business environment. Only one-quarter of Czech businesses in 2014 implemented innovative processes as a standard part of their business activities, while systematically managing them. In Czech SMEs in 2014, companies most often invested 5% of their annual budget in innovation processes.

2. AIM, METHODOLOGY AND DATA

The paper's aim was to examine the dependence of the quality of the business environment on defined technological factors (availability of human capital and research and development infrastructure). Part of its goal was the comparison of the defined factors between the Czech Republic (CR) and the Slovak Republic (SR).

In connection with the stated research goal, a questionnaire survey was conducted among businesses operating in the SMEs segment. Through this research, 312 companies were surveyed in the Czech Republic and 329 companies in the Slovak Republic. Data collection took place in 2018. The random selection method based on the mathematical function "Randbetween" was used to select SMEs from "Albertina", the Czech Republic's business database. Slovak companies were randomly selected from the "Cribis" database of companies, organisations, and self-employed. Subsequently, SMEs were addressed via an email requesting to fulfil out an online questionnaire. The questionnaire was intended for the owners of the companies or the top managers of these companies (hereinafter referred to as "entrepreneurs").

The response rate in the Czech Republic was approx. 4% (the number of addressed entrepreneurs was more than 7800). The number of addressed businesses in the Slovak Republic was more than 9400. The response rate of completed questionnaires was approx. 3.5%.

The structure of respondents in the Czech Republic (312 entrepreneurs) based the region of residence: Zlín region: 49 entrepreneurs, Usti region: 27 entrepreneurs, Central Bohemian region: 14 entrepreneurs, Plzeň region: 22 entrepreneurs, Pardubice region: 17 entrepreneurs, Olomouc region: 26 entrepreneurs, Moravian-Silesian region: 17 entrepreneurs, Liberec region: 28 entrepreneurs, Hradec Králové region: 17 entrepreneurs, Region Vysočina: 25 entrepreneurs, Karlovy Vary region: 15 entrepreneurs, South Moravian region: 22 entrepreneurs, South Bohemian region: 16 entrepreneurs, Capital city Prague: 17 entrepreneurs. Business sector: Services: 109 entrepreneurs, Commerce: 73 entrepreneurs, Production: 53 entrepreneurs, Construction: 29 entrepreneurs, Agriculture: 9 entrepreneurs, Transport: 19 entrepreneurs, Other: 23 entrepreneurs. The length of operating a business: 56 entrepreneurs 1 – 5 years, 48 entrepreneurs 5 – 10 years, 208 entrepreneurs more than 10 years. Size: 258 micro-enterprises (up to 10 employees), 43 small enterprises (up to 50 employees), 11 medium enterprises (up to 250 employees). Highest education: 50 high school without a final exam, 135 high school with final exam, 127 higher education. Gender: 236 men, 76 women.

The structure of respondents in the Slovak Republic (329 entrepreneurs based on the region of residence: Prešov region: 76 entrepreneurs, Košice region: 75 entrepreneurs, Bratislava region: 56 entrepreneurs, Banská Bystrica region: 30 entrepreneurs, Žilina region: 28 entrepreneurs, Trnava region: 27 entrepreneurs, Trenčín region: 20 entrepreneurs, Nitra region: 17 entrepreneurs. Business sector: Services: 122 entrepreneurs, Commerce: 69 entrepreneurs, Production: 51 entrepreneurs, Construction: 39 entrepreneurs, Agriculture: 20 entrepreneurs, Transport: 11 entrepreneurs, Other: 17 entrepreneurs. The length of operating a business: 104 entrepreneurs 1 – 5 years, 78 entrepreneurs 5 – 10 years, 147 entrepreneurs more than 10 years. Size: 234 micro-enterprises (up to 10 employees), 71 small enterprises (up to 50 employees), 24 medium enterprises (do 250 employees). Highest education: 10 high school without final exam, 95 high school with final exam, 224 higher education. Gender: 251 men, 78 women.

Different technological factors were defined, in line with the definition by Conorto et al. (2014) through the following statements, which at the same time represent factors influencing the quality of the business environment in the SME segment. Individual factors were randomly assigned to the questionnaire to reach the highest level of objective responses.

In developing this paper, three scientific hypotheses were established:
H1: The availability and quality of human capital significantly influences the quality of the business environment.
H2: Research and development infrastructure has a significant impact on the quality of the business environment.

To evaluate the formulated hypotheses, the statistical regression analysis method was applied. The chosen method can be applied because all qualitative responses of entrepreneurs were transformed according to the Likert scale into quantitative data. The objective of the regression analysis is not to predict the future, but to quantify individual factors and subsequently verify their statistical significance for the quality of the business environment in selected countries. The linearity assumption was verified

by a graphical analysis (with scatter plot). Its purpose is to show the presence of non-linear pairs between the dependent variable (QBE) and selected independent variables (factors: TF1, TF2, TF11..., TF24). The assumption of the normal distribution of the variables (factors and indicators) was verified as follows: Calculation of descriptive characteristics (skewness and kurtosis for each variable) and Z-score calculation of these descriptive characteristics. If the resulting Z-score values were in the range of values from -2 to 2, then the assertion is that the variable meets the assumption of normal distribution. The verification of homoscedasticity was performed using the Bartlet test. By correlation matrix with correlation analysis, the pairwise variability between the variables was determined. Using t-tests, the statistical significance of the independent variable was verified (Factor - TF1, TF2 or TF11..., TF24) in the suggested regression model. Authors have designed regression models in a general shape (for each country) as follows:

Model 1: $\quad QBE = \beta_0 + \beta_{TF11} \times TF11 + \beta_{TF12} \times TF12 + \beta_{TF13} \times TF13 + \beta_{TF14} \times TF14 + e_i$,

Model 2: $\quad QBE = \beta_0 + \beta_{TF21} \times TF21 + \beta_{TF22} \times TF22 + \beta_{TF23} \times TF23 + \beta_{TF24} \times TF24 + e_i$,

Model 3: $\quad QBE = \beta_0 + \beta_{TF1} \times TF1 + \beta_{TF2} \times TF2 + e_i$,

where:

QBE – dependant value, β_0 – constant; $\beta_{TF11, ..., }$ β_{TF24}, β_{TF1}, β_{TF2} – coefficients of independent variables (TF1, TF2, TF11, …, TF24); TF1 a TF2 – technological factors, TF11, …, TF24 – indicators of technological factors; e_i – random component.

The significance of the obtained regression models is verified by regression characteristics such as the coefficient of determination, the adjusted coefficient of determination, the Student's test, the multiple coefficients of correlation, the residual standard deviation, and the F-ratio. The presence of multicollinearity in regression models is verified by the variance inflation factor (VIF). If the VIF value of the test is higher than 5, then the multicollinearity negatively influences the significance of the regression model. If regression coefficients of independent variables in regression models get positive, then the results indicate a positive impact on the quality of the business environment in the country. Due to the complexity of the above mentioned mathematical statistics, all of these tests are performed in the statistical data analysis software - IBM SPSS Statistics.

4. RESULTS AND DISCUSSION

The assumption of linearity and homoskedasticity is met for all variables. The assumption of normal distribution is not met for the variables (CR: TF12, TF21 and SR: TF11, TF14, TF21). Due to a large number of addressed entrepreneurs (more than 100) in both countries, it is possible to further test the indicators in another statistical analysis.

The following table (Table 1) summarises the pair correlation coefficients between dependent and independent variables for Model 1, Model 2 and Model 3.

Table 1 **Correlation matrices between variables by selected countries**

	Czech Republic					Slovak Republic				
	QBE	TF11	TF12	TF13	TF14		QBE	TF11	TF12	TF13	TF14
QBE	1					QBE	1				
TF11	0,2205	1				TF11	0,2494	1			
TF12	0,1456	0,6059	1			TF12	0,3243	0,6009	1		
TF13	0,2775	0,4581	0,4620	1		TF13	0,2751	0,3402	0,3730	1	
TF14	0,2183	0,3049	0,3303	0,2979	1	TF14	0,2438	0,3825	0,4172	0,5162	1
	QBE	TF21	TF22	TF23	TF4		QBE	TF21	TF22	TF23	TF4
QBE	1					QBE	1				
TF21	0,1917	1				TF21	0,2249	1			
TF22	0,2228	0,4623	1			TF22	0,3130	0,5439	1		

TF23	0,2085	0,2227	0,2719	1		TF23	0,3000	0,2867	0,3775	1	
TF24	0,2045	0,3835	0,3318	0,1648	1	TF24	0,2047	0,2779	0,3870	0,3460	1

	QBE	TF1	TF2		QBE	TF1	TF2
QBE	1			QBE	1		
TF1	0.2895	1		TF1	0.3578	1	
TF2	0.2984	0.3300	1	TF2	0.3599	0.4464	1

(Source: own calculation)

The results (Table 1) show weak and moderate dependencies between the quality of the business environment and selected indicators of technological factors.

Despite the positive result of the correlation analysis between variables, the regression modelling is approached. Table 2 (Model 1), Table 3 (Model 2) and Table 4 (Model 3) summarise the basic regression characteristics and regression parameter estimates, and verify their statistical significance and the relevance of regression models.

Table 2 **Verification of the statistical significance of the indicator "Availability and quality of human capital"**

Czech Republic					Slovak Republic				
Least squares multiple regression									
R^2				0.1066	R^2				0.1369
Adjusted R^2				0.0949	Adjusted R^2				0.1263
Multiple correlation coefficient				0.3265	Multiple correlation coefficient				0.3701
Residual standard deviation				0.5301	Residual standard deviation				0.5299
Regression equation									
P	Coefficient	Std. Error	t-Stat	p-value	P	Coefficient	Std. Error	t-Stat	p-value
Const					Const				
TF11	0.1395	0.0782	1.7845	0.0753	TF11	0.0469	0.0668	0.7020	0.4832
TF12	-0.0841	0.0791	-1.0635	0.2884	TF12	0.1255	0.0701	3.2163	0.0014
TF13	0.2368	0.0707	3.3470	0.0009	TF13	0.1474	0.0615	2.3956	0.0172
TF14	0.1434	0.0591	2.4269	0.0158	TF14	0.0555	0.0593	0.9367	0.3496
Analysis of variance									
F-test				9.158	F-test				12.852
P-value				5.31E-7	P-value				1.01E-9

[*] R^2: coefficient of determination; $\alpha = 0.05$ (α – significance level).

(Source: own calculation)

A statistically significant indicator of QBE in both countries is that universities are preparing high-quality graduates who are fit for use in the corporate sector (TF13). Another important factor in the Czech Republic is that there are enough skilled workers in the labour market that are fit for use in the corporate sector, and in the Slovak Republic, secondary schools prepare enough high-quality graduates for the companies' needs.

Table 3 **Verification of the statistical significance of the indicator "Infrastructure for research and development"**

Czech Republic		Slovak Republic	
Least squares multiple regression			
R^2	0.0918	R^2	0.1404
Adjusted R^2	0.0800	Adjusted R^2	0.1298

Multiple correlation coefficient				0.3030	Multiple correlation coefficient				0.3747
Residual standard deviation				0.9610	Residual standard deviation				0.9280
Regression equation									
P	Coefficient	Std. Error	t-Stat	p-value	P	Coefficient	Std. Error	t-Stat	p-value
Const					Const				
TF21	0.0767	0.0815	0.9400	0.3479	TF21	0.0553	0.0679	0.8147	0.4158
TF22	0.1475	0.0806	1.8310	0.0681	TF22	0.1981	0.0674	2.9395	0.0035
TF23	0.1871	0.0741	2.5247	0.0121	TF23	0.2073	0.0607	3.4139	0.0007
TF24	0.1540	0.0777	1.9822	0.0483	TF24	0.0518	0.0619	0.8371	0.4032
Analysis of variance									
F-test			7.757		F-test				13.231
P-value			5.75E-6		P-value				5.38E-10

* R^2: coefficient of determination; $\alpha = 0.05$ (α – significance level).

(Source: own calculation)

A statistically significant indicator of QBE in both countries is that research and development results help entrepreneurs (TF23). Another important factor in the Czech Republic is that the support of research and development by the state has an upward trend (TF24), and in the Slovak Republic, the factor that the support of research and development by the state is good (TF22).

Table 4 **Verification of the statistical significance of the indicator "Quality of the business environment"**

Czech Republic					Slovak Republic				
Least squares multiple regression									
R^2				0.1300	R^2				0.1781
Adjusted R^2				0.1244	Adjusted R^2				0.1731
Multiple correlation coefficient				0.3606	Multiple correlation coefficient				0.4220
Residual standard deviation				0.9375	Residual standard deviation				0.5047
Regression equation									
P	Coefficient	Std. Error	t- Stat	p-value	P	Coefficient	Std. Error	t- Stat	p-value
Const					Const				
TF1	0.0782	0.0205	3.8132	0.0002	TF1	0.0805	0.0183	4.3896	0.0000
TF2	0.1054	0.0260	4.0508	0.0001	TF2	0.0914	0.0205	4.4545	0.0000
Analysis of variance									
F-test			23.088		F-test				35.322
P-value			4.51E-10		P-value				1.3E-14

* R^2: coefficient of determination; $\alpha = 0.05$ (α – significance level).

(Source: own calculation)

The results (Table 2, Table 3, and Table 4) show that all regression models in both countries are statistically significant because the F-ratio values are below the set level of significance. Negative phenomena such as multicollinearity are not present in the regression models. The values of the adjusted determination coefficients are low (ranging from 0.8 to 17.31), thus indicate that the selected factors explain a maximum of 17.3% of the variability of entrepreneurs' responses to the quality of the business environment in the country.

The regression models for each country acquire the following shapes:

- Czech Republic:

Model 1: $QBE = 0.2368 \times TF13 + 0.1434 \times TF14,$

Model 2: $QBE = 0.1871 \times TF23 + 0.1540 \times TF24,$

Model 3: $QBE = 0.0782 \times TF1 + 0.1054 \times TF2,$

- Slovak Republic:

Model 1: $QBE = 0.1255 \times TF12 + 0.1474 \times TF13,$

Model 2: $QBE = 0.1981 \times TF22 + 0.2073 \times TF23,$

Model 3: $QBE = 0.0805 \times TF1 + 0.0914 \times TF2,$

All regression coefficients of both indicators and factors are positive, i.e. have a positive impact on the quality of the business environment in the selected country. Based on the above calculations, hypothesis H1 and hypothesis H2 are accepted.

CONCLUSION

The paper's aim was to examine the dependence of the quality of the business environment on defined technological factors (availability of human capital and research and development infrastructure). Part of its goal was the comparison of the defined factors between the Czech Republic (CR) and the Slovak Republic (SR).

Formulated technological factors (research and development infrastructure, availability and quality of human capital) positively affect the business environment in both countries. Research and development infrastructure has a stronger impact on the quality of the business environment than the availability and quality of human capital in both countries. The most important indicator that positively influences the quality of the business environment in the Czech Republic is that universities are preparing high-quality graduates who are fit for use in the corporate sector. The most important indicator that positively influences the quality of the business environment in the Slovak Republic is that the research and development results help entrepreneurs. On the other hand, it is necessary to take into account that the quality of the business environment is also influenced by other factors not mentioned in this case study.

The research has some limits, but it has brought interesting findings and possible inspiration for further research focused on the quality of SMEs' business environment.

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MANAGEMENT OF TRAVEL AND TRANSPORT DESTINATIONS' PRESENTATION IN THE TRAVEL SPECIALIZED PRINT MEDIA

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ABSTRACT

The article presents the results of the quantitative and qualitative research of presentation of the selected travel and transport destinations in the travel specialized print media with the focus on the impact of the ownership structure and geographical affiliation. The authors accomplished two research goals: firstly, they examined the scale of popularisation of travel destinations in two contexts: the geographical one (division into continents, countries and cities) and the chronological one (investigating changes in popularising particular travel destinations and referring them to the broader political or social context of a given time). Secondly, they indicated the differences or similarities in the selection of the destinations at the macro-level (among magazines, i.e. their editorial policies or affiliation to publishing companies) and at the micro-level (between the main and supporting cover stories). The results show that the selection of destinations displayed on the front covers of magazines is related to their editorial policy, which is secondary related to the ownership structure.

INTRODUCTION

Tourism is subject to mediatisation, i.e. "a universal social process (...), meaning the adjustment of activities of various entities to the conditions defined by the specificity of the media's influence" (Oniszczuk, 2011, p. 13). With reference to the tourist sector, it concerns experiences of tourists, mutual influence of real and simulated experiences and the role of tourist agencies in creating media messages (Cohen & Cohen, 2012). Travel journalism, seen as "intersection between information entertainment, journalism and advertising", has an undeniable role in tourism mediatisation (Lizzi, Cantoni & Inversini, 2011, pp. 356). Its role is growing with the importance of the industry, especially in such aspects as, for example, the study of the socio-cultural impact of tourism on society or the analysis of the idea of free time as a social practice (Fursich & Kavoori, 2001). Analyzing the evolution of travel journalism, Folker Hanusch lists its interdisciplinary dimensions (2010): cultural (presenting foreign cultures); market (the range of information or entertainment presented to recipients); ethical (the impact of PR materials on journalists and on the rules of cooperation with business partners); motivational (critical or approving of tourism).

Dissemination of information, inspiring recipients, valorising tourist products and creating opinions about them are the most important duties of travel journalism, and thus of the media, which carry the effects of journalistic work (Kruczek & Walas, 2004). Diversified tasks of the media, their ubiquity and influence on recipients make them an important element of tourism, from information policy of its subjects, to opinion formation.

1 THE MEDIA AGAINST THE BACKGROUND OF SOURCES OF TRAVEL INFORMATION

The media are one of the sources of travel information. Others, non-media ones, include contacts with friends or family (the so-called word of mouth), advice of tour operators, promotional materials (leaflets, brochures), guidebooks, fairs and exhibitions (Sarma, 2007).

In 2009, Rafał Marek claimed that the Internet will be "the most important source of presentation of tourist offers" (2009, p. 127). These words turned out to be prophetic: today it is "the main communication channel for the tourist sector, as shown by the average number (...) of people seeking information before making a trip" (Drozdowska & Duda-Seifert, 2016, p. 2). This is confirmed by industry reports: e.g. IAB Polska reports that the Internet is the most useful source of information: behind it are recommendations of friends and family, advertising, television, the press, radio, leaflets, folders and expert statements (2015). This context supports the conclusion of Robert Wolny, who claims that "this is how information is obtained by (...) almost half of respondents using e-tourism services" (2015, p. 413-414). The above data coincide with the global trend indicating the high position of the Internet: Oxford Economics research shows that 63% of Europeans believe in online news, another 34% pay attention to travellers' opinions and ratings, 17% gain knowledge from service providers, and 12% – from social media (Szypuła, 2017).

In view of the above, it can be concluded that the Internet prevails over traditional media (also in terms of broadcasters offering travel content, e.g. blogs, vlogs, social media, portals and specialized vortals). This does not mean, however, that by dominating them, it causes their decline. It should be emphasized that in each of the reports, important sources of knowledge are the recommendations of friends or family and people's own experiences as tourists. The effectiveness of interpersonal contacts in tourism is confirmed by scientific research (Mack Blose & Pan, 2007), which sometimes questions the direct impact of online content on purchasing decisions. For example, Serena Volo claims that "there is little evidence that the future travel intentions of the readers of these travel blog are significantly influenced by the blog narratives" (2010, p. 12). Also in the IAB Polska report, in the area of effective impact on recipients, the Internet is second only, but the results of traditional media are also significant: for 51% respondents television is the impulse for shopping, the press for 45%, and radio for 32% (2015). This means that while the Internet is a popular source of information, other ways of acquiring knowledge turn out to be valuable in the final stages of making decisions. Here it is worth referring to the research from 2014, in which respondents indicated, among others, such sources of travel ideas as recommendations, travel programmes, books, films, the press, recommendations from travel agencies, and advertising in the media (VMG PR, 2014). The Internet was at the end of the list, which was commented: "This shows a clear trend – we want to make individual decisions that meet our needs. We prefer the quality of recommendations over their number – not forums and anonymous opinions, but recommendations of relatives and independent searching for information" (ibid, p. 4).

In the face of a convergent and chaotic communication polyphony, it is optimal for the recipient to use a lot of data. It makes it possible to compare offers, broaden knowledge about selected destinations or check the reliability of published content. The practice of reaching for a combination of information sources (so-called "information search strategies") is common in tourism, and its research has been conducted for many years (Gursoy, 2011). Such behaviour patterns can also be noticed in Poland, as

evidenced by Ingvar Tjøstheim, Iis P. Tussyadiah and Sigrid Oterholm Hoem. According to them, the sources of information which are complementary to the Internet include friends and family, guide books as well as TV and press materials (2007). Traditional media are still an important element of the tourism sector, still playing a significant role in the process of searching for travel information. Among them are TV channels (Discovery, National Geographic), TV programmes (in Poland, for example, "Boso przez świat"), radio programmes ("Reszta świata" in Pierwszy Program Polskiego Radia SA), sections in advice and lifestyle magazines, as well as travel magazines, which focus entirely on getting to know and discovering the world.

1.1 Printed travel magazines

Christine A. Vogt and Daniel R. Fesenmaier (1998) claim that the informational needs of tourists are of a functional nature (among listed here are the need for knowledge and the usefulness of the acquired information), innovative (creativity, diversity), aesthetic (fantasising), symbolic (social interactions) and hedonistic (e.g. emotionality, phenomenology).

According to Dale Fodness and Brian Murray, travel magazines play a functional role, i.e. they are used because of the systematically delivered knowledge. Thanks to them, planning a trip is easier: „The use of newspapers and magazines to plan a trip suggests a strategy in which information acquisition occurs on a relatively regular basis irrespective of impending purchase, i.e., ongoing search (1998, p.115). Kathleen L. Abdereck (2007) heads towards hedonism and aesthetics; she stresses that the first motivation is about enjoying the search itself, and the second one is the need to see the place, or, in other words, its visualization. In this way, magazines arouse interest of recipients and make it easier for them to make decisions. Eduardo Brito-Henriques (2014, p. 323) also writes about the pleasure resulting from the use of the travel press, recognizing that „many readers (…) merely use magazines as a means to relax and withdraw themselves and to enjoy the pleasure of a disembodied experience of exotic places".

Madelene R. McWha, Warwick Frost, Jennifer Laing and Gary Best emphasize that travel journalists go beyond reporting, since they take up political, social or cultural issues. Thanks to this, they have "a persuasive power to mediate foreign cultures and destinations and could potentially influence their readers' views" (2016, p. 86). They use language means whose task is to engage the recipient and encourage them to experience the journey. Such narrative has "the ability to mentally transport the reader to an imaginary landscape" (ibid., p. 87).

Photographs are an important element of every magazine as well as an effective tourist marketing tool (Farahani et al., 2011). Photographs, and stories accompanying them, influence the readers most strongly. According to Woojin Lee and Kathleen Andereck, they form a general impression of the usefulness of the magazine, which in turn supports the decision-making process of the recipients and at the same time transfers to the image of the magazine as a consultant and sources of information (2010). Arturo Molina and Águeda Esteban write about their role in the informative and decision-making context, claiming that the attractiveness of the place shown in the pictures may encourage and motivate readers to choose a destination or set out on a journey (2006). It should be added that the condition for the full impact of images is their coherence with the text, because its lack negatively affects the memorisation and assimilation of content (Hsu & Song, 2013).

1.2 The front cover of an illustrated magazine

One of the most important elements of each magazine is its front cover. It is considered a showcase of the press brand and at the same time a packaging of its content (White, 1982), which has more recipients than the magazine itself (Brzoza, 2016). It strengthens the competitiveness of the title, guarantees its variability (e.g. updated cover stories) and stability (e.g. layout) at the same time. It has the following functions (Jupowicz-Ginalska, 2017a):

a) information and promotional – provides information about the content of the magazine, date, price; it creates the image of people, products and services appearing on it; is the subject and object of promotion (it is part of communication activities in itself);

b) ideological – divided into culture-forming (comments on social, political, cultural, religious phenomena) and educational (inspires to broaden knowledge); According to Sammye Johnson and Carlos A. de Lozano, it refers to current events, thus becoming "a historical artifact" (2002);

c) relational – broken down into communication (builds interaction with the reader through direct phrases and metaphorical formulations) and entertainment (entertains, relaxes);

d) innovative – modernises the magazine, introducing unusual design and technical solutions (e.g. covers enhanced with VR technology);

e) protective – secures the content of the magazine;

f) financial – affects the purchase of the magazine by readers (first it draws the attention of recipients, then encourages to browse the magazine, and finally affects shopping decisions: in other words, the fate of the magazine is largely determined by what will be on its front page).

A particularly important part of front covers are cover stories, which take graphic-text forms and thus represent the content of the whole magazine (Jupowicz-Ginalska, 2017b). They are divided into the main ones, exposed in the most visible way (the largest picture and noticeably separated text) and the supporting ones (based on the text itself or simple graphics, rarely on an additional photo). The role of the main cover story, regarding its size, is to maximally draw attention to the magazine and encourage people to browse through it. Supporting stories have a strengthening and complementary function. They can influence recipients' decisions if the impact of the main topic turns out to be insufficient. However, due to smaller graphics and texts and because there are more of them, they require concentration and perceptiveness.

Of course, front covers also consist of other elements. Ben Wasike adds the logo with the name of the magazine (2017), while David E. Sumner and Shirrel Rhoades exchange the tagline, price, barcode, date of issue and website address (2016).

The front cover is important for every participant in the publishing process. Taking on the one hand its importance and interdisciplinarity (it can be analysed, for example, from the media, linguistic, marketing and economic perspective), on the other – the mediatising role of travel magazines in tourism, and on the third – the position of tourism sector, the author decided to combine these three threads and explore the role of the front covers of Polish travel magazines.

2 RESEARCH METHODOLOGY: DESCRIPTION OF THE RESEARCH SAMPLE, OBJECTIVES AND HYPOTHESES

The author's goal was to select magazines with a comparable subject and position, while differentiating them due to the genealogy of the brand. Hence, "National Geographic Traveler" (NGT) and "Podróże" were chosen as the subject of the analysis.

The title selection key was based on the following categories:

a) readership level – the titles are the only ones in their thematic category to appear in the summary of the Polish Reading Research (CCS[1] index for "NGT" was 1.0%, for "Podróże" – 1.2%[2]);

b) average circulation per issue – in December 2017 for "Podróże" it was 19,600 copies, for "NGT" – 29,100 copies (Teleskop.org.pl, 2017);

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[1] The seasonal cycle readership (CCS) – the percentage of respondents who came across the title at least once during the seasonal cycle of the title (PBC, 2018).

[2] Other magazines, e.g. "Poznaj Świat", were not included in the analysis as they do not appear in the ranking (PBC, 2018).

c) sales of printed editions – in December 2017, for "Podróże", it was 6,664 copies, for "NGT" – 17,293 copies (Teleskop.org.pl, 2017);

d) affiliation to publishing companies – „Podróże" is published by a Polish group TIME SA, while „NGT" by Burda Publishing Polska Sp. z o.o. („Podróże" is known on the domestic publishing market, whereas „NGT" in the world, for example due to the brand „National Geographic");

e) publishing cycle and subject matter – the magazines are travel monthly magazines, where:

- "NG: Traveler" has been published in Poland since 2005 (in the world since 1984), initially as a bimonthly. It is one of 12 national editions of the title. It is addressed to "active people who are curious of the world and its natural, architectural and cultural attractions" (Burdamedia.pl a, 2018). The magazine consists of reportages, tips and "adventure" type of material. Its opinion-forming function is emphasized: "Traveler sets travel trends. It indicates unobvious destinations, which become fashionable. Sometimes it creates these trends" (Burdamedia.pl b, 2018, p. 3).

- „Podróże" has been published since 1998, first as a bimonthly. The publisher puts emphasis on the informative and cognitive values of the magazine, tips and recommendations, targeted at people "looking for inspiration for trips, not only on holiday" (Grupazpr.pl, 2018). The editor-in-chief of the magazine claims: "We want to encourage travel, suggest ideas, solutions, advice (...) Our magazine is for those who organize trips individually, on their own and want to know something about the place they are going to. We try to prepare suggestions for a centralized group of recipients. These trips are neither luxurious nor extreme; they are for everyone." (Kłopotowska, 2015).

The front covers of both magazines available on the publishers' websites were analysed, including the period when they appeared as bimonthlies. In this way:

a) for "NGT" – from 2006 to the end of 2017, after rejecting unreadable or inaccessible covers, 110 covers were studied (National-geographic, 2018);

b) for „Podróże" – from 2007 r. do the end of 2017 r., after rejecting unreadable or inaccessible covers, 124 covers were studied (Podroze.se.pl, 2017).

The covers were not totalled up, as each magazine was analysed separately and the analysis categories were the same for both titles.

The main objective of the quantitative analysis (enriched with the qualitative analysis) was to research the scope of exposure of travel destinations through main and support cover stories.

The specific objectives of this article were:

a) researching the scale of popularization of travel destinations in a geographical context (division into continents, countries and cities, with reference to other attractions) and a chronological context (in the adopted time interval of the analysis, with reference to changes in the popularization of particular directions of travel and their reference to the broader political or social context prevailing at that time);

b) indicating differences or similarities in the selection of the destination at the macro-level (among magazines, i.e. their editorial policies or affiliation to publishing companies) and at the micro-level (between the main and supporting cover stories).

The specified goals were used to verify the following hypotheses:

H1. The front covers of "NGT" and "Podróże" differ in destinations presented in the main and supporting cover stories: it is assumed that "Podróże", due to its affiliation to the Polish publisher, will refer to Poland more often, while "NGT" will refer to exotic directions, not necessarily in Europe.

H2. Covers are the quintessence of the magazine's editorial policy: it is believed that "NGT" more often than "Podróże" emphasizes the discovery of exotic and extraordinary areas.

H3. Magazine covers are "historical artefacts", that is, their content is a reflection of the global political, cultural or economic situation: it is assumed that events in Egypt, Libya or Syria have affected the cover content (these countries were replaced other, more stable ones, for example in Central and Eastern Europe).

3 PROBLEM SOLUTION – RESULTS

The subjects of the main and supporting cover stories were not only continents, countries, cities but also geographical lands. It should be clarified that when for example a country was mentioned on the cover, its continental affiliation was not always mentioned (just like cities were not located in countries). To average the results, the author assigned the directions to their geographical origin. She arranged the obtained results and arranged them chronologically for each of the continent, later she placed them on world maps (for the main stories); for supporting stories, tables were used. Antarctica and the Arctic were omitted in the lists, because the total number of their indications was negligible.

3.1 Recommended destinations in main cover stories

3.1.1 Indications of destinations on the covers of "NGT" in the years 2006 – 2017: main cover stories

On the basis of Graph 1, it can be stated that currently the most exposed travel destinations are European and Asian locations. The sharp rise in their popularity falls in the years 2011 – 2012. It can be seen that this is a growing trend (apart from declines in 2014).

Graph 1 **"NGT": the number of indications for each destination promoted on the covers of the magazine in the years 2007 – 2017**
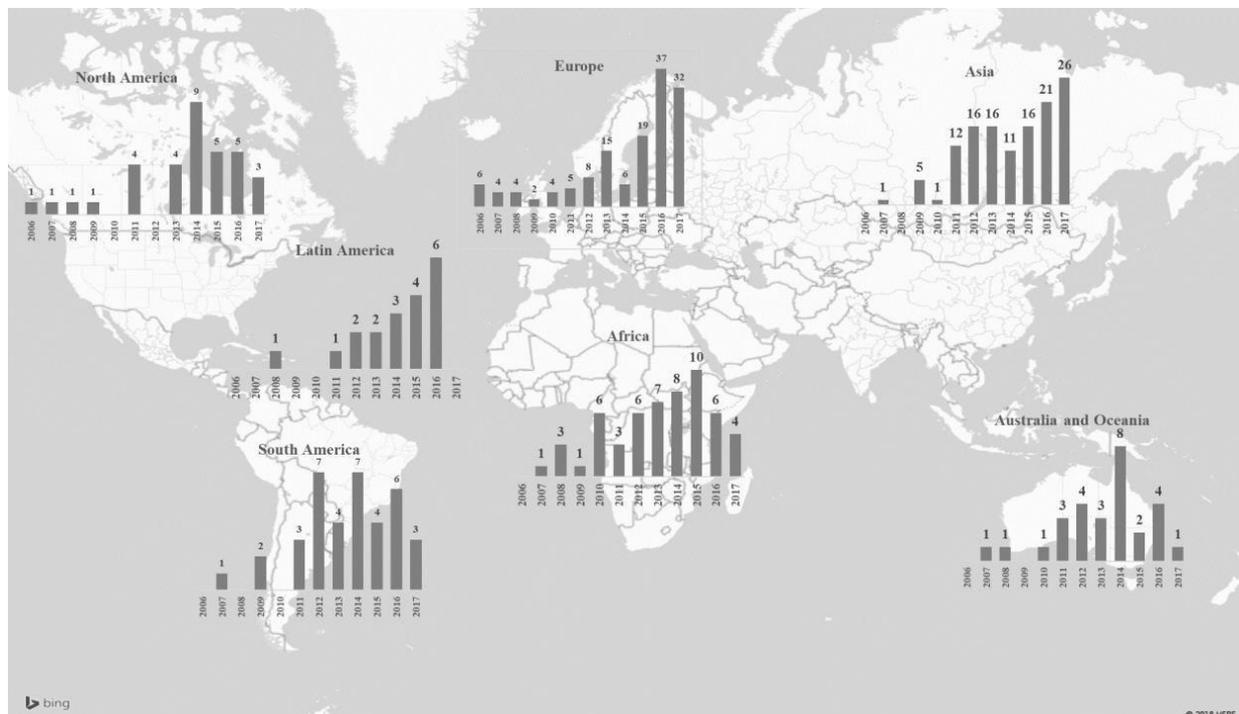
(Source: Author (for this study))

As far as Europe is concerned, in recent years there was an increase in interest in the destinations considered as the domain of mass tourism (in the past, they rarely or never appeared in "NGT"). These destinations are:

a) Italy – in 2008 mentioned once, while from 2012 to 2017 as many as 13 times (including several mentions of Venice, Rome, but also less obvious Bari or Cinque Terre);

b) Spain – in 2006 described twice, while 16 times since 2012 (usually Barcelona and the islands, for example the Canary Islands or Balearic Islands);

c) France – until 2010 it appeared 5 times altogether, and since that time 14 times (mostly as Paris, Provence, or generally as a country);

d) Greece – it was on the cover 10 times since 2013 (as a country, Crete, the Cyclades, Santorini)

e) Croatia – appeared five times since 2011 (as a country rather than attractions)

f) Turkey and Portugal (each of them four times in the years 2012 – 2016)

Recently, "NGT" more often indicated directions outside the list of "holiday" destinations. These are Albania (twice in recent years, earlier once), Belarus (once in 2017), Bulgaria (once in 2016), the Czech Republic (once in 2017), Iceland (five times in 2014 – 2017), Romania (twice in 2017, earlier once), Ukraine (four times in 2015 – 2017), Germany (four times in 2016 – 2017, including Berlin and Bavaria) or Hungary (twice in 2015 – 2017). Norway was keenly supported by the magazine (10 publications in total, eight of them since 2011, usually as a country).

How is Poland presented on this background? In the years 2007 – 2010, three mentions appeared about it, and since 2011 – as many as 10. In this country, the publisher focused on lands (Podlasie, Warmia, Kashubia, Roztocze), less on cities (e.g. Wrocław, Gdańsk, Poznań, Warsaw). Taking into account the number of publications on European countries, it can be concluded that Poland is ranked in the middle in this respect.

Asia, on the other hand, is presented either as a continent or a geographical region, e.g. Borneo or Mekong. There are also non-standard destinations, e.g. Sipadan and Pamir. In this context, Asia was mentioned 13 times (since 2011 seven times). Among the most popular countries on this continent one can indicate:

a) China – altogether is appeared 11 times, and since 2011 – 10 times (Beijing and Hong Kong were the main attractions);

b) India – since 2011 appeared 13 times in the "NGT" (most often as a country, but there were mentions about Mumbai, Kerala, Rajasthan or Bollywood);

c) Japan – it was mentioned eight times, once before 2011 (usually as a country);

d) Indonesia – since 2011 it appeared seven times, including twice in 2015, 2016 and 2017 (it was mainly exposed as a country, but also Bali);

e) Thailand – it was mentioned six times since 2011;

f) Georgia and Burma – since 2011 they were on the covers of "NGT" five times (as countries);

g) Vietnam, Sri Lanka, Nepal – four times since 2011 times (as countries).

Over the past two years, Kyrgyzstan, Kazakhstan and Uzbekistan were more eagerly exposed. Since 2013, the United Arab Emirates (Dubai, Abu Dhabi), Tibet, Cambodia, Iran and Singapore appeared among destinations. The years 2016 and 2017 are the search for new directions, e.g. Israel (Tel Aviv), Jordan, Colombia (Bogota) and Malaysia (three times during this time).

It can be said that the publisher of "NGT" attaches greater importance to Central America (this is visible since 2011, before which these directions were mentioned rarely or not at all). What is particularly worth emphasizing is the increase of popularity of Cuba, which appeared in 2008 once, but since 2011 as many as five times (three times as Havana). In 2016, Martinique was shown on the covers twice; The Caribbean also turned out to be equally popular (three times in the abovementioned research period). "NGT" also encouraged its readers to visit Panama, Nicaragua, Honduras and Jamaica.

South America enjoys changeable attention of the editors, although since 2011 the number of cover mentions did not fall below three a year. The most common were: Brazil (six times since 2012, with reference to the country or Rio de Janeiro), Chile (six times, including five times since 2010, with attractions such as Torres del Paine, Valparaiso, Rapa Nui), Peru (six times, in 2016 three times). The continent also appears as a whole: either as South America or Patagonia (six times since 2011). The editors also promote unobvious directions, such as Ecuador, Bolivia, Guatemala and Venezuela (since 2011).

Among the destinations of North America, the leader is the USA, which was mentioned 19 times. The magazine refers to states (California, Alaska), cities (New York, San Francisco, Chicago) and specific attractions (Route 66, Yellowstone). Since 2011, Mexico appeared in the magazine eight times and Canada six times since 2007.

The most popular destinations of Australia and Oceania were Australia (six times since 2013), New Zealand (seven times, since 2013 – six) and French Polynesia (six times since 2011, e.g., the Marquesas Islands, Mangareva, Tahiti). The magazine also showed interest in Papua New Guinea (three times until 2014) and exotic Vanuatu (twice until 2014).

Africa is an interesting case. In 2011, there was a clear decline in interest in this continent. Since 2012, it was slowly being rebuilt, although in 2016 the trend collapsed again. Here, "NGT" most often mentioned Morocco (in total seven times, but since 2012 six times, most often as a country). Since 2013, South Africa appeared six times (mostly as a country), and Ethiopia – three times (since 2008). Until 2011, references were made to Liberia, Nigeria, Somaliland and Mali; however, since 2011 these countries were not mentioned anymore. In recent years, "NGT" exposed Mauritius (three times), Tanzania (three times, including the Seregenti national park), Tunisia, Seychelles, Senegal, Madagascar, Angola, Benin and Gambia. Egypt, once one of the most frequently chosen directions in the past, appeared in "NGT" once in 2013 while presenting Alexandria.

3.1.2. Indications of destinations on the covers of "Podróże" in 2007 – 2017: main cover stories

In the case of "Podróże", similar trends can be indicated as in "NGT" (Graph 2). First, there is a systematic increase in support for European trends. Secondly, Asia is gaining popularity (which did not fall below 5 publications since 2009).

Graph 2 **"Podróże": number of indications of each destination promoted on the covers of the magazine in 2007 – 2017**
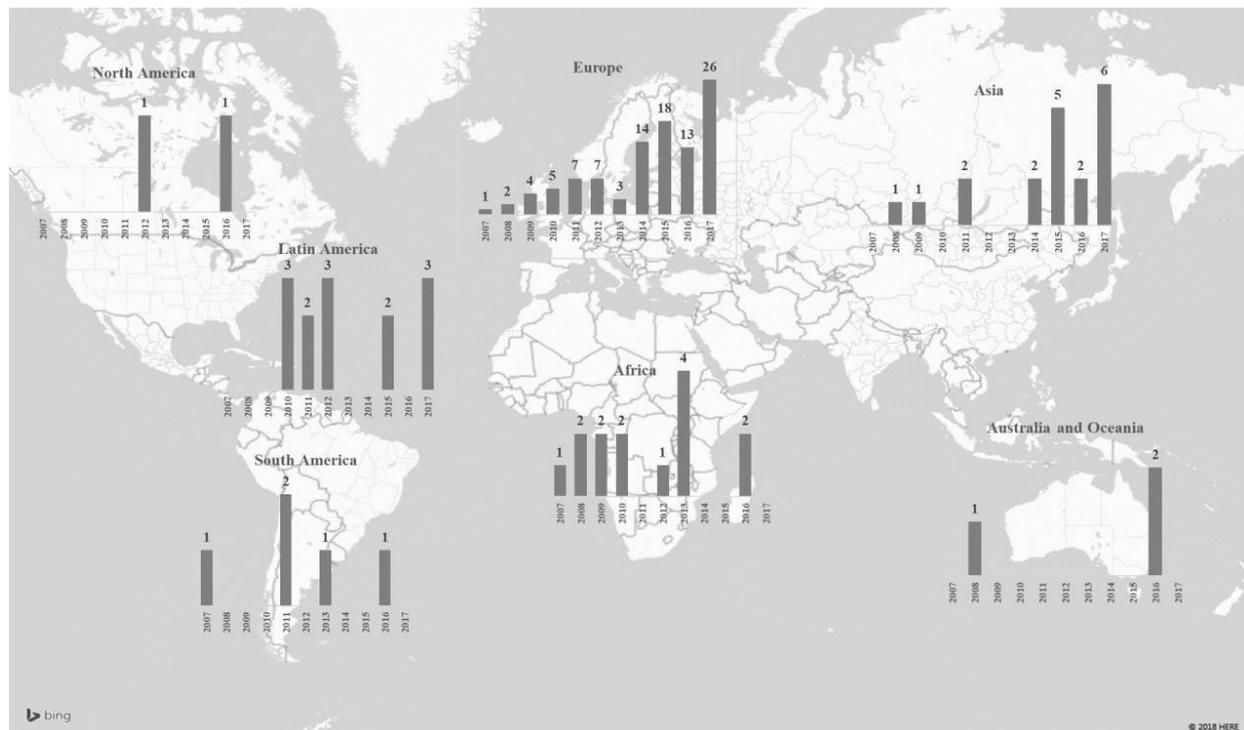
(Source: Author (for this study))

The countries that were most often mentioned are:

a) Spain – 28 times since 2010 (in 2010 and 2011, 13 times in total); apart from the country itself, references were made to Andalusia, Madrid, Mallorca, Tenerife and Ibiza, Sierra Nevada, Valencia, La Gomera, and Camargue;

b) Italy – 27 times since 2008 (and e.g. in 2017 as many as five times); here as a destination the whole country was recommended, but also Tuscany, Sicily, Marche, Lake Garda and Pantelleria;

c) Portugal – 20 times since 2008; the biggest attractions were the Algarve, Lisbon, Tejo, the Azores and Porto Santo;

d) Poland – 22 times since 2007 (only in 2016 – 2017 eight times); readers were encouraged to visit the country as such, but also Masuria, the coast, Krakow, Świnoujście, Cieszyn (so you can see that the country was supported willingly and more often than by "NGT");

e) Balkan states – since 2011 Croatia appeared 7 times (as a country, Dubrovnik or Zagreb); Albania and Montenegro 3 times; Macedonia and Bosnia and Herzegovina twice; Serbia once (it is worth adding that some countries received support since 2015, although the Balkans were described as a land since 2012, six times so far).

Destinations such as Greece, France and Turkey were less popular. Since 2009 Hellas appeared on eight covers; France had 10 exposures since 2010 (mainly Paris, Provence and Corsica), and the European part of Turkey – four since 2011 (the Asian part was mentioned five times in years 2012 – 2013). The United Kingdom was in no better situation (five times since 2012, with the promotion of London and Scotland), Cyprus (three times since 2015), the Netherlands and Denmark (twice).

The last three years of research is marked with the growing support for Poland's neighbours: the Czech Republic (twice in 2017, with the previous reference to this country from 2012), Germany (eight times since 2012, most often in the context of Berlin); Belarus (in 2017), Lithuania (in 2014) and Slovakia, which was on the cover of "Podróże" six times.

Since 2015, the magazine systematically referred to Austria, and more recently to Romania, Iceland, Norway, Switzerland, Hungary (mainly Budapest), Sweden and Slovenia (this country regained the

magazine's interest in 2015) Thus, it can be seen that the publisher is looking for new destinations and trying to differentiate the content of the main cover stories.

As for Asia, there was an increase in interest in Indonesia (in total seven times, and in 2016 four times; Bali and Java were exposed); China (eight times since 2007, mainly in the context of Shanghai and Hong Kong). To a lesser extent, in recent years, Thailand was referred to (four times since 2011), India (since 2013 three times), Laos (twice), Tibet and Vietnam (each country once since 2011). In the last three years, the publisher also pointed to Taiwan, Nepal, Japan and South Korea.

The situation of Africa is interesting: here too, 2011 was a breakdown of support for this continent. The exception is 2013, when Africa tried to rebuild its presence on the covers; however, as proven in subsequent years, it was not very effective. As an attraction, the Nile appeared, not affiliated to any country (three times until 2010), the Sahara and the savannah. The countries which are worth pointing to are Tunisia and Morocco (three times each, with the trend disappearing since 2013), Tanzania (twice, together with Djerba and Zanzibar) and once: South Africa, Kenya, Ethiopia and Mauritius.

In Central America, the places which were promoted most were Cuba (since 2010), the Caribbean and the Dominican Republic (each four times during the entire research period) and Jamaica. South America is Peru (twice since 2011) and Argentina (Buenos Aires). Considering North America, it was most encouraged to visit Mexico (three times) and the US (five times since 2007, with the emphasis on Florida, California and New York).

Australia and Oceania were presented as islands (the Cook Islands, Papua New Guinea and, generally, the Pacific Islands). It should be noted that for this continent (as well as for the Americas) it is difficult to indicate unambiguous trends due to the small number of publications. It can be concluded that in recent years Latin American or North American destinations were more often presented, but this is assumption needs to be made carefully and requires verification in the future.

3.2. Recommended destinations in supporting cover stories

3.2.1 Indications of destinations on the cover of "NGT" in years 2007 – 2017: supporting cover stories

On the covers of "NGT" a total of 828 supporting stories appeared (in some editions their number reached even 10 – 14 threads). As can be seen in Table 1, Europe and Asia generated the greatest interest; Africa was in the third place. The remaining continents were less frequent on the front pages (a small upward trend can be observed only for North America).

Table 1 **Supporting stories in "NGT" years 2006 – 2017 (percentage distribution)**

(Source: Author (for this study))

The Old Continent was most often written about, although over the years its dominance was diversified. It was particularly popular in 2006 – 2009, 2011 – 2012, 2014 and 2017 (in each of these cases, a minimum of 50% of the analysed content was devoted to Europe). Among the most popular destinations were, among others:

a) Poland – 53 publications, which gives the country priority in the ranking (up to 2010, there were 13 references, and since 2011, Poland was described several times a year, e.g. seven times in 2017); the articles promoted cities (Gdańsk, Gdynia, Zakopane, Poznań, Wrocław, Toruń) and geographical areas (Mazowsze, Masuria, Kashubia, the Bieszczady, Roztocze and the Tatras);

b) Italy – 19 publications, including as many as three in 2017, 2013 or 2011; obvious destinations such as Tuscany and Sardinia were presented as attractions, but there were also references to Siena and the Aeolian Islands;

c) Spain – 14 publications mainly with Barcelona, Andalusia, Malaga and Porto;

d) Great Britain – 12 publications (nine of them since 2012); mainly of London and Scotland, although Bristol and Cornwall also appeared;

year	Africa	South America	North America	Latin America	Australia and Oceania	Asia	Europe
2006	13%	10%	3%	0%	3%	23%	47%
2007	0%	25%	25%	0%	0%	0%	50%
2008	4%	0%	4%	0%	4%	21%	68%
2009	17%	3%	3%	0%	6%	25%	47%
2010	14%	9%	9%	7%	2%	33%	26%
2011	8%	3%	5%	2%	7%	22%	53%
2012	19%	5%	5%	2%	4%	14%	51%
2013	23%	8%	5%	0%	3%	26%	34%
2014	13%	0%	8%	0%	2%	29%	48%
2015	11%	18%	5%	5%	0%	32%	29%
2016	15%	12%	2%	2%	2%	32%	34%
2017	8%	6%	10%	6%	0%	16%	53%

e) France – 11 publications, mainly since 2011 (Paris, mentioned four times, should be considered the main destination, as well as Costa Rica).

The remaining European countries received support in the range of 5 – 10 publications during the analysed period, with the majority of publications appearing since 2011. These countries are, among others: Cyprus, Portugal (as a country or Lisbon), Germany (Berlin, but also Alsace), Greece (as a country and Greek islands), Sweden (as a country, Stockholm, Bornholm), Hungary (e.g. Budapest) or Austria (Vienna, Carinthia and Innsbruck). It can be seen, therefore, that the authors tried to diversify trends associated with mass tourism and to present in an unusual way, finding places less known to the public.

"NGT" also reached for extraordinary destinations, such as, for example, Andorra, Luxembourg, Estonia, Latvia and Iceland. And while the first countries occurred sporadically, Iceland was on the pages of "NGT" several times (five times since 2011).

Again, Russia was scarcely presented (as Petersburg or Moscow) and so were Polish neighbours (until 2014, there were single mentions of Slovakia, the Czech Republic, Ukraine and Belarus). Romania, Malta, the European part of Turkey and Croatia were not popular, either.

Therefore, it can be concluded that, in addition to repeating trends from the main cover stories, "NGT" treats supporting stories as a complement (i.e., what was intensively exploited in the main

stories, can be found to a lesser extent in supporting stories, such as the examples of Norway, Denmark or The Netherlands).

Among Asian destinations, the leading ones were: the Asian part of Russia (13 times, mainly as Siberia, the Kuril Islands and Lake Baikal); Indonesia (eight times since 2010, as a country, Borneo or the Maluku Islands); Japan (from 2011 seven times); China (in total seven times, but in 2017 it appeared twice, most often as Shanghai) and the Asian part of Turkey (with Cappadocia on top). Popular destinations such as Thailand, India, Israel, Georgia, United Arab Emirates (mainly with Dubai), appeared long ago and with occasional mentions in 2015 or 2016. In return, the monthly reached, for example, for Uzbekistan, Oman, Pakistan, Yemen, Laos, Lebanon (in 2010), Kuwait (in 2008), Qatar (in 2011), Afghanistan (twice in 2010 and 2012), Armenia (2010), Jordan (in 2011 and 2015). While these countries were mentioned sporadically, Iran was written about five times (also in recent years, mainly in the context of the country, but also Isfahan and Persia), and Cambodia – four times (mainly due to Angkor Wat).

Africa is the third most popular continent in the ranking. In addition to recognizable travel destinations, such as Morocco (mentioned seven times), South Africa (six times) or Kenya (four times), non-standard places were promoted in "NGT", such as Ethiopia and South Sudan (each country five times since 2011) and occasionally Mauritania, Uganda, Cameroon, Botswana or Tanzania. It is worth noting that before 2010 the covers also mentioned Syria, Niger, Rwanda, Gabon and Egypt. None of these countries appeared on the front page of "NGT" anymore. Africa was also portrayed in the context of geographical areas, such as the Sahara (three times) and the whole continent (six times). The Atlas mountains and the Zambezi river were presented as attractions.

Although none of the Americas threatened the position of the abovementioned continents, it is worth discussing them briefly. As far as South America is concerned, in recent years, Argentina and Peru (four times), Colombia, Brazil and Bolivia (three times each) were mostly described. Geographical regions were also exposed, e.g. Patagonia, Amazonia and Andes (three times each). In North America, the USA was dominant: the country was referred to in more than 50% of supporting cover stories, usually in the context of states (Alaska, Utah, Nevada, Missouri) and cities (Chicago, San Francisco, Washington, New York, which was written about four times). Canada was mentioned less frequently (five times since 2011) and Mexico was described three times. Latin America was on the covers of "NGT" since 2010,and it was intensively promoted in 2017 (four times). Since 2015, Cuba, Belize and Jamaica were systematically exposed.

Australia and Oceania were dominated by Australia. Papua New Guinea and New Zealand ranked second. Mentions were made of Samoa and Hawaii.

3.2.2. Indications of destinations on the cover of "Podróże" in years 2007 – 2017: supporting cover stories

The total number of supporting stories amounted to 692. From the second half of 2014, no more than five topics appeared in each issue. In earlier years, usually the number of threads fluctuated between five and eight.

Like the main cover stories, the supporting ones in "Podróże" focused primarily on Europe and Asia (Table 2). Since 2010, interest in Africa was decreasing (attempts to rebuild its popularity appeared in 2017), but since 2012 there was more support for South America. The other continents appeared less frequently.

Table 2 **Supporting cover stories in "Podróże", years 2007 – 2017 (percentage distribution)**

year	Africa	South America	North America	Latin America	Australia and Oceania	Asia	Europe
2007	11%	0%	2%	0%	4%	18%	64%
2008	9%	4%	0%	2%	2%	27%	57%
2009	15%	4%	8%	1%	3%	20%	48%
2010	6%	3%	5%	1%	0%	21%	64%
2011	7%	1%	7%	1%	3%	22%	59%
2012	10%	7%	6%	1%	0%	24%	52%
2013	5%	5%	2%	0%	0%	34%	53%
2014	7%	11%	7%	2%	0%	19%	54%
2015	0%	8%	6%	4%	4%	22%	56%
2016	3%	12%	3%	2%	0%	26%	53%
2017	9%	7%	6%	4%	4%	17%	54%

(Source: Author (for this study))

As far as Europe is concerned, it is worth noting that in the entire research period the percentage share of publications on it dropped below 50% only once (48% in 2009). In the remaining years, it was mentioned very often (even 64% of all references in 2009 and 2010). The most popular destinations include:

a) Poland – it was written about 97 times, most frequently in 2010 – 2013 (over ten times) and in 2016 – 2017 (nine times); mainly about cities (Lublin, Warsaw, Tricity, Poznań, Wrocław and Szczecin), resorts (Szczyrk, Ustroń, Szklarska Poręba, Supraśl, Jastarnia) and the lands (the Tatras and Podhale, the Beskids, Kashubia, Bieszczady, Warmia and Pomerania); there were also unusual destinations, e.g. Rudawy Janowickie and the Milicz Ponds;

b) Spain – 37 publications appeared about it, mainly in the context of the country, cities (Madrid, Barcelona, Seville), islands (the Canary Islands, Tenerife, Minorca) and geographical areas (Costa del Sol, Costa Blanca); it is worth adding that while before 2011 the publisher referred to unobvious destinations, such as Salamanca, La Gomera, recognizable places were of more interest later;

c) Italy – 24 publications were published, including 15 since 2011 (as many as three in 2017), with the greatest emphasis on the country, Rome, Florence, Venice, Sardinia and Como (Trento was the only unusual destination);

d) France – described 17 times, most of it was published until 2011, and since then only occasionally was the country on the pages of "Podróże" (as Paris and Provence, although there were also Burgundy, the Loire Valley or Marseille);

e) Great Britain – mentioned 14 times, nearly 70% of which were published since 2011 (mainly London, and to a lesser extent – Edinburgh and Manchester);

f) Greece – 13 publications appeared about this country, most of them appeared after 2011; they mostly encouraged the readers to visit the islands of Cyclades, Crete and Rhodes;

g) Portugal – 11 publications were published on it since 2010, in the context of the country, Lisbon, Porto, but also Sintra or the coast of Algarve;

h) Austria – 11 publications after 2010 (as a country);

i) Switzerland – 10 publications, eight after 2010 (mainly Geneva, Lucerne, and Zurich).

"Podróże", more often than its competitor, refers to Polish neighbours: Germany (17 times, mostly since 2011; the most indications were on Berlin, but also Rügen, Munich, Dresden and Salzburg); Slovakia (eight times), the Czech Republic (seven times with Prague as the highlight), Lithuania (four times in the context of Vilnius), Ukraine (three times, including Lviv) and Belarus in 2014.

Two threads are worth mentioning: first, the tendency to present Europe in a less standard way (e.g. Serbia in 2016, Lapland after 2013, Kosovo in 2011 and 2014, three times Macedonia, Monaco in 2010, Andorra in 2010, Bosnia and Herzegovina in 2016). Secondly, some of the directions, which are

considered as mass ones, do not appear in the magazine as often as one would expect; Croatia has been referred to six times (after 2010), Cyprus – three times (after 2011), and Malta three times (since 2014).

Scandinavian countries are very popular, mainly Norway (eight times since 2010), Sweden (six times since 2010, mainly as Stockholm), Denmark (four times as Copenhagen) and Finland (twice). There was almost no mention of the European part of Russia; Estonia, Bulgaria, the Netherlands and Ireland were described more often.

As part of supporting cover stories, "Podróże" also promote the Asian continent. This support has a different range, but never falls below 15% of all mentions in a given year. The most-mentioned countries include:

a) India – the country was written about 12 times, with the focus on the country and Goa (Kerala also appeared);
b) Indonesia – obtained 11 publications (most of them since 2013); in addition to the country, Bali and Borneo were referred to;
c) China – they appeared on the covers ten times in the analysed research area, mainly since 2011 (in the form of the country, not selected attractions);
d) the Asian part of Russia – before 2014 it was described 11 times (e.g. about the Lake Baikal, Siberia, Yakutsk): since that time no cover mentions were made about it;
e) Japan – out of 10 publications, nine appeared since 2010 (as a country).

Since 2011, Georgia became more and more popular; it was described eight times already (usually in the context of the country, although Batumi, Abkhazia and Tbilisi were also mentioned). Sri Lanka (six times), Vietnam, the Philippines and Israel (five times each), the United Arab Emirates and Cambodia (four times each) were in a similar situation. In the last two years, countries such as Mongolia, Qatar, Iran, Bhutan, Kyrgyzstan, Uzbekistan and Singapore were also noticed. On the other hand, Afghanistan, Jordan, Laos, the Maldives, Pakistan, Taiwan and Syria were abandoned (no publications since 2013, although they had been mentioned several times earlier).

Table 2 shows that Africa did not maintain its growing support from the years 2007 – 2009, losing it in 2010 and 2011. Since then, the percentage share of publications on the continent has not exceeded 10%. Most often described countries were: Morocco (nine times until 2014), Kenya and Tunisia (four times till 2014), Namibia (three times till 2014). It should be noted that Egypt appeared five times in the years 2008 – 2010, while since 2011 there was not a single publication. It is worth noting that in 2016 and 2017 new destinations appeared on the covers of "Podróże", such as Madagascar, Angola, Mozambique, Zambia.

Among the countries of South America, Brazil was referred to (eight times since 2009, with almost equal division between Rio de Janeiro and the country as such). In the last three years, Bolivia (three publications in total) and Colombia (twice in 2017) aroused interest. Paraguay and Uruguay should also be mentioned, as these are new destinations that did not appear before. Other countries were written about with varying frequency, some returned to the cover after many years, such as Peru, Guatemala and Chile. In North America, the most popular is the USA, which was described 22 times. These publications were dominated by New York (ten stories, including two in 2017), followed by Los Angeles, Las Vegas, Miami and New Orleans. The states (California, Alaska) and attractions (Grand Canyon) were also promoted. "Podróże" also encouraged its readers to visit Mexico (seven times) and Canada (twice). In Central America, in the years 2015 – 2017, reference was made to Cuba, Nicaragua, the Caribbean and Belize.

In Australia and Oceania, Australia has received support (seven times since 2009: as a country, Sydney, Melbourne and Christmas Island) and New Zealand (three times). Other destinations, such as Papua New Guinea and Tuvalu, were mentioned sporadically.

CONCLUSIONS

The authors accomplished the defined research objectives, proving that tourism is an object of mediatisation. At the same time, however, it fits in and responds to globally important events, thus affecting the content of travel magazines and their covers. Going further, the author examined the scope of popularized travel destinations in the geographical and chronological context, which simultaneously led to showing the scale of differences and similarities between magazines, and also enabled the verification of the hypotheses.

The main cover stories of both "NGT" and "Podróże" primarily supported Europe and Asia, Africa appeared in third place, while the remaining continents were outside the podium (at the bottom of the list were Australia and Oceania as well as Arctic and Antarctica, analysed together). In general terms, there is a correlation: supporting stories usually strengthened the trends determined by the main stories, primarily by increasing and diversifying the number of destinations in a given area. Thus, it can be concluded that the messages formulated on the covers, received comprehensively by the readers, were consistent.

The years 2010 – 2011 were particularly important in the context of the chronology and its impact on the exposure of destinations in both titles and types of cover stories. As the analysis showed, at that time the number of indications for Africa decreased markedly, while it increased for Europe and Asia (in the case of "NGT "also for Central and South America). After several years of stagnation, Africa came back to the magazines, but with less frequency and with the exception of several countries that had been mentioned earlier. It is necessary to explain what should be combined with this fact. The indicated years are the period of the so-called Arab Spring, when massive protests against the rulers went through some parts of Asia Minor and North Africa. The population protested against the deteriorating financial situation, corruption of the authorities, restricting civil liberties, social inequality and nepotism. Demonstrations took various forms, from initially peaceful speeches, through acts of suicide death, to riots, takeovers and civil war. The world was particularly interested in the revolution in Tunisia (the overthrow of the rule of Zayn al-Abidin ibn Ali in 2011), Egypt (the overthrow of Hosni Mubarak's rule in 2011), Libya (the overthrow and the death of Muammar Gaddafi and the civil war in 2011). The Arab Spring swept with no less force through Algeria and Bahrain; there were also protests in Jordan, Yemen, Lebanon, Morocco, Oman, Saudi Arabia, Kuwait, Mauritania. Demonstrations in Syria were bloodily suppressed, which led to the escalation of violence and became one of the causes of the ongoing civil war. The tragic events of the beginning of the decade had a negative impact on the whole tourist sector of that region. The countries which had previously been popular among travellers (Egypt, Syria, Tunisia) started to be considered dangerous. Józef Sala wrote about the close relationship between geopolitical conditions and tourism, claiming that " for the sake of their own health and safety, tourists prefer trips to politically stabilised countries" and "the development of domestic and international tourism is heavily dependent on political stability of countries and regions "(Sala J., 2012, p. 15). This approach is reflected in the analysed covers of travel magazines: while these countries quite often appeared in magazines until 2009, then there was a marked breakdown in their promotion. The countries where the situation became stable or where the riots were minor (e.g. Morocco, Tunisia, United Arab Emirates) came back to the covers first, but this happened not earlier than 2013. It should be noted that Egypt has not yet restored its media position, let alone Syria.

Thus, the Arab Spring contributed to changes in the destinations displayed on the covers of both magazines. It can be simply stated that Asian countries benefited from it. For example, in 2017, the Polish were more and more keen on travelling to the countries of Southeast Asia, with Thailand and the Philippines being the most popular (Alepod, 2018). This choice was justified by the fact that in both countries "you can be sure of beautiful sunny weather and low cost of stay, which undoubtedly allows you to enjoy greater pleasure of traveling" (EA, 2018); however, stable political situation was certainly an important factor influencing travel decisions. As proved by the analysis, both countries appeared on

the covers since 2011 much more often than before the Arab Spring (like, for example, Japan, Sri Lanka and India).

In the context of the exceptional growth of popularity of some countries, one ought to mention the People's Republic of China, which in 2015 – 2017 (especially 2017) systematically appeared both in "Podróże" and in "NGT". On the one hand, this can be considered a manifestation of the intense global economic and PR campaign of this country, and on the other hand it might be the effect of the cooperation agreement on tourism, signed by Poland and China in May 2017 (Aktualnosciturystyczne.pl, 2017). Another meaningful factor is the fact that 2018 was declared the EU China Tourism Year.

Europe also benefited from the Arab Spring. Admittedly, this direction was recommended even before the events of 2010 – 2011, but after this time the frequency of recommendations increased significantly (especially in "Podróże", which even more strongly turned to the Old Continent.) It is not a great surprise that in both magazines obvious destinations were very popular, such as Spain, Italy, Portugal. These countries can be described as "safe bets", which were additionally strengthened with less popular recommendations (not only Rome, Madrid and Lisbon, but also the Aeolian Islands, Segovia and Sintra). There was also a growing interest in Scandinavia – mainly Norway and Iceland.

The above relations between political and social events and the number of mentions of countries on cover pages may, in the author's opinion, be taken as confirmation of the third hypothesis (H3), according to which the front sides are "historical artifacts" reflecting the current political, cultural or economic situation.

Another interesting example is Poland: the country was on the pages of "NGT" and "Podróże" as the main story, with the latter magazine referring to it slightly more often. A huge difference can be seen in supporting stories: in "Podróże" Poland dominated all other destinations, which did not take place on such a scale in "National Geographic Traveler". The magazines also approached Poland's nearest neighbours in different ways (except Germany, which was mentioned in both of them); "Podróże" was more willing to refer to Slovakia, the Czech Republic and Lithuania than its competitor. Ukraine was described comprehensively ("NGT" more as the main story, while "Podróże" as the supporting one), excluding the years 2013 – 2014, which in turn can be explained by the geopolitical situation of the region, including the Euromaidan and annexing Crimea by Russia (which can also be referred to the third hypothesis).

The years of 2010 and 2011 also influenced the popularisation of South America and Latin America by "NGT" ("Podróże" wrote about them less frequently, focusing on Asian and European destinations). It is worth noting that for both titles quite obvious destinations over the years were Brazil, Argentina, Chile and Peru. In 2015 – 2017, Cuba joined them (with Havana as the highlight), which in turn should be analysed in the broader context of the resumption of diplomatic relations between that country and the United States at the end of 2014 (this is yet another positive verification of the third hypothesis).

"NGT" also mentioned North America and Australia and Oceania much more often, both in the main and supporting stories, (the latter seldom appeared in "Podróże").

As for the choice of destinations and the frequency of mentioning them, it can be said that the first hypothesis (H1) is also correct: despite many common points in displaying destinations, it is clear that "NGT" more readily refers to further and less standard places, while "Podróże" reach for Europe or tried and tested Asian destinations. This difference can be seen in the approach to Poland, which was more often presented in "Podróże" than "NGT" (although, contrary to the author's expectations, Poland quite systematically appeared on the pages of this magazine). Perhaps one of the reasons for the greater diversification of travel destinations in "NGT" is the globality of this brand, which, like a citizen of the world, encourages its readers to follow the routes which are less taken and inaccessible to the

average tourist. "Podróże" as a Polish brand promotes more willingly not only Poland, but also its closest (Slavic) neighbours.

Last but not least, it can also be concluded that the selection of destinations displayed on the front covers of magazines is related to their editorial policy and at the same time is the way to achieve it. As mentioned, "NGT" wants to create trends and point out unobvious destinations. "Podróże", on the other hand, turn to a centralised group of consumers who do not fancy exclusiveness and extremes. It should probably be linked to the fact that travel destinations, such as Australia and Oceania or South Sudan, were more often stories of "NGT" while "Podróże", even referring to exotic countries, reached for popular Thailand and India. In this case, the author confirms the incompleteness of this assumption, because in her opinion, not only the covers, but also the content of articles or communication activities for the brand are responsible for the implementation of the magazine's editorial policy. Thus, full confirmation of the second hypothesis (H2) would require examination of the content of all magazines, not just their covers.

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DIFFERENCES IN THE CONCEPT OF RISK MANAGEMENT IN V4 COUNTRIES

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ABSTRACT

Risk management is one of the entrepreneurial knowledge to reduce business risks. The aim of the article is to compare the access to risk management in SMEs in the Visegrad countries (V4). The attention is focused on the differences in a perception of the importance of various risks, the choice of the person responsible for risk management and the frequency of discussion on the current risks in the company. The article deals with the partial results of the empirical questionnaire survey which was completed in 2018 at the Tomas Bata University in Zlín in the Czech Republic. The survey was made among SMEs in the Czech Republic (408 respondents), Slovakia (487), Poland (489) and Hungary (388). The questionnaire included questions about the importance of risks and the concept of risk management in the company. Three research questions were set. To test the formulated research questions, the following statistical tools, such as pivot table, relative and absolute frequency, the Chi-Square calculator for 5 x 5 Contingency Table and Z-score, were used. Finally, the result indicates a different perception of the key risks in Hungary (in comparison with other V4 countries). There are also statistically significant differences in the frequency of discussion on the current risks in relation to the size of the company among V4 countries. The differences among the companies from V4 countries in the choice of the person responsible for risk management were proved as well. The article concludes with a discussion on the comparison of the previous international researches.

INTRODUCTION

Business risks are parts of the business environment which all enterprises must confront every day. Business environment shows the quality of the business conditions and condition for own economic activities as well. If the business environment has high-quality conditions, the sustainable economic growth and business development of enterprises can improve their competitiveness in the international comparison. (Belanová, K., 2014, Ključnikov & Junger, 2013, Cepel et al, 2018).

The business environment is determined also by the motives of individual entrepreneurs and their personal characteristics. Business situations and conditions for decisions are often unpredictable and they are changing during the whole decision-making process. There is no manual which can be used in each situation. (Kozubíková et al., 2015). Therefore, the risk management and risk assessment should be in the interest of each manager of the enterprise.

Especially small and medium enterprises must be aware of all factors of the business environment, because every negligence can have some fatal consequences. Čunderlík & Rybárová (2002) state that

the SME activity is connected to many risks, such as operational, personnel, market, security, production and financial risks. It is very important to evaluate all possible risks and realize risks during all decisions are made by company. In fact, every decision poses a risk to a company. For example, Kramoliš (2014) stated that the companies in the Czech Republic try to decrease the risk of market failure by using a marketing during the whole product lifecycle.

Business risks are very complex and include several types of risks in the whole business. Fetisovova et al. (2012) introduced a complex approach to business risks and divide them into five categories, including strategic risks, operational risks, financial risks, social-political risks and reputation risks.

This paper examines the differences in the concept of risk management in SMEs in V4 countries (Czech Republic, Slovakia, Poland, Hungary). Three aspects were analysed: the importance given to the various risks, the difference in the person responsible for a risk management and the frequency of discussion on the current risks inside the enterprises.

The structure of the paper is as follows: In the theoretical part, the importance of risk management as a part of the business environment is presented. Three research questions were set. It is introduced the empirical research of the risk management in the Czech Republic, Slovakia, Poland and Hungary and the Chi-Square calculator for 5 x 5 Contingency Table and Z-score (p-value with 0,05 level of significance) are applicated. At the end of this paper, the main results of the research are stated.

1 THEORETICAL BASES

Globalization has a huge impact on entrepreneurs, especially on SMEs. Economic turbulence in the business world increases uncertainty and risk, which increases the pressure on businesses and small and medium enterprises (Hussain et al., 2015). This research was focused on small and medium enterprises as an important part of the world economy (Henderson & Weiler, 2010).

The business environment consists of internal and external factors that have effects on company functions (including management, supply and demand, employees and business regulations). Every business operation is confronted with several risks. The European risk and insurance report (2016) presents TOP 10 risks in companies worldwide as follows:

1. Interest rate and foreign exchange
2. Business continuity disruption
3. Reputation and brand
4. Non-compliance with regulation and legislation
5. IT systems and data centres
6. Economic condition
7. Cyber-attack/data privacy
8. Competition
9. Marketing strategy, clients
10. Political, country instability

The previous research of the business environment in the Czech Republic has shown that the most significant business risk in the SME segment evaluated by Czech and Slovak entrepreneurs is a market risk, which led to a significant change in the performance of the studied companies. At the same time, the study has revealed a high degree of confidence of individual groups of entrepreneurs when evaluating their ability to manage financial risks in the company. The transfer of financial risk to the suppliers by means of establishing contractual prices and conditions of fines in the case of contract conditions violation is very often. (Kozubíková et al., 2015; Taraba et al, 2015) Small and medium-sized enterprises are more vulnerable to the market environment perspective in comparison with big

enterprises. The intensity of market risk as one of the biggest risks for SMEs confirmed many authors (e.g. Kot, 2018; Popp et al., 2018; Oláh et al., 2018). They define market risk as a loss of customers, strong competition in the industry, market stagnation and supplier misbehaviour.

During the crisis´ periods, a negative impact of various risks is multiplied. (Christensen et al., 2015). The crisis also affects efficiency as well as the productivity and the income growth of countries and individual firms. The last financial crisis has changed the European SME managers view on risk management significantly. Some mistakes that had been done, such as a poor cash flow management or an insufficient financial risks management, were showed during the crisis. If managers enforced these mistakes, they could have reduced the negative influences of a crisis on their enterprises. (Krištofík, 2010). After negative experiences, risk management is becoming a much more important tool compared to the past. Risk management can be assumed as a comprehensive system of risk assessment and its application with an objective to minimize threats and maximize opportunities. (De Oliveira et al., 2017). The research results made by Federation of European Risk Management Associations showed evidence of the increased need for informing the top management about the state of risk management, increased interest in a top risk manager at the top management level, increased interest in the risks which gradually get into the process of the management decisions. (European Risk an Insurance Report, 2016)

Based on the worldwide surveys, e.g. Global State of Enterprise Risk Oversight (2015), it is possible to assess that there are still some shortcomings in terms of its application although there is the increasing interest in an implementation of risk management and the proven benefits of this implementation in the company. According to foreign studies, e.g. Report on the Current State of Enterprise Risk Oversight: Update on Trends and Opportunities (2015), only 25% of managers believe that their company has an effective integrated approach to risk management. Global surveys show that even though the risk management of the company is not a new discipline, the current models of risk management are not flexible enough to be able to consider the dynamics of the market.

Publications in the field abroad have established the positive effects of risk management on the quality of decision-making processes, on increasing company value, on quality of the provided information, on securing the competitiveness, on achieving the process of sustainable improvement and on prevention in the framework of ensuring a continuous operation of the company (DeLoach, 2000; Urbancová & Hudáková, 2015; Varcholová et al., 2008; Hopkin, 2013). According to the surveys made by several authors the importance of proper risk management was proven by e.g. Kral et al. (2015); Vodak et al. (2014); Urbancová et al. (2015). The application of risk management is less systematic in many enterprises as compared to developed countries and it is made with a certain reserve (Gavurova et al. 2017).

The choice of a person responsible for a risk management in the company is one of the key issues of setting risk management properly. This role can be entrusted to the person specialized for risk management (risk manager who is inside the company or outsourced from outside) or to the person in lower management (leader of some department, teams etc.). If the company does not discuss this role in the company, the entire responsibility stays on the owner of the company (or on the whole top management).

According to the European risk and insurance report (2016) are risk managers generally:
- male (73%, compared to 27% female),
- between 36-55 years (72%),
- earning more than 100 000 EUR a year (46%),
- 62% working for companies with turnover exceeding 1 billion EUR
- 80% working for companies with more than 20 000 employees and dedicating four or more full-time employees to risk management.

Many researchers confirmed that entrepreneurs with a university education perceive the intensity of factors linked to the business environment differently and have a better capability for managing the business and financial risks in the companies. (e.g. Belás et al., 2016; Ključnikov & Sobekova Majková, 2016; Ključnikov & Belás, 2016; Paulik et al., 2015).

Regardless of the choice of the person responsible for risk management, it is necessary to set the communication about risks within the company and reporting to the top management. Two-thirds of risk managers report to the board or top level (26% of them report to the chief financial officer). (European risk and insurance report, 2016).

2 AIM AND METHODOLOGICAL BASES

The aim of the article is to compare the access to risk management in SMEs from V4 countries. The attention was focused on the differences in a perception of the importance of various risks, the choice of the person responsible for risk management and the frequency of discussion on the current risk in the company.

The article uses a partial information from a huge international research which was organized by Tomas Bata University in Zlín. The research was focused on risk management, the analysis of the current situation of risk management in companies and the causes of deficiencies in the processes of risk management.

The following countries participated: Czech Republic (Tomas Bata University in Zlín), Slovakia (University of Žilina), Poland (Czestochowa University of Technology), Hungary (University of Debrecen), Serbia (University of Belgrade). The research was finished in 2018 and was carried out as follows: We obtained 408 responses of SMEs in the Czech Republic, 487 in Slovakia, 498 in Poland, 388 in Hungary, 329 in Serbia. Companies were chosen randomly from a database and were addressed directly by an e-mail to complete the questionnaire in an electronic form or in a paper form. This article is focused on a comparison of V4 countries, therefore, only these data were used.

The structure of the entrepreneurs´ characteristics who filled in the questionnaire was as follows:
The Czech Republic (CR): men – 290 (71%); women – 118 (29%); according to age: up to 30 years – 68 (17%); from 31 to 50 years – 107 (26%); over 50 years – 233 (57%).
Slovakia (SR): men – 325 (67%); women – 162 (33%); according to age: up to 30 years – 99 (20%); from 31 to 50 years – 269 (55%); over 50 years – 119 (25%).
Poland (PL): men – 312 (63%); women – 186 (37%); according to age: up to 30 years – 111 (22%); from 31 to 50 years – 285 (57%); over 50 years – 102 (20%).
Hungary (HU): men – 232 (60%); women – 156 (40%); according to age: up to 30 years – 158 (41%); from 31 to 50 years – 170 (44%); over 50 years – 60 (15%).

To fulfil the main aim of the paper, the following research questions were formulated:

RQ1: There is no difference in a perception of the importance of various risks in SMEs inside V4 countries.
RQ2: There are significant differences in a choice of the person responsible for risk management among V4 countries.
RQ3: The size of the business is a significant factor for the frequency of discussion on the current risks in the company in all V4 countries.

The descriptive statistics tools (pivot table, relative and absolute frequency) in the first step were used. The Chi-Square calculator for 5 x 5 Contingency Table and Z-score were applied. The research questions were tested at the 5% level of statistical significance. The conditions for carrying out the Z-test (normal distribution of samples according to the statistical features and the representativeness of the sample – a number of respondents) were fulfilled. The SPSS Statistics analytical software for data evaluation was used.

3 RESULTS

For the first research question, direct responses of owners and managers from the companies were used. They were asked to identify a maximum of three risks from a selection of seven business risks which they consider to be the key in their business.

In the Czech Republic, from the total amount of 408, the share of key risks was as follows: 28% market risk, 20% personnel risk, 18% financial risk, 14% economic risk, 8% operational risk, 5% legal risk, 5% security risk and 1% other risks.

From the total amount of 487 SMEs addressed, the share of identified key risks of SMEs in Slovakia was identified as follows: market risks 31%, economic risks 21%, financial risks 18%, personnel risks 10%, operational risks 7%, legal risks 6 %, security risks 5 % and other risks 1 %.

The small and medium enterprises in Poland identified these key risks for their business: 35% market risk, 22% financial risk, 15% economic risk, 13% personnel risk, 5% legal risk, 5% security risk, 5% operational risk, 1% other risks.

From the total amount of 388 SMEs addressed in Hungary, as key risks for their business were identified: 18% market risk, 16% financial risk, 15% economic risk, 13% operational risk, 13% personnel risk, 10% legal risk, 9% security risk, 6% other risks.

The results can be seen in the figures below.

*Figure 1* **The importance of risks in SMEs in V4 countries**
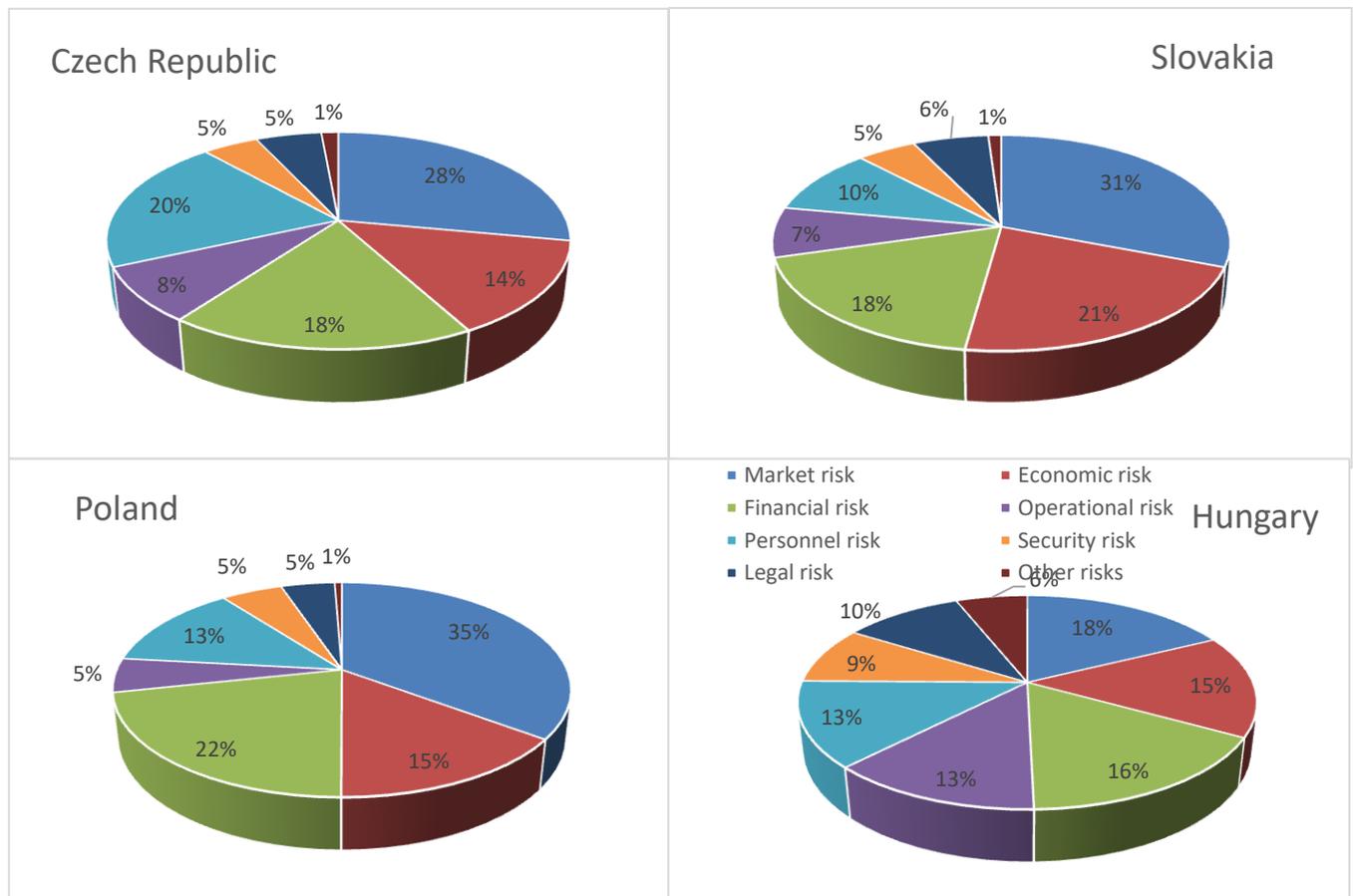
(Source: own*)*

The figure above shows that the perception of the importance of key risks in the Czech Republic, in Slovakia and in Poland is almost similar. The importance is given to the market risk, economic risk, financial risk and personnel risk. In Hungary is a different situation. All risks have a similar importance. It shows that in Hungary is a different perception of the importance of key risks. **RQ1 was not confirmed.**

The second research question was aimed at a person responsible for a risk management in the company and to the differences among countries as well. Fig. 2 shows an overview of the situation in companies in V4 countries. The situation is almost similar. The most common is a situation when the person responsible for a risk management is company owner (CR 69%, SR 61%, PL 70%, HU 62%). It can mean that the company has not discussed the risks in the company yet. Some of the small and medium companies state that there is nobody responsible for risk management (CR 12%, SR 19%, PL 14%, HU 8%). A manager authorized from the executive management is often used as a team leader of each department (CR 8%/9%, SR 8%/8%, PL 6%,6%, HU 13%/10%). A risk manager specialized in this activity is still a rare situation in V4 countries (CR 2%, SR 4%, PL 4%, HU 6%). Hungary with 6% is a little bit further in the risk management concept in comparison with other V4 countries.

Figure 2 **An overview of a person responsible for risk management in SMEs in V4 countries**
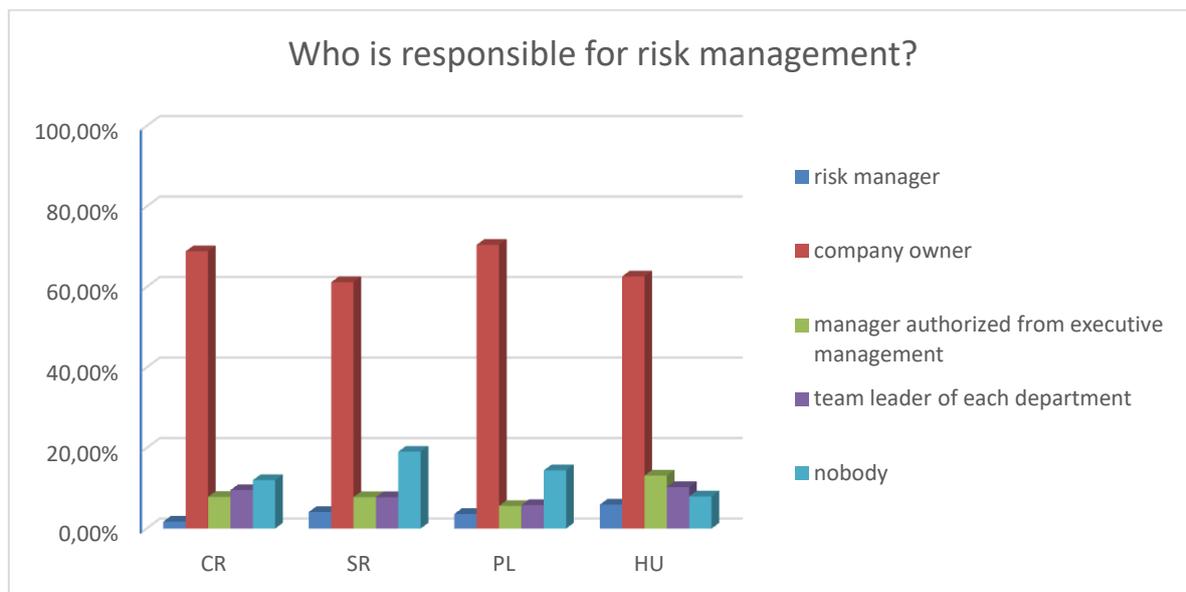
(Source: own*)*

An analysis of differences in the choice of the person responsible for risk management among V4 countries is presented in the table below.

Table 1   **An analysis of the person responsible for risk management among V4 countries**

Who is responsible for risk management in your company?					**Z-score (p-value)**		
	CR	SR	PL	HU	**CR/SR**	**CR/PL**	**CR/HU**
Risk manager	7	20	18	23	0.0375	0.0819	0.0018
Share in %	1.72%	4.11%	3.61%	5.93%			

Company owner	281	298	351	243	0.0168	0.6031	0.0629
Share in %	68.87%	61.19%	70.48%	62.63%			
Manager authorized from executive management	32	38	28	51	0.9840	0.1802	0.0143
Share in %	7.84%	7.80	5.62%	13.14%			
Team leader of each department	39	38	29	40	0.3624	0.0340	0.7263
Share in %	9.56%	7.80%	5.82%	10.31%			
Nobody	49	93	72	31	0.0039	0.2801	0.0588
Share in %	12.01%	19.10%	14.46%	7.99%			
Chi-square	56.3069						
p-value	<0.00001						

(Source: own)

In the table above can be seen that there are statistically significant differences among the responses in V4 countries (chi-square 56.3069, p-value = <0.00001) at the 5% level of statistical significance. **RQ2 was confirmed**. When we look at the differences between the Czech Republic and other countries in a detail, we can see that significant differences are most often in relation to Slovakia (in responses: risk manager, owner and nobody). The Czech Republic and Hungary have statistically different responses in two cases – risk manager and manager authorized from executive management. The most similar is the Czech Republic and Poland – the statistical difference was confirmed only in the case of team leader of each department.

Table 2   **The frequency of discussion on key risks in SMEs in V4 countries**

How often do you create the space for discussion on key risks in your company?								
	size of the company	monthly	quarterly	semi-annually	yearly	no discussion	total	chi-square	p-value
	micro	62	20	28	27	124	261		
	small	28	14	14	15	25	96	49.713	<0,00001
CR	medium	24	14	3	6	4	51		
	micro	56	29	22	43	164	314		
	small	20	13	24	18	40	115	45.810	<0,00001
SR	medium	21	10	10	8	9	58		
	micro	32	42	22	37	166	299		
	small	15	29	38	25	37	144	69.659	<0,00001
PL	medium	14	13	8	10	10	55		
	micro	72	43	24	23	79	241		
	small	26	17	13	6	10	72	22.198	0,004563
HU	medium	30	20	10	6	9	75		

(Source: own)

In the table above can be seen the frequency of discussion on key risks in SMEs in V4 countries in relation to the size of the company. The numbers mean the number of enterprises in each category. With a use of the Chi-Square calculator for 5 x 5 Contingency Table, the differences between the frequency of discussion and the size of the company were proven. The statistical differences were

proven in SMEs in all V4 countries. In micro-companies in the Czech Republic, 48% of enterprises do not discuss risks, in Slovakia 52 %, in Poland 56% and in Hungary 33%. It can be stated that in half of the micro-companies the risks are not discussed almost at all. Bigger companies have a discussion on risks more often than smaller companies. 74% of medium companies in the Czech Republic discuss the risks monthly (in Slovakia 36%, in Poland 25%, in Hungary 40%). The differences among responses in relation to the size of the company are clear in all V4 countries. **RQ3 was confirmed.**

4 DISCUSSION AND CONCLUSIONS

The paper was focused on a comparison of access to risk management in SMEs which belong to V4 countries. The attention was focused on the differences in perception of the importance of various risks, the person responsible for risk management and the frequency of discussion on the current risk in the company. Three research questions were set to analyse the aim of the paper.

The first research question analysed a perception of the importance of key risks in SMEs within the Visegrad Group. It was confirmed that the most important risks for SMEs are market risk, financial risk and economic risk. This conclusion was confirmed by many other authors who have done similar researches (Belás et al., 2018; Kot, 2018; Popp et al., 2018; Oláh et al., 2018).
The market risk, financial risk and economic risk are perceived as most important only in SMEs in the Czech Republic, Slovakia and Poland. In Hungary is the perception quite different. Almost the same importance was given to all analysed risks in Hungary (market risk, economic risk, financial risk, personnel risk, security risk, legal risk, operational risk). The first research question was not confirmed.

The conclusion from the second research question also shows the difference in the concept of risk management in Hungary. It was found out that the person responsible for risks in the company is an owner of the company in the most cases. A risk manager specialized for this activity is still a rare situation in V4 countries (CR 2%, SR 4%, PL 4%, HU 6%). Hungary is a little bit further in risk management concept in comparison with other V4 countries. The statistically significant differences in the choice of the person responsible for risk management among V4 countries was proven. The second research question was confirmed.

The third research question analysed the size of the company as a significant factor for the frequency of discussion on the current risks in the company. The statistical differences were proven in SMEs in all V4 countries. It can be stated that in half of the micro-companies from V4 countries, the risks are not discussed almost at all. Bigger companies have a discussion on risks more often than smaller companies. 74% of medium companies in the Czech Republic discuss the risks monthly (in Slovakia 36%, in Poland 25%, in Hungary 40%). The differences among responses in relation to the size of the company are clear in all V4 countries. The third research question was confirmed. The size of the company was proved as a statistically significant factor in the perception of a governmental financial support for SMEs in the Czech Republic. (Dobeš et al., 2017). Hernández-Cánovas and Koëter-Kant (2013) confirmed also the relation between the size of the company and debt maturity. They found that smaller companies are more influenced by the institutional environment in comparison with bigger companies.

The research has some limitations. The questionnaire was placed in all countries in the native languages, nevertheless, some misunderstanding can influence the results. The survey was conducted only in V4 countries; therefore, the results cannot be generalized. This research can be broadened to other countries within the EU to get a comprehensive knowledge about risk management in the EU. The result can be useful for professional public and for the organization which helps SMEs to overcome the obstacle in the business environment.

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SENIORS AS VICTIMS OF DOMESTIC VIOLENCE

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ABSTRACT

The neglect of seniors is a major problem of the society. In terms of various European documents, maltreatment is qualified as one of the forms of domestic violence. It is undoubtedly one of the latest forms we encounter in domestic violence. The generators of the attacks could be different family members as well as those who are responsible for the care of the seniors. In any case, it is a very negative social phenomenon even in the context of the constant aging of the population and in social and economic context. Seniors are a particularly vulnerable category of people, very similar to children. For this reason, this problem can be considered as an integral and inseparable part of the complex of domestic violence.

KEYWORDS: domestic, violence, forms, seniors, criminogenic, factors

JEL CLASSIFICATION: K10, K14, K38

INTRODUCTION

As the most essential criterion how the domestic violence can be structuralized, is the criterion of subject, being at the position of the domestic violence victim, as well as the criterion of the nature of the violence itself and its consequences. The nature of domestic violence can vary and we cannot find any estimation or summary in any of accessible literature sources. One of the reasons is that the domestic violence continuously evolves and there are newer, more developed and specific forms of aggressive, violent behaviour, or the violent form itself is significantly dependant on aggressor's subject, his nature and a lot of internal and external factors. Unfortunately, the tools and the procedures used for violent attacks towards the victims are really various, sometimes even absurd (shoe laces, tied by handcuffs, dog leads, etc.). Execution of violent attacks and the tools used for such purposes can vary, depending on particular situation, surrounding or particular interests or preferences of the aggressor (Sopková, 1998).

Typical forms of domestic violence mainly derive from the phenomenological division of domestic violence. This has been based on the spectre of subjects that possibly can or are becoming the domestic violence victims. Based on that, we differentiate either of the following:(Papáček, 2017):

- domestic violence, the victims of which are women,
- domestic violence, executed directly or indirectly on children,
- domestic violence concerning men,
- domestic violence, the victims of which are older people (seniors),
- domestic violence, concerning mentally or physically challenged people.
  From frequency point of view, we can agree with opinion that the most frequent violence is executed on women (Polák, Tittlová, 2017). Woman represents a typical victim of domestic

violence and due to this the domestic violence is incorrectly limited mainly to this group. From the same point of view, the second numerous group are the children victims. What is interesting is the fact that not real numbers of either women or children victims are known but it is assumed that the number is much higher than those officially recorded (Knápková, Tóthová, 2010). The problem is that the violence on women and domestic violence in general is highly latent. It is very similar in case of violence commited on children, the revealing of which is more and more assisted by social institutions of the states. Highly latent form of domestic violence is also the one commited on men. Nevertheless, we also face the problem of seniors neglected, what also can be considered to be the form of domestic violence within its global society and the most modern understanding.

1 SENIORS AS THE CATEGORY OF DOMESTIC VIOLENCE VICTIMS

The latest category of victims of domestic violence is the category of seniors. The term senior has been, under our conditions, related to the pension age but also younger people can be included. The violence itself is done mostly by their children or grandchildren. Therefore, it is more convenient to describe the group of older people than the ones who are having children or grandchildren, offsprings causing the violent behaviour. Most of the aged people would never admit such violent behaviour to be commited on them. There is only about between 3 – 5% of explored cases of seniors admitting the domestic violence commited on them (Holcr, 2017). The real situation might be radically different. The behaviour of their children is, according to them, due to work stress, new, modern age or different interpersonal problems. Finally, older people are very grateful for every kind of attention from their children, and the violent behaviour sometimes and somehow compensates that. There is a tendency to lighten the violent attacks and afterwards they can soon forgive their children. At the same time, many of such attacks are not motivated only by their problem situation with seniors and new situation for the children (when they have to take care of their parents, being som difficult due to work and other duties they have), but also there is the financial and property motivation very often (Polák, Tittlová, 2017).

In cases of seniors or children, as the victims of domestic violence, we can often come across the term of *being neglected*. Such a form is a part of supranational documents and its content creates the overall neglection of mental, physical and moral care. The neglected people are usually unwashed, wearing dirty clothes, undernourished, hungry and weak, unwell, due to lack of vitamins and food, laconic due to physical torture or they refuse communication, often mentally behind, or challenged in general. It integrates physical and mental attacks, aimed to overall neglection of senior person. Seniors can find themselves in such positions mainly due to health problem reasons. It is similar as with children, failure in nourishing, hygiene, social contact, moral or mental development. Such a form can be typical for health challenged people, basically dependant on partial or complex help from other people. And it is them who intentionally neglect such duties (Papáček, 2017).

2 THE TERM DOMESTIC VIOLENCE ON SENIORS AND ITS FORMS

What we understand under the term of domestic violence of older people is the violence commited on parents by their children or on grandparents by their grandchildren. Generally, the old age means the age overreaching 60 years, though such criterion is very disputative. It is related to continuously shifting pension age and involves the real age of people when they retire. There is a myth that seniors are often inert, weak, dependant on the help of the others. Despite the fact that there are such groups, not all the cases must be like this. There is a large group of vital, mobile and self-sufficient seniors, in some cases even at work. Thus they are not a burden for the society. At the same time, any of such seniors, either vital or dependant, can become the victim of domestic violence. Such phenomenon is highly specific for this category, compared to other crime forms. The senior victims can be divided according to what is their life-circumstances situation and based on this, the proper approach and tools to help such

victims can be chosen and vary. The following groups of senior domestic violence victims can be recognized (Tittlová, 2017):

- seniors physically vital and living active life,
- seniors physically vital, but lonely (mostly widowed) or those ones having bad financial situation,
- seniors immobile, having problems to move or possibly somehow disabled, handicapped,
- seniors mentally unstable or challenged.

Either of the above mentioned groups, while taking the older aged people into consideration, can become the victim of domestic violence. We can talk about domestic violence involving seniors only in cases when children or grandchildren are the aggressors. Based on the violence causer, also other types of domestic violence can be taken into consideration. It is often the term of neglect used instead of domestic violence. Most of supranational documents, mainly the EU documents dealing with this issue, highlight it in the previous way. Neglect, in this case, does not involve only passive, but also active forms of domestic violence. Basically, the nature of the attacks towards the seniors is physical, mental, intimate, economic or social. It is similar as in case of children, being neglected, that is providing insufficient care, hygiene, food, rest or emotions. It is, more or less, about all the attacks involving physical or mental harm or damage of the senior person. The most frequent are the mental attacks aimed as highlighting inutility or inability of senior person, taking his age and general health into consideration. The physical attacks also belong to frequent ones and as the person grows older and is getting weaker, all the physical attacks are clearly more visible and seen. There are the marks of physical attacks, so unfavourable from the aggressor's point of view. Recently, the media keep us informed that intimate violence on seniors has been more and more bewildering. Frequently, it is about economic, property attacks, including witholding of pensions, leaving only a small portion of it at senior's disposal, etc. It is dangerous how neglecting the seniors, inevitably dependant on the help of the others, can be. The nature of the attacks can vary quite a lot. It is estimated that the most frequent aggressors are children or grandchildren of seniors (60%). Besides, there is the group of nursing and retirement home personnel, being obliged to take care of seniors. Taking the helplessness and powerlessness into acount, seniors are quite easily abused. The percentage of such problems facing seniors is increasing. Čírtková (2004) mentions that the risk of senior neglect is being on increase year by year. Growing older is generally characterized by physical power and sturdiness decrease, though many older seniors remain physically active. The body shows the features of being worn, certain ilnesses appear. Frequent are the mental problems, like – forgetting, senility, gradual dementia, etc. All these signs are naturally connected to senior age but despite that it is difficult to react to them. Children usually cannot bear the fact that this also involves their parents. They treat them as it used to be years ago but that does not reflect the reality. The emerged situations require not only patience but also financial cover and mainly some time. In many cases, the variety of situations, inability to manage them or to help, represent a strong stress factor, leading to tension. Its final phase is to release the tension by violent attacks, bad or insufficient treatment of seniors.

3 SYNDROM OF BAD TREATMENT OF SENIORS AND ITS IDENTIFICATION

Syndrom of bad treatment of seniors or neglecting them (EAN syndrome) was described for the first time by the European Council. Its content is created by all the available and known forms of violence, including the property exploitation and forgetting the basic existential needs of seniors. All of these attacks are primary aimed to harm or hurt. Aggressors' deeds lead to cause suffer, not destruction (Medelská, 2017). Unfortunately, due to physical attacks, the death of seniors is happening. An important role is played by a fact that it is about being more vulnerable, the attacks of such extent would not mean a danger for a person in productive age. The above mentioned aspect, describing the neglect of seniors, also specified the typical forms of such violent behaviour (Tittlová, 2017). They involve the following:

- direct physical ill usage (different forms of beating, using different tools),
- indirect physical ill usage (purposeful delay or skipping of the medications),
- intimate violence (intimate touching, stalking while having shower or changing clothes, different types of sexual activities),
- emotional torturing (most often verbal offence, ignoration, hiding the feelings, threatening, humiliating, mockery, highlighting the inability, uselessness, telling off the collective, highlighting the burden they represent, etc.),
- misusage of seniors from material or financial point of view (take the pension rent, stealing money, valuables or other things from household, forcing to donate or gift the property emphasizing the common care),
- neglecting the help, seniors inevitably need for their life (caring about hygiene routines, helping with hygiene, not providing food, drinking, proper clothes, cleanness, in case of immobile people it can cause sore bed, sore spots, etc.),
- forcing the seniors to leave the dwellings where they spent a part of their life,
- forcing the seniors to leave into retrieves with special care despite the fact that senior does not suffer any health problems to be there, etc.

Violence identification on seniors is not an easy subject at all. Seniors often try to hide such violence by different ways. They are shy people, often dependent on the help of others, they appreciate the good will and being afraid of the aggressor, they often do not report the domestic violence. They are afraid of having and making the situation even worse and at the same time they wish for the attention from their children or grandchildren. The violence they survived is a difficult topic to deal with for them, or they prefer not to talk about at all. They show signs of uncertainty, being unstable or afraid of in communication, and these can be revealing a lot about problems. Discovering the violence on seniors is made even worse by the social situation in society is not very helpful towards this group. Financial security is relatively low, some of the treatments connected to the domestic violence have effect also on the current questions concerning pensioners.

Caring about seniors, with different activity level in older age represent certain burden. Currently, it is very difficult to synchronize own work and family life with taking care of parents. The bigger the health problems are, the more difficult and demanding is taking care of them. It requires many limitations from the families, often not only as to time but also material or financial. Similar negative impact as neglect of seniors has also the insufficient or unmanaged care. Subjects providing the care from among family members are mostly not qualified or educated properly to handle such difficult tasks. Overloading or high pressure belongs to most common risk factors in case of aggressors.

4 REASONS TO NEGLECT THE SENIORS (THE MOST COMMON ONES)

Specific category of victims of domestic violence are seniors, either from the above mentioned forms of domestic violence or from the reasons of such behaviour towards seniors. Seniors often have tendency to disregard the domestic violence, they suffer and bear the frequent repeated attacks. Some of them are simply unable to solve such problems due to their physical and mental condition. Many of them do not talk or mention that despite the fact they should and could. They are grateful for each kind of attention, any interest from aggressor's side or they consider themselves to be a burden so they decide to accept the violence. Sometimes they are afraid of being ashamed and they have the feeling of failure in upbringing the aggressor, often the only close relative they have so the relationship is not interrupted and the domestic violence is not being solved either. The reasons of domestic violence on seniors are different, caused by – stress, financial or material ones. Risk factors for seniors are the following ones, mainly: (Polák, Tittlová, 2018):

- old age,
- physical weakness,

- typical illnesses for older age, more serious illnesses, connected to worn body condition,
- mental disorders, illnesses,
- the need to take care of senior, that he is wholly dependent,
- financially demanding treatment,
- property and financial background.

Taking care of seniors, similar as about physically challenged people, is not easy at all, it often requires certain special knowledge, qualification, or frequent visits to doctors. The aggressor usually has his own family, his own life he has to exist in, so taking care about senior is becoming very demanding from every point of view. Senior, from aggressor's point of view, is becomming a tiring burden and he cannot devote himself to what he would like to (his work, family, interests), and this leads to helplessness, feeling tired, often anger or exhaustion. In some cases it is the helplessness in aggressor's case when he cannot provide the care in proper way, senior is unconsciously neglected and thus he is harmed. All these feelings – cause frustration, a significant risk factor. It is often the base where the domestic vilence starts to occur. Generally, these are physical attacks, mental torture or neglect of seniors. Similar situation is also in case of disabled people. What surprises is that the victims of violence are seniors from property or financial reasons. The aggressor is a grandson, getting this way the part or the whole of the pension income of senior. Aggressors often are interested in other property of senior (different immovables or valuable movables). Children's violent behaviour can be motivated by inheriting the property rights or forcing the senior to leave the place of dwelling (such as shared house or flat) and leave to retirement home for seniors.

Besides the family care, recently the problem appears also in specialized care centres in homes or nursing homes. In cases of physically or mentally challenged seniors this seems the only worth place to live. Seniors are offered special medical care. Though these institutions, often private ones or financially donated by the families of seniors, are not doing the caring job properly. Most of such institutions have a bad reputation, in many cases even unreasonable death cases, showing the bad conditions or insufficiencies in such places. Despite these facts, complex surveys on treatments are absent. The activities are being monitored by health care employees from insurance companies but neglection is often covered and often hidden by announcing the controlling activities in advance.

It also involves the subjects, according to *ex lege* or contracting conditions, obliged to provide the senior care, who commit the violence on older people and neglect them. This also can be considered to be one of the forms of domestic violence. Within the care and providing the needs of seniors there were discovered numerous failures (not enough drinking water, food, vitamins, excessive amount of sedatives, limitations in individual freedom, disturbing the privacy, unreasonable monitoring the senior, etc.). Instead of proper care, the currently operating institutions (many of them) can be characterized with adjectives as irresponsible, not qualified, not interested or careless.

Solving the senior neglect problems has more structural aspects and it is not that simple at all. Many of seniors cannot express their opinion, neither to protect themselves, nor to report the violence commited on them. Even if they have such possibility, they do not know about it. A matter of a fact is that they grew up in completely different social, political, legal environment where the function of the family and its hierarchy used to be perceived in a different way as it is today. Seniors, in relation to nurses or pension home management, do not know their rights. Disturbing their privacy or unreasonable monitoring is often perceived as common operation run of the treatment centre or institution. As to relation to the surrounding, there is the feeling of helplessness that they are placed in such institution. When the aggressors are their own children, their behaviour is understood as a failure in upbringing and they do not want to present this publicly. Finally, every attention, even the negative one, means that they are grateful for that to their relatives. As to the status of seniors, neither their financial, nor the social perceiving help. Members of the society often underestimate seniors, according to their opinion they are on the edge of society, mostly as a burden instead of help. It is important to

mention that despite the financial point of view, the seniors are full-valued members of the society. Therefore, the state should guarantee the rights and provide them worthy period of growing old and react by proper legal and non-legal means to each form of domestic violence involving seniors.

Domestic violence on seniors, taking the above mentioned reasons into consideration, has a typical feature that it is not that simple for the victims to set free, despite that it might seem easy to do so. At the beginning they are gathering strength to recover then later they are trying to justify the deeds. The aggressor's appologies that the attacks will not be repeated persuade mostly the victims to believe in that. Seniors, in this phase, no matter what the behaviour of the aggressor is, are not able to protect themselves against the forthcoming attacks. The violent attacks are accompanied by appologies from aggressor, with different reasons (mostly due to external factors as stress, tension, etc.). The victims are getting into helpless situation. Taking all the relations with aggressor into consideration, only a small portion can break away. The longer the victims remain in relation with aggressor and the more often the attacks are happening, the lower is the probability to find solution for the victims. Many of the victims are ashamed and they think it was their failure and unability, and there are still many women who believe that they must bear the violence towards their personality. Not many children can oppose the authority of their parents and mention the behaviour of them at school or among friends. Seniors are ashamed for the behaviour of their children, they are happy for every small attention paid towards them, no matter that small acts of kindness are alternating with different types of attacks (physical, mental, terrorizing and humiliation, etc.). Men can only rarely bear the situation that they are in the position od the victims of domestic violence. They would never accept the idea of violent behaviour on them.

CONCLUSION

The problem of domestic violence is the persisting one. It is important to perceive the phenomenon as the complex one from different forms of violent behaviour, from the subject point of view, when we can talk about the domestic violence victims. Later, but after all, also the older people – seniors, are ranked among the victims of domestic violence. This phenomenon is quite a new one. In every case, it is necessary to pay attention to different forms of senior neglect. It is strongly specific phenomenon, taking the age of victims into consideration, at the same time it belongs to highly latent one, either due to shame or the helplessness of seniors. Therefore, the phenomenon must be examined, prepare the social and legal tools to control and sanction it.

Acknowledgement

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FACTORS CONTRIBUTING TO DOMESTIC VIOLENCE

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ABSTRACT

The search for possible solutions and tools to fight domestic violence always ends up with searching for the causes of this negative phenomenon. To answer what causes domestic violence turns out as a challenging issue. Knowing the causes of domestic violence could be the key to the elimination of domestic violence from our society. Etiology is a partial component of criminology that focuses on the discovery and investigation of the causes of criminal behavior in individuals. Knowing the causes of crime as such is in itself a very demanding process. The cause creates a casual relationship between phenomena which are unchangeable. The causes of violent behavior in domestic violence have never been accurately and unequivocally proven. For this reason, it is more appropriate to identify and investigate criminogenic factors of criminal behavior. These are factors, which in themselves, or in a combination of them, support, enable, incite, facilitate the emergence or development of criminal behavior.

INTRODUCTION

As we mentioned in the abstract, the search for possible solutions and tools to fight domestic violence always ends up with searching for the causes of this negative phenomenon. Why is there domestic violence at all? Why do certain groups of the population (either women, children, men or seniors, etc.) become victims of domestic violence and on the other hand, what makes the aggressor to behave violent? Why are some entities in the same group of population becoming victims of domestic violence and other entities from the same group under the same conditions not? Maybe the answers seem to be simple at first glance, but in fact it is a challenging issue. Knowing the causes of domestic violence is seen in the current available literature as the knowledge of its roots. The removal of its causes is being compared to the elimination of domestic violence from our society. Many researches are devoted to the knowledge of domestic violence, that is to its partial questions. However, there are fewer researches that have focused on identifying and investigating the causes of domestic violence in individual groups of the population. Most frequently these studies are focused on detecting and studying the causes of domestic violence on women and children. Only a minimum of studies are examining the causes of domestic violence on seniors or on disabled people. Researches examining the causes of domestic violence on men we can only meet very rarely, even though they are one of the possible group of victims of domestic violence. With development itself, emancipation and the consistent promotion of

human rights we are increasingly confronted with families in which women have the dominant position. They are abusing their position in certain ways and they are getting into the position of the aggressors towards their partners or husbands. Studies of the causes of the above mentioned behavior as violence against men are unfortunately still absenting in our country. Clearly from these facts it is seen that even in this very frequently studied area, there are some partial aspects that have not been sufficiently examined and described yet (Tittlová, 2017).

1 CAUSE OR THE RISK FACTOR

Regarding to the causes of domestic violence, as Holcr (2008) writes it is necessary to clarify the fact that their knowledge is extremely demanding or even impossible. For that reason, the most of criminologists tend to identify criminogenic factors as the risk factors of domestic violence or violent behavior in the family in general. As we have already mentioned, the key is to answer the question why does domestic violence occur at all and why do certain entities from different groups of population become victims of this phenomenon and others not. It is often possible to completely compare the living and subsistence conditions of all subjects and it is interesting that some of them become victims of domestic violence and others exactly in the same conditions do not. Therefore, it is not possible to clearly state that the cause of domestic violence is one or the other phenomenon. Consideration is given only to certain risk factors where the possibility of violent behavior is increasing. It may appear, but not necessarily occur in every case. There is a high number of internal and external factors, affecting the emergence of domestic violence, while the development and the course of many of them can not be accurately described in any way. Interestingly, besides the external factors, on the rise of violent behavior in families even internal factors are significantly participating. These factors are generally investigated on the side of the aggressor, but the behavior of the victims may contribute to their own victimization, though without their knowledge or intention (Cabanova, 2006). It is important to be aware of the constant features of domestic violence against other types or forms of crime. In the case of domestic violence, two life paths are confronted, which are connected with relatively deep bounds. Both subjects – the victim and the aggressor – naturally grew up in a family environment that influenced and shaped them in a certain way. Similarly, both of these entities form together a family or another very close community, which greatly affects its members and forms their personalities. Last, but not least, cohabitation in families also affects other subjects, so the behavior of the victim and the aggressor, and individual attacks in the context of domestic violence also affects them, naturally in a negative way.

In the criminal procedure point of view, domestic violence in case of grievous bodily injury is a reason for issuing the European arrest warrant (Klimek, 2012), even the requested person would not accept it (Klimek, 2014).

2 THE DIVISION OF THE RISK FACTORS

Among the different criteria for categorizing the risk factors of domestic violence, we found the most appropriate to break them down into these factors:
- Individual factors, that is relating to an individual,
- Factors rooted in the idea of society – social factors,
- Factors depending on the nature, character and linkage that arises in a relationship (also known as factors of relationships),
- Factors operating in a certain closed environment in which domestic violence subjects live – so called factors of kinship community.

All of these categories include a variety of factors that can be economic, financial, material, social or related in their nature. Nowadays, the social, financial and material factors undoubtedly can be

considered as highly risky in the society. These mentioned factors often have the effect of creating an environment in which domestic violence will break out or it will escalate. The social situation, the financial circumstances or the economic situation of families are, according to international organizations, one of the most risky factors not only of domestic violence, but of criminal behavior in general.[3]

It is possible to subsume a whole range of factors under the above mentioned groups of risk factors which in families do not usually act independently, but in various combinations. The increasing number of mutually combining risk factors naturally weakens each of them, but on the other hand, increases the probability of violent behavior. The following risk factors can be subsumed under different groups:

- Individual factors (relating to an individual)
  - Low age, that is the partners´ youth which is associated with the level of their personal maturity, physical and psychological predispositions; opportunities to become parents and to function in this role,
  - Excessive alcohol consumption of one of the partners,
  - Usage of some other narcotics by one of the partners,
  - Mental illness, disorders, serious depressive states,
  - Strong temperament, emotional lability, affectivity,
  - Any or only basic or vocational education,
  - Financially poorly ranked job classification of low income in general,
  - Dispositions of domestic violence which are encoded in individuals from their original family environment (usually when they were directly exposed to domestic violence or they were witnesses of domestic violence as children).
- Factors rooted in the idea of our society – so called social factors
  - In society there is a family arrangement where the man represents the head of the family and he is its guardian and leader,
  - Hierarchy of relationships between a woman and a man in which woman has a subordinate, inferior and less-ranked position,
  - Social perception of a woman solely as a wife and a mother with which the care of the household, the man, the births of the babies and their upbringing is connected,
  - The existence of norms that help the survival of violence in society (different sayings in which domestic violence often occurs).
- Factors based on the nature, character and linkage that can arise in a relationship (so called relationship factors)
  - Quarrels and conflicts in partnerships, parent-children relationships or the one between children, grandparents, etc.,
  - Incompleteness of families,
  - Pathological and criminal behaviors in families,
  - Instability in relationships,
  - Excessive male dominance,
  - Preference for one of the offspring,
  - Social weakness of families, poverty,
  - Economic imbalance.
- Factors operating in a certain environment in which the subjects of domestic violence live (so called factors of community, collective or environment)
  - The absence of legislation that deals effectively and comprehensively with the problem of domestic violence,
  - Difficulties in detecting and proving domestic violence,

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[3] World Health Organization: World Report on Violence and Health. Geneva, 2002, s. 98

- Relatively low sanctions against aggressors for their violent behavior in domestic violence,
- Benevolence against domestic violence, its oversight, its alleviation, accusation of victims,
- Low social awareness,
- Weak community cohesion,
- Disinterest.

3 THE SCOPE OF THE RISK FACTORS

3.1 Alcoholism as a risk factor

Excessive consumption of alcohol or alcoholism is significantly signed under the violent behavior of individuals in general. It also significantly impinges on violent behavior in domestic violence. It helps the formation, development and escalation of domestic violence and prevents its effective solution. Alcoholism is one of the pathological manifestations in families which is directly and very closely related with domestic violence. In lots of studies it can be clearly seen that alcohol is releasing barriers, increasing aggressivity, helping to ventilate stressful situations and increasing tensions what play a very important role in domestic violence. Alcoholism itself can be perceived as a risk factor, but not in its traditional perception. A certain link between alcoholism or the usage of other narcotics and domestic violence is evident, but these addictions are much more able to exacerbate the existing problems in different forms of risk factors which are even present. According to statistical surveys, it appears that on average up to 70 % of the aggressors were under the influence of alcohol or other drugs during the attacks. In conjunction with several factors, alcoholism or other addictions contribute to the outbreak or to the increase of the intensity of domestic violence. However, no research has confirmed the casual relationship between the usage of alcohol or other drugs and domestic violence. According to psychological studies, heavy alcoholics only rarely behave violently in the family. Their conduct is focused and motivated differently. Domestic violence in these cases justifies the existence of other risk factors. Although under the influence of these substances the aggressiveness of physical attacks may increase, but at the time of soberness other forms of domestic violence are present – psychical violence, sexual violence, neglect, social or economic control. This fact, on the contrary to other forms, can occur during the full awareness of the aggressor, suggests that the cause of domestic violence has its roots in other risk factor or is a combination of them, but it is not the dependence itself. It is true that violent attacks can exacerbate and can be more intensive under the influence of these substances. In case of some aggressors a thorough preparation or the planning of a violent attack was proved and the alcohol was only the trigger in these cases. According to psychologists if there were no alcohol or drug abusive attacks, they would certainly occur additionally.

Although a link between alcoholism and other addictions can not be denied, domestic violence as an abuse of dominant position is not a direct result of these pathological phenomena. More often alcoholism is being used by aggressors as an excuse to hide or justify violent attacks. It is necessary to realize that alcoholism or other addictions are currently very widespread, but only a certain percentage of people are acting violently in the family under their influence. On the other hand, violent behavior occurs in many cases even without different addictions. Alcoholism and other addictions as causes of domestic violence need to be perceived as one of the myths in the field of justification of this phenomenon.

3.2 Factors of the violence against women

For the causes of domestic violence against women there are several theories that try to justify this phenomenon. We meet theories that justify domestic violence by factors on the side of the individuals,

they give specific explanations (different addictions, alcoholism, stress, psychological problems, etc.), but such justifications are not sufficient and neither entirely consistent. However, all of the above mentioned phenomena may be the trigger of aggressive behavior, but the risk factors which justify the domestic violence against women do not elucidate completely. Significantly more effective are structural approaches to justify domestic violence against women. These approaches emphasize that as a result of socialization, our society lives in in an environment dominated by gender stereotypes. Violence against women, which occurs in families, is thus only a reflection of the imbalance between men and women in society still remains. Naturally, the most notable imbalance could be seen in the economic, human rights or intimate sphere. These negative trends remaining with us, are the remnants of past eras in which such organization and hierarchy were strictly applied. Nowadays, these phenomena are percieved as highly negative. Women´s political, social or economic dependence automatically creates a space for building a power position for male gender. This is how a space is created for the application of the old habits, traditions or arrangements that were typical for previous eras. Characteristic feature of these cases is a consistent class arrangement and gender inequality. The acceptance of gender equality between sexes in all areas of social life is the basis for eliminating violence against woman in their family. Of course, in many cases (in many cultures and areas) domestic violence against women is rooted in strict religion, majority belief. Typically, Muslim countries are considered to be those in which religions, traditions and customs promote gender inequality between men and women, that means they clearly prefer male gender. Men have there not only the monopoly of power, but also the monopoly of decision-making, material monopoly, financial monopoly and monopoly of education. In some cases, also the media contribute to the gender inequality with the formats they present. Furthermore, especially in the intimate area, the educational institutions present a traditional view of the roles of man and woman in relationship. This all contributes to the existence of gender inequality in our society, in relationships and overall in the imagination of a considerable part of the population. The dominant position, the power monopoly, the ability to make decisions about the family or about financial issues is attributed to the man which naturally leads to a certain discrimination of the female sex. These very facts alone are seen as serious interference with women´s rights. This nature can be clearly admitted to violent assaults for which gender imbalance is the source and basis (Egger, 1999).

Other factors which help the emergence of violence against women in the family can be also the traditional views of male sex in itself. In addition to physical dominance a man is presented as a protector, breadwinner and a dominant subject. In the traditional role of a man, no personal failure or manifestation of personal weakness is allowed. Boys are often brought up with this from their childhood to their late puberty, while we talk about the same human beings as the opposite sex. Men also experience emotions, even though they do not show them, because it is not their biological essence. Emotions, winnings, losses and disappointments however, they live through in the same way like women do. The belief that a man must be strong, stable in decisions and successful in any case often leads to the emergence of risk factors of domestic violence. The manifestation of different forms of domestic violence are supposed to present outwardly what is expected from a man and what does he miss in particular cases. According to the results of some German surveys confirmed by Bentovin (1998), unlike the required standards for the male role in society, failure seems to be as one of the key causes of aggressive behavior in families (both against children and women). Aggressive and violent behavior is a form of self-assertion (of a man or a boy) in the social environment. Apart from that, whether if the violent behavior was encoded in a man from his childhood, this knowledge makes possible to justify the violent behavior not only against women, but also against children with any male individual. Of course, not all men behave violently, though potentially this tool of self-assertion can be used. Traditionally oriented socialization leads men to perceive themselves as the head of the family and women as mothers and wives. Different surveys have shown that all individuals using violent models of behavior have come from families and an environment in which the typical division of roles, tasks or positions has been applied, so the traditional perception of man and woman has not been questioned. The man finds it difficult to reconcile with the change of his dominant position in which he was brought up, in which he lived all his life and he automatically wants to regain his position. He wants to

succeed (to get the position of power) in the new environment and he uses violent forms of behavior in the family for these purposes.

Available resources point to the fact that many males who behave violently in their families lived and had been brought up in an environment dominated by an extreme patriarchal structure. For men who have been raised in such system, their dominant position is absolutely natural. For such men, violence against women and children is a natural tool for ensuring obedience and proper functioning of the household. Domestic violence is a reaction to the failure of women or children to do so that it suits men´s ideas. Such a rooting of violent behavior from the aspect of the appearance of domestic violence at a later time is highly risky and almost always leads to domestic violence.

3.3 Factors of violence against children

Domestic violence in relation to children is in many cases very similar to violence against women. It is a manifestation of the dominant and authoritarian position of a man in the family, household, etc. It is some kind of means of forced obedience and promoting man as such. As it used to be in the past, the man was deciding about the education of children, so it was the man, who decided even about the physical existence of the children a few thousand years ago. Similarly, in Rome, male offspring was promoted to the detriment of the female. Newborn girls were killed immediately after their birth because they were not beneficial to their fathers. They were associated with additional costs and so it was economically less beneficial to have a girl than a boy. The perception of this important position of a man in our society still persists. Often this traditional position is the cause of child abuse. Last, but not least, it is a tool of obedience enforcement and a child-raising tool in families, which is naturally not acceptable. Neglect as a form of violence against children is a manifestation of some kind of benevolence towards their own children, some form of abuse or education method – punishing a child. Such forms of abuse are especially used by parents (mothers and fathers alone of together) who did not want to have children or who do not have a positive relationship with children. However, the abuse of children may also be a response to their uncontrollability, the failure of parents with their education and the fact that parents are no longer able to manage children who are hyperactive or very lively. Violence against them may therefore have an educational character for the parent, but it can also be the summit of the long-term accumulated tensions and stress which are often caused by the education of children and its confounding.

3.4 Factors of the violence against men

If we talk about men as victims of domestic violence, usually these forms are not physical, but psychological violence, economic or social control. To a certain extent, this albeit unusual, but realistic phenomenon we may ascribe to the level of women´s emancipation and its improper perception. In many ways, women want to be self-sufficient, independent and deviate from the perception of women as the gentle sex. They become dominant in the family even in the property or financial relationships and thus they want to decide on the issues in their privacy. For this reason, some forms of domestic violence against men arise. One of the reasons is also the women´s interest in revenge against the opposite sex. In most cases, we talk about women who have been victims of a classic stereotypical perception of the role of women in their original family or became victims of violence as children. The rooted hatred of the male sex, which is a psychological problem in this case, leads women to power and dominate manipulation with them. The forms of psychical violence are very insidious and usually motivated by revenge or by interest to harm them – insulting, mockery, underestimating, pointing to the weakness of a man, his low income or inability to secure a family. The pursuit of perfection, the achievement of total harmony or trouble-free functioning leads perfectionists to such psychological, economic or social violence. We encounter physical violence very rarely, because in most cases women physically do not exceed men. Similarly, this phenomenon is motivated by the interest of domination in the relationship, the household management or by the interest in revenge on men.

3.5 Factors of the violence against seniors

A specific category of victims of domestic violence are seniors. They often overlook the domestic violence even if they suffer from repeated attacks. Some of them are unable to solve this problem because of their physical and mental condition. However, many of them even do not talk about it or do not try to solve this problem out, although it is in their power. They are grateful for every attention, for every expression of interest from the aggressor or they perceive themselves as a burden, so they choose to accept the violence. Last, but not least, they are sometimes afraid of the shame and the feelings of failure in the upbringing of the aggressor. Often the aggressors are the only relatives they have, so they do not want to interrupt their relationships and do not want to solve domestic violence either. The causes of domestic violence against seniors are different – from stress to financial or property causes. On the side of the seniors for risk factors are considered:

- Older age
- Physical disability
- Typical diseases characterized by older age
- Mental illness
- The need for senior care, his or her dependence
- Financially demanding treatment
- Quality property and financial facilities, etc.

Taking care of seniors as well as disabled people is not easy and often requires some professional qualifications or frequent visits of doctors. The aggressor usually has his own family and own world in which he wants and has to work in a certain way, so the care for the senior becomes demanding for him even in financial, time and all other aspects. From the aggressor´s point of view the senior becomes a burden that exhausts him and he can not do what he wants (his job, family, interests, etc.), which leads him to the feeling of helplessness, fatigue, often anger and exhaustion. In some cases, there is also a feeling of helplessness in the aggressor if he or she can not secure the care of the senior and from that reason the senior is unknowingly neglected what can harm him or her in different ways. All these feelings – the frustration that is caused by them – is a significant risk factor. It is often the basis, on which certain forms of domestic violence are beginning to emerge. These are usually physical attacks, psychological abuse or neglect of seniors. In a very similar situation are even people with disabilities. It is striking that seniors are becoming victims of domestic violence from property or financial reasons. In this case the aggressor is the child or grandchild of the senior who gains a substantial part of the senior´s entire pension in this way. The aggressor is also very often interested in other properties of the senior (usually different real estate or valuable movable property). Violent behavior of children may also be motivated by transcription of the property rights to him or her, or the interest in forcing the seniors to leave their original homes (common house or flat) and to place them in retirement home.

CONCLUSIONS

Based on the above mentioned, recognizing the causes of domestic violence is a very difficult process. For the reason that the determination of exact causes is not possible, we are therefore interested in and analyzing the factors that can indicate the violent behavior in the family. That is why the contribution in its first section introduces the domestic violence in itself and the difference between the causes and risk factors. Subsequently the contribution deals with the division of risk factors and with these risk factors in different areas against different groups of people.

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