

BUDAPESTI CORVINUS EGYETEM
GAZDÁLKODÁSTUDOMÁNYI KAR
havi szakfolyóirata

SZERKESZTŐSÉG ÉS KIADÓHIVATAL:

1093 Budapest, Fővám tér 8.
t: +36 1 482-5121, 482-5187
www.vezetestudomany.hu

FELELŐS KIADÓ:

Budapesti Corvinus Egyetem
Gazdálkodástudományi Kar

SZERKESZTŐBIZOTTSÁG:

Aranyossy Márta
Csillag Sára
Demeter Krisztina
Havran Dániel
Keszey Tamara
Kő Andrea

TUDOMÁNYOS TANÁCSADÓ TESTÜLET:

Bánfi Tamás
Becsky Róbert
Bélyácz Iván
Bordáné Rabóczki Mária
Chikán Attila
Cser László
Dobák Miklós
Gaál Zoltán
Gálik Mihály
Grubbström, Robert
Hofmeister Tóth Ágnes
Horváth Péter
Kerekes Sándor
Kövesi János
Mészáros Tamás
Szintay István
Vecsenyi János
Veress József
Wetzker, Konrad

FŐSZERKESZTŐ:

Primecz Henriett
vezetestudomany@uni-corvinus.hu

OLVASÓSZERKESZTŐ:

Nusser Tamás

SZERKESZTŐSÉGI TITKÁR:

Baksa Máté
titkarsag.veztud@uni-corvinus.hu

ISSN: 0133-0179

NYOMDAI KIVITELEZÉS:

Komáromi Nyomda és Kiadó Kft.

ELŐFIZETÉS:

Előfizetésben terjeszti a Magyar Posta Rt.
Hírlap Üzletág. Előfizethető közvetlen a
kézbesítőknél, az ország bármely postáján,
Budapesten a Hírlap Ügyfélszolgálati
Irodákban és a Központi Hírlap Centrumnál
(Budapest VIII., Orczy tér 1.
t: 06 1 477-6300; p.cím: Bp., 1900).
i: 06 80 444-444
e: hirlapelofizetes@posta.hu

Előfizetési díj egy évre 9600 Ft
Példányonkénti ár: 1000 Ft

Megjelenik havonta.

Egyes példányok megvásárolhatók
a Szerkesztőségben, Fővám tér 8.

Kéziratot nem őrzünk meg és
nem küldünk vissza!

VEZETÉSTUDOMÁNY

L. ÉVF., MÁJUS

2019. 5. szám

CONTENTS

JÁKI, ERIKA – MOLNÁR, ENDRE MIHÁLY – KÁDÁR, BÉLA

CHARACTERISTICS AND CHALLENGES OF THE HUNGARIAN STARTUP ECOSYSTEM 2.

KATONA, VIKTÓRIA NÓRA

ROLE AND POSITIONING OF REWARD BASED CROWDFUNDING IN THE FUNDING OF
TECHNOLOGICAL INNOVATION PROJECTS – VIEWPOINT OF ENTREPRENEURIAL FINAN-
CING EXPERTS 13.

VAJDA, ÉVA

PERCEIVED JUSTICE AS A CRUCIAL FACTOR OF PERFORMANCE
MANAGEMENT SYSTEMS 25.

MOUNIA UTZERI

THE DARK SIDE OF GENDER EQUALITY SCHEMES IN MANAGEMENT –
A DEEP DIVE INTO A GERMAN AUTO MANUFACTURER 38.

BALOGH, JEREMIÁS MÁTÉ – MÉNESI, KRISTÓF

ANALYSING THE COMPARATIVE ADVANTAGES OF THE INTERNATIONAL OIL TRADE: THE
CASE OF GULF COOPERATION COUNCIL 48.

NÉMETH, KRISZTINA – DÖRY, TIBOR

INFLUENCING FACTORS OF INNOVATION PERFORMANCE IN FAMILY FIRMS –
BASED ON AN EMPIRICAL RESEARCH 58.

A CIKKEK MAGYAR NYELVŰ ÖSSZEFOGLALÓJA 72.



Budapesti Corvinus Egyetem Gazdálkodástudományi Kar szakfolyóirat
Published by Corvinus Business School Corvinus University of Budapest

www.vezetestudomany.hu

CHARACTERISTICS AND CHALLENGES OF THE HUNGARIAN STARTUP ECOSYSTEM

In this paper, the authors' aim to explore the Hungarian startup ecosystem on both the demand side and the supply side. To achieve this, they conducted a survey reaching both startups and investors. In the survey, the authors observed features of Hungarian startup entrepreneurs such as gender, age, education, previous entrepreneurial experience, and their motivation for establishing startup companies. Furthermore, the authors focused on financing, location, target markets, employment, and operational difficulties. They also examined the attitudes of the startups and of the ecosystem's other actors such as venture capital investors, incubator houses, accelerators, corporations and co-working spaces regarding various characteristics of the ecosystem. They deemed cooperation between the members of the ecosystem, international relations and the opportunity for startups to start again after a failed startup to be the most important characteristics. They perceived the strongest characteristic of the Hungarian ecosystem to be social events (meetups and networking), while the most problematic: the opportunity to start again after failing a startup and the required level of entrepreneurial administration¹.

Keywords: startup, SME, startup ecosystem, venture capital, accelerator, incubator

Nowadays the existence and continuous development of startup ecosystems are phenomena that can be observed in all Central and Eastern European countries. The development program of 2014-2020 boosts the startup ecosystem in Hungary due to the expansion of available financial resources. One of the long-term strategic goals of the Hungarian government is to develop the startup ecosystem; therefore, it also actively participates as a financier at the venture capital market. It has established Hiventures from the former Corvinus Venture Capital Fund Management, which has become the biggest government-owned venture capital fund management in Hungary. It is essential that government-owned or private venture capital (VC) fund management companies know and understand their target group, the startups.

Jáki and Molnár (2017a) gave an overview of the Hungarian venture capital market, the volume of investment at the venture capital funds, and the theoretical background of the government intervention. They compared the government-owned and private venture capital fund management in terms of their main operational characteristics. As government involvement can be justified by the existence of market failures, Jáki et al. (2017) investigated them in more detail. They defined three main market failures at the venture capital market: the asymmetric information regarding the business plan; the high transaction costs during the evaluation of investment opportunities; and the externalities produced by a new startup such as job creation or regional development. Rääkkönen et al. (2016) show that the consideration of sustainability and profitability in investments can be combined successfully. Jáki and Molnár (2017b) focused on the model of the Hungarian VC market. They showed how state subsidies are distributed

to target companies and summarized the history of the Hungarian VC market with its most important milestones. The main characteristics of startup ecosystems have been under investigation for many years now. The aim of our exploratory research is to determine the main characteristics of Hungarian startups and investors in 2017.

All startup companies need a supporting ecosystem for rapid development and easy access to global markets, which is usually only available in big cities. Several studies investigate the beneficial factors that encourage the founding of new enterprises. Roman et al. (2018) found a significant correlation between macroeconomic figures (GDP), demographic variables (population growth rate), and the spirit of entrepreneurship. Besides macroeconomic and demographic features, other factors and events can support startup entrepreneurs naturally. According to our survey, actors of the Hungarian startup ecosystem found the following factors particularly useful: community events, co-working offices, startup competitions and the availability of mentors and consultants in Hungary. Likewise, Timilsina et al. (2016) found positive and significant relationships between the business environment, competitiveness, and firm performance. However, they also added, that one should put more emphasis on competitiveness to improve firm performance instead of blaming the business environment.

The most important actors of the Hungarian startup ecosystem are the startup companies themselves supported by incubator houses and accelerators who can provide access to their networks, consultancy services and occasionally financial resources as well.

To get to know the startups, first, we have to define what a startup company is. We have found different

¹ Jelen publikáció az EFOP-3.6.3-VEKOP-16-2017-00007 azonosítószámú „Tehetségből fiatal kutató - A kutatói életpályát támogató tevékenységek a felsőoktatásban” című projekt keretében jött létre.

definitions for startups based on the 2016 V4 reports (Dzurovčinová, 2016; Kollmann et al., 2016; Skala – Kruczkowska, 2016; Staszkievicz – Havliková, 2016) and based on the Digital Success Program created by the Hungarian government (Cabinet Office of the Prime Minister, 2016). We found the most appropriate definition to be the one used in the Program: “startup means a new company with high growth potential or a project team starting the process of becoming a business and preparing for the entry to the market” (Cabinet Office of the Prime Minister, 2016, p. 22.). Even though a uniform definition is missing, in startup ecosystem studies the final selection of startups was based on self-categorization. According to this, only those companies were involved in the surveys, which defined themselves as a startup and they were not investigated further whether they were corresponding to pre-determined definitions.

When trying to distinguish incubator houses and accelerators, there is always confusion not only about their names but also about their provided services. This is why we do not distinguish these two actors in our survey. Incubator houses and accelerators support startups in implementing their business idea with training and with their business network to find the right mentor or get access to the international market. Certain accelerators and incubator houses – in return for a small equity share – occasionally even provide capital for the startup company (Lovas – Riz, 2016). It is becoming common, that venture capital investors establish accelerators to finance the most promising enterprises from their own seed funds.

In our research, investors were represented by the CEOs of the Venture Capital (VC) fund management companies. They manage the VC funds, which are a form of accumulated capital without its own legal entity. The investment is made from the fund by the VC fund management company, which is represented by the investment managers who first evaluate the investment opportunity, namely the business plan of the startups.

Co-working spaces are shared working environments where entrepreneurs can work side by side, thus potentially generating some synergy from sharing their experiences with each other while working. Large corporations are also interested in the startup ecosystem since many of the innovations that can be used in their industries come from this sector. They run programs to help startups, and potentially benefit from their innovations when it matches their profiles.

Methodology and database

Our study was conducted with the participation of Hungarian startups and venture capital investors, accelerators, incubator houses, corporations, and co-working spaces. The survey ran for a period of one month, from 15th of August to 20th of September 2017. The questionnaire contained multiple-choice and open-ended questions and we used SPSS for the analysis.

Our aim was to ask the whole population (census method) at the same time. The sampling method used for the survey was nonprobability convenience sampling, where the researcher makes an effort to reveal the whole

population of the startup ecosystem and makes them fill out the questionnaire. For reaching the startups, we made use of one of the biggest startup databases: Crunchbase. The Crunchbase database contained 200 registered Hungarian startup companies in August 2017, to whom we sent our survey. The startup CEOs and founders were invited to participate via e-mail. Our survey was completed by 66 startup companies.

For reaching the VCs, we approached The Hungarian Private Equity and Venture Capital Association (HVCA), which represents the interests of the private equity and venture capital sector in Hungary. There were 26 Venture capital investors registered in HVCA at the time of our study and 14 of them agreed to fill out our survey.

We wanted to also reach the Hungarian incubator houses and accelerators. There is no sharp boundary between these two types of supporting entities. We managed to reach almost all the incubator houses and accelerators in Hungary with 25 respondents. There are less than 10 co-working spaces in Hungary, and we managed to reach 3 of them, 2 in Budapest and 1 in Győr. We also managed to reach 4 large corporations involved in the ecosystem, 2 from Szeged, 1 from Győr and 1 from Debrecen.

Research question

Since startups are required to be scalable, IT startups secured a leading position among their peers. Thus, it is easy to assume that most startups come from an IT background, are somewhat lacking in business and finance skills and need help to make their business plan, to secure financing, and to determine their company’s value. We formulated 9 research questions (Table 1) to explore the Hungarian startup ecosystem.

Table 1. Research questions

RQ1: What are the key demographic characteristics of Hungarian startups?
RQ2: What are the main motivational factors of Hungarian startups according to the age and gender of startup founders?
RQ3: What do startups consider the main challenges of scaling their company?
RQ4: What is the job creation potential of Hungarian startups?
RQ5: What are the main financial sources that fund Hungarian startups?
RQ6: Which factors do the startup ecosystem members deem the most important in a startup ecosystem?
RQ7: Are there significant differences between the opinions of the ecosystem member subgroups about the importance of these factors?
RQ8: How do the startup ecosystem members rate the Hungarian startup ecosystem along the different characteristics?
RQ9: Are there significant differences between the opinions of the ecosystem member subgroups about the evaluation of these factors in Hungary?

We want to find out who the Hungarian startupers really are, what motivations drove them to the startup scene, what are their biggest challenges and where do they get their financing (RQ1-3, RQ5). It is also useful to look at the job creation potential of Hungarian startups since job creation is often used to justify government intervention at the startup financing market, which is very prevalent in Hungary (RQ4).

On the other hand, we were also interested in the Hungarian startup ecosystem as a whole, more specifically, what factors do the ecosystem members deem important in a startup ecosystem and how do they rate the Hungarian ecosystem along these factors (RQ6-9). We approached VC investors, accelerators, incubators, co-working spaces and corporations to help illuminate this topic.

Characteristics of the Hungarian startupers

In this section, we try to answer RQ1: what are the key demographic characteristics of Hungarian startupers? Let's look at the startupers' characteristics who participated in our survey as we try to answer this question.

Based on the results of the questionnaire, entrepreneurs of start-up companies were typically between the age of 26-35 (38%) and 36-50 (42%) altogether representing 80% of total startupers. Only 9% of startupers were between the age of 19-25 and 11% were above 50 years. Korosteleva and Mickiewicz (2011) also examined the age distribution of startup entrepreneurs and found that the financial scale of the project increases with the age of the entrepreneur. This finding indicates that higher experience, established reputation, and accumulated savings of older entrepreneurs increase the chance of successfully collecting financial sources.

According to our survey, 86% of startupers were male and only 14% female, thus women are heavily underrepresented among the startupers. This is, however, an international trend as based on the research of European start-up Monitor from 2016, the ratio of female startup founders is only 14,8% in Europe (Kollmann et al., 2016). Investigating the gender composition further, we found that in 32% of the cases, at least one female founder was present in the respondent startup teams.

According to our survey, 83% of the startupers have a higher education degree. 53% have a master's degree. Within the segment holding the master's degree, 6,1% also has a Ph.D. degree and 7,6% has an MBA degree. 16,7% of the respondents of startupers indicated that they are still a student at a secondary school. As can be seen on the following chart, the highest education level of the majority of startupers is MA/MSc (39%), followed by BA/BSc (30%). Entrepreneurs with only secondary education represent a significant portion too (17%), while entrepreneurs with Ph.D. or MBA only represent 6% and 8% of responder startupers. Based on the self-reported motivations of startupers we think that this distribution can be attributed to the following. Our respondents are generally not happy with the corporate lifestyle that they are forced into and the level of compensation relative to their company's profit, this is one of the motivating factors for launching their startup. Additionally, they crave more creative freedom. These are signs that these startupers previously worked or presently work in subordinate positions with relatively lower pay in the

company, having to do repetitive tasks. These people generally have BA/BSc and MA/MSc degrees, and they feel that they are capable of higher-level tasks than the ones they are asked to do in their corporate jobs. On the other hand, only a small percentage of startupers have an MBA degree, which can be attributed to the fact that many MBA degree holders are in higher level managerial positions, where they must use all their skills and energy. Ultimately, they have no energy and motivation left for other professional projects, such as startups. Ph.D. holders are very occupied as well having to constantly write new research papers, teach at their university and usually perform consultation and teaching outside the university too, this explains why only a small portion of startupers have Ph.D. degrees (Herzberg, 2017) (Figure 1).

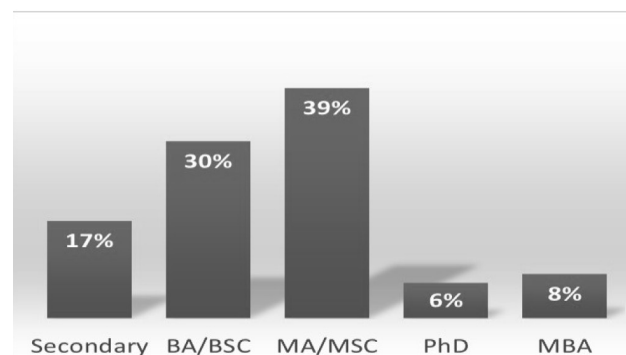


Figure 1 The highest education level of startupers in the Hungarian Startup Ecosystem (Source: own database)

Based on our survey, 47% of the Hungarian startupers graduated in the field of social sciences. Within the field of social sciences, respondents from economic sciences represent 64%, marketing 9%, general business studies 6% finance 10% and 11% graduated from other fields. Engineering represents a significantly smaller segment of qualifications – 22,7%, information technology represents 10,6%, and finally the arts and natural sciences both represent 3% (Figure 2).

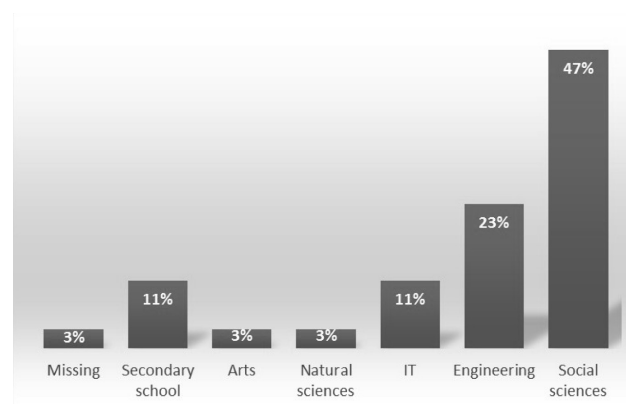


Figure 2 Startupers' areas of education (Source: own database)

The startupers believe that the most important skills and knowledge to launch a successful start-up are as follows: general business knowledge, project management,

marketing, PR knowledge, and sales skills. They also regard the following fields crucial: legal, information communication technology, big data, and business analyses.

79% of the respondent startups were founded and operate in Budapest. Miskolc (7%) is the second most favored place to establish a startup company. Overall, only 21% of the respondents chose a city that is not the capital (*Figure 3*).

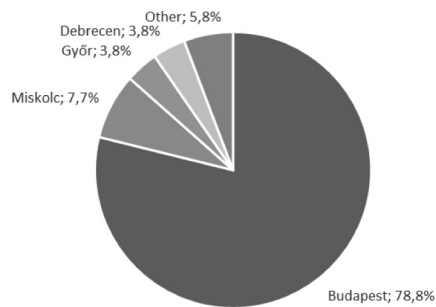


Figure 3 Headquarters of the startups
(Source: own database)

Actors of the Hungarian startup ecosystem found Budapest the most attractive city in the CEE region, followed by Prague, Bratislava (Pozsony) and Vienna but Warsaw, Krakow and Berlin were mentioned as well. Regarding the Hungarian cities, the respondents found Budapest the ideal location, followed by Debrecen and Győr. We can conclude based on our survey that Hungarian startups are mainly men from Budapest holding a BA/BSc or MA/MSc degree from the fields of social sciences, engineering and IT (RQ1).

Motivation for establishing a startup

We now examine the differences in motivations for launching a startup according to the age and gender of startup founders (RQ2). Based on the answers, we distinguished the following motivational categories:

- Young and bold,
- Mission-sense,
- Self-actualization,
- Autonomy, independence.

Table 2 and 3 contains the results for the male and female subsamples. However, since there were 57 male and only 9 female respondents among the startups, the generalizability is much greater in the male subsample.

Table 2. Motivation for launching a startup - women	
Age/ Gender	Women (n = 9)
19-25	Young and bold: “More freedom and free time”, “to have a challenging job”
26-35	Self-actualization: crave for success, come up with an idea
36-50	Self-actualization: “Based on my experience, I had an innovative idea.” or “I believe in my idea which should be realized.”

Table 3. Motivation for launching a startup - men

Age/ Gender	Men (n = 57)
19-25	Young and bold
26-35	Self-actualization: “I want to realize my idea”, “addiction to do something new.” “to put my dream into practice”, “to have a good group to work with” Mission-sense: “to create something permanent, everlasting”
36-50	Autonomy, independence: “to get a higher share from the profit”, “being fed up with the corporate lifestyle” Mission-sense: “to make something valuable” Self-actualization: “to realize an idea”, “I am a born entrepreneur”

Based on the answers about motivation, it is useful to investigate how experienced a startup entrepreneur is. Partly, they are fed up with the atmosphere of multinational companies. Stadnicka and Sakano (2017) show that multinational companies should motivate their employees to be a part of innovation and value creation, but this behavior is hardly recognizable in the Hungarian scene. In the age group of 36-50, some male respondents identified themselves as „born entrepreneurs” which can indicate that entrepreneurs in this age group reached the pinnacle of their craft. Regarding the entrepreneurial experience, it is important to know whether the startups have taken part in a failed startup or not. 40% of the startups participated in at least one failed startup but only 14% participated in more than one.

Another indicator of a “born entrepreneur” or the entrepreneurial experience is the current occupation of the startup. The respondent could choose from the following answers: I am a student; I am a freelancer; I am doing my startup besides my full-time job; I am involved in one or more businesses; my startup is my full-time job. Based on the answers, 35% of the startups count his startup as a full-time job and 25% are involved in more than one startup. 17% of them manage their startup besides their full-time job. Only 9% of them deal with the business besides their higher education studies and 14% of them are freelancers.

Scaling strategy

The scaling strategy of a startup is the plan for increasing the number of customers on the national, regional and global levels while keeping the marginal costs low. In this section, we examine what do startups consider the main challenges of scaling their business (RQ3). Startups typically provide a service to their customers via the internet and through client computing devices (PC, tablet, smartphone). It is easier to “scale” by providing internet-based services/products than physical products. When increasing the sales volume of IT services/products, the main additional cost is the purchase of new servers or new customer service staff. Meanwhile, if a manufacturing company wants to increase its sales volume, it has to install new production lines or even build new factories, all of which take a sig-

nificant amount of investment. The marginal cost of creating physical products is also much higher than the marginal cost of an IT startup. Consequently, startups can grow their customer base and revenue with relatively low additional investments, assuming their product or service can be scaled, and the company has an appropriate scale strategy.

It is another question, whether it is beneficial to the whole economy that the main type of funded startups is the IT startup. This restricts many novel business ideas from realization which would require a substantial workforce. This fact, unfortunately, limits the job creating potential of the classic startup, which we will examine in more detail in the next section. The other issue with the dominance of IT startups is the increased difficulty that hardware startups face when seeking financing. It is much more costly for hardware startups to develop the prototype, they generally have lower profit margins and lower scalability. Hardware startups thus increasingly utilize crowdfunding to secure financing, rather than to compete with software startups for VC financing. Government sponsored VC investors could help hardware startups to get funded, expanding the job creating potential of the startup sector.

In our survey, 73% of startups stated that they possess a scaling strategy. The greatest challenges of a scaling strategy were considered the following: financing, penetrating new markets and the lack of distribution channels. As Hungary is a small and open economy, it is essential for startups to penetrate external markets to achieve economies of scale within the investment period. Based on our survey, most of the Hungarian startups thought that access to international markets has the greatest impact on the growth potential of their company. Consequently, 50% of startups marked the following activities as priorities for the next year: increasing the sales volume and penetrating new markets. Even though most of the startups plan to extend their operation abroad, only 10% of the respondents stated that they have at least one foreign founder. 60% of startups also need assistance to enter foreign markets.

On the one hand, startups must concentrate on their sales activity. On the other hand, the product or service needs constant development, particularly in the first 1-3 years. Product development was also mentioned by 50% of the companies as a main priority in the next year. In our survey, we used multiple choice questions to determine the area where startups believe that they need assistance (*Figure 4*).



Figure 4 Activities where the startups need assistance
(Source: own database)

The activity where most startups need assistance is entering new markets. This is followed by product development, sales growth, and technological development. Only 19% would like to use external help in raising funds and

just 16% need assistance in organizational development and workforce expansion. Further results correspond with the findings in the educational part of the study. About 50% graduated in the field of general business science and only 11% in the field of information technology. This explains why the startups are looking for assistance with the product and technological development in a large part. According to our survey, 20% of startups considered Hungary their main market and 70% think that their product/service will be in demand on the global market. Startup founders should make sure to have at least one technical expert who is responsible for the development of the product or service among the founders at the very start of the project.

Job creation

A well-known positive externality of startups is job creation. It is one of the positive externalities that are frequently used to justify government intervention at the startup financing market (Jáki – Molnár, 2017a). Job creation happens not only by hiring new employees at a startup, but the founders of the startup themselves can also be considered as employed. We now investigate the job creation potential of Hungarian startups (RQ4). According to our survey, 35% of startup companies have more than two founders, 38% have two founders, and 27% have only one (*Figure 5*).

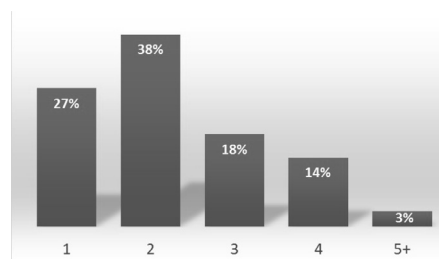


Figure 5 Number of founders
(Source: own database)

Only 21% of the startups did not have any employees. Traditionally, in the earliest stage of development, the founders do all the work, and they hire new employees as the firm grows. Most surveyed startups (43,9%) employ 1 to 3 people. This company size is typical for early-stage startups. Although, 18,2% of the surveyed startups have more than 10 employees, which indicates that there are a fair number of startups in an advanced stage of development at the Hungarian market. Particularly, two startups had a substantial number of employees – 40 and 50 –, this company size can be usually reached only after several rounds of investment (*Figure 6*).

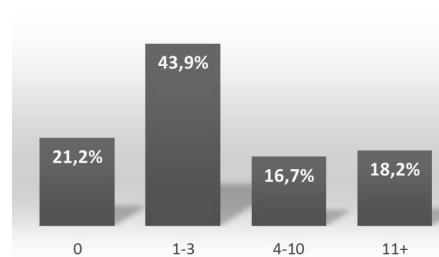


Figure 6 Number of employees
(Source: own database)

Regarding the nationality of the employees, 90% of the startups employ Hungarians only, while 10 % employ foreigners too. This seems to indicate that Hungarian startups want to strengthen their international relations through agents primarily outside their company's employees – such as consultants or mentors.

Now let's look at the future employment plans of the startups. 23% of the surveyed startup companies want to employ new staff right now, 69% of them plan to hire new employees in 6 months or sooner, and 88% of them plan to recruit new employees within a year. These numbers show the job creation potential of the startup sector (*Figure 7*).

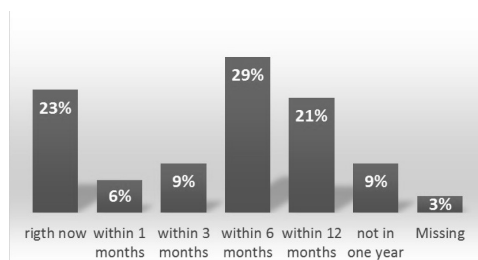


Figure 7 When do startups plan to hire new employees (Source: own database)

Financing

Now we investigate what financing sources do Hungarian startups use (RQ5). In our study, the following development phases of the startups were distinguished:

- 1) Idea/concept phase,
- 2) Beta version/prototype and product validation,
- 3) Early revenue generation,
- 4) Expanding/growing revenue generation,
- 5) Mature company.

Based on our research, incubator houses and accelerators support startup companies from the earliest phase when only a business idea is available and there isn't even a prototype yet. However, VC investors prefer startups in a more mature stage, preferably in the phase of early revenue generation, followed by expanding/growing revenue generation and the phase when the startup possess merely a beta version or a prototype of the product, but the product is validated.

Aman and Lovas (2015) also found that venture capitalists typically finance small and medium-sized enterprises with high growth potential. Venture capital investors prefer companies that already generate revenue and are in their growth phase. Lovas and Riz (2016) found that incubators, accelerators, business angels are willing to support startups in an earlier phase, but they are also looking for companies with high growth potential. They expect merely a developed product/service and support the startup to introduce their product into the market.

In our survey, 52% of the startup participants have already generated revenues, and are potential investment targets for venture capital investors. Furthermore, 35% of startups have a beta version/prototype that can achieve support and funding from accelerators/incubator houses (*Figure 8*).

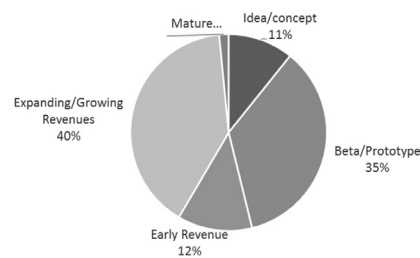


Figure 8 Maturity of Hungarian Startups (Source: own database)

Regarding the size of the requested share for the capital invested, most of the investors indicated the range 0-50%. We can conclude that they typically leave the majority ownership in the hands of the original owners and they acquire only a minority interest in the companies. Accelerators typically require a smaller share in return for their investment than venture capital funds. Only a small fraction of the stakeholders mentioned that they require occasionally majority ownership.

As we have seen, startup entrepreneurs are typically middle-aged, so they may have accumulated savings. 17% of them work full time and 75% are committed to one or more startup businesses simultaneously. Financing is considered as the biggest challenge for implementing the long-term scaling strategy. Connection to the financiers and acquiring the necessary information were mentioned as the biggest difficulties in fundraising. The additional difficulty is the length of execution. We found that 86% of entrepreneurs started their business from their own savings and 27% of founders received capital from their family members or friends. Only 24% of the start-up companies raised their capital from VC investors, 9% mentioned business angels. A bank loan is not a significant source of funding, just a small number (3%) of respondents reported receiving financing from banks. Not surprisingly, as these companies are typically not mature enough for commercial bank loans (*Figure 9*).

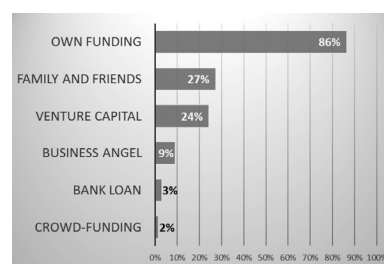


Figure 9 The main initial financing source of startups (Source: own database)

All startups must develop their product and service in their first years which demands new financial resources constantly. The investigated startups are on different levels of maturity; therefore, they can appeal to different financiers. *Figure 10* shows that 30% of the startups try to involve VC investors in their business. 9% appeals to angel investors and only 6% plan to turn to family members or friends for new financing sources.

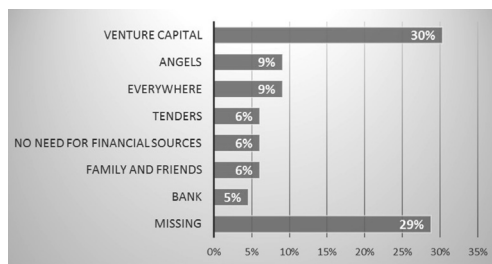


Figure 10 Where do the startups search for new financing sources?

(Source: own database)

Crowdfunding has not played an important role in Hungary so far, only 2% of startups reported to use it. However, Liu and Wang (2018) reflect the advantages of crowd-funding. Their study shows that firms due to the crowdfunding acquire more accurate market feedback regarding their new product than firms which are financed by Venture Capital funds. The result of our investigation corresponds with the findings of Dong and Men (2014), who stated that the availability of external funding sources for young, small and non-manufacturing companies are limited. These characteristics are appropriate to a typical Hungarian start-up as well.

Evaluation of the startup ecosystem

One aim of our study was to uncover what qualities do the members of the Hungarian startup ecosystem deem the most valuable (RQ6) and how strongly do they feel that these qualities are present in Hungary (RQ8). Thus, we asked the respondents to rate the importance of 15 startup ecosystem characteristics on a 1-5 Likert scale, where (1) = not important at all, (2) = of little importance, (3) = of average importance, (4) = very important, and (5) = absolutely essential. We also asked them to rate the characteristics of the Hungarian startup ecosystem on a 1-5 Likert scale, where (1) = very poor, (2) = poor, (3) = acceptable, (4) = good, and (5) = very good.

Likert scales present a set of items that can be used to measure a trait, such as satisfaction, these scales have equally spaced numbers (most typically 1-5) and equally spaced anchors. The Likert scale is also known as an aggregated scale, which means that multiple Likert-type items that measure the same characteristic can be evaluated together in an aggregated form. The consensus among statisticians is that Likert scales can be considered continuous variables for the purposes of analysis, as long as the assumptions of the given analysis method are fulfilled (Harpe, 2015). However, Labovitz (1967) also showed that analyzing Likert-type items that are linear and monotonic can be done with a low associated error. In studies where it is more advantageous to analyze the individual Likert-type items (questions) rather than the combined Likert scale, interval-based statistics are used (Aranyossy et al., 2018).

We will be looking at the sample mean, median, mode

and the frequency of (4) and (5) answers, to assess the responses regarding the importance and evaluation of the startup ecosystem characteristics. Additionally, to be able to determine if the different startup ecosystem subgroups have differing opinions on any of the factors, we employed first a one-way ANOVA test on all the factors to see if there are any significant differences between the sub-groups on a 5% significance level. After this, for the factors that had significant difference among the groups, we employed the Hochberg post-hoc test, which handles samples with different sizes of sub-samples very well, assuming homogeneity of variance between the sub-samples, which we have. This test lets us see exactly which sub-groups have significantly differing opinions regarding the importance and evaluation of the characteristics. The central tendency measures are showing similar results for the factors in *Table 4* and *Table 5* which are consistent with the frequency of the (4) and (5) answers.

Importance of the startup ecosystem characteristics

To answer RQ6, let's look at the importance that ecosystem participants attach to the different factors (as seen in *Table 4*). We can identify 4 groups using the central tendency measures as guidelines:

- 1) Inclination for cooperation among the members of the ecosystem, international relations, advanced entrepreneurial culture, access to funding and access to sufficiently educated workforce dominate the list, with the first item being the highest rated in terms of the mean and the frequency of (4) and (5) answers. In this context, advanced entrepreneurial culture included the opportunity for failed startups to start again. It is surprising to see, how categorically accepted this characteristic is among the ecosystem participants, even considering the relatively high percentage that startups represent in our sample. All the elements of this group have medians and modes of 5, and a mean of equal to or greater than 4.25.
- 2) The second group consists of the presence of successful startups in the community as mentors, or angel investors; the number of high-quality ideas or projects; favorable tax environment for entrepreneurs; and favorable level of required administration for entrepreneurs. This group has median and mode values of 4 and 5 and a mean greater than 4.
- 3) The third group includes access to mentors, advisers, coaches; access to entrepreneurial education; social events (meetups, networking); and technology transfer. The members of this group have mean values between 3 and 4.
- 4) The lowest importance group consists of the presence of co-working spaces and startup competitions. These items have medians and modes of 3 and a mean ~3. It

² <http://www.europarl.europa.eu/factsheets/hu/sheet/88/bankunio>

is interesting to note how high the ecosystem members rated the importance of access to funding compared to how low they rated the importance of startup competitions. This may reflect that the primary channel for startups to meet investors is not considered being exposed to them during a startup competition, but alternative, possibly more pro-active methods.

To answer RQ7, if we look at the tests for significant differences among the startup ecosystem member sub-groups (Table 6), we see that the one-way ANOVA detected significant differences associated with the presence of co-working spaces and the favorable tax environment for entrepreneurs. The importance of the presence of co-working spaces was rated significantly higher by the representatives of co-working spaces than by investors and startups. It is natural that agents overestimate their own importance in any ecosystem, but the below average importance rating by the startups themselves is rather surprising. Regarding the importance of favorable tax environment for entrepreneurs, startups rated this characteristic significantly higher than incubators and accelerators. This can be attributed to the fact that the startups themselves feel the financial burden of managing a startup each and every day, while those members of the ecosystem that are more focused on providing help and coaching for the startups focus more on inner factors that can be improved and less on external factors.

Evaluation of the startup ecosystem characteristics

Now let's continue with our analysis of how the members of the ecosystem rated the characteristics of the Hungarian startup ecosystem (RQ8). Based on Table 5, the following groups of characteristics can be identified using the central tendency measures as guidelines:

- 1) The top characteristic forms a group in itself based on the distance between itself and the second most highly rated factor in terms of the central tendency measures and also the frequency of (4) and (5) answers. This characteristic is the social events (meetups, networking), which has a median and mode of 4 and a mean of 3,71.
- 2) The second group consists of the presence of co-working spaces; startup competitions; the number of high-quality ideas or projects; and the access to mentors, advisers, coaches. Members of this group have median and mode values of 3 and means between 3 and 3,5. It is surprising that the presence of co-working spaces and startup competitions were rated as the least important factors in a startup ecosystem by the respondents, meanwhile, these two are also rated among the most strongly developed characteristics at the Hungarian ecosystem. It should also be noted, that the rating of this group despite almost being on the top of the list is only around average.
- 3) The third group includes the presence of successful startups in the community as mentors, or angel investors; access to funding; and inclination for cooperation among members of the ecosystem. The median

and mode of this group is 3, and the means of factors in this group are between 2,8 and 2,9. Despite the cooperation between ecosystem members being the most important single characteristic, and access to funding being one of the most important characteristics, the rating of these at the Hungarian ecosystem are slightly below average. Building cooperation between the ecosystem members can happen organically throughout the evolution of a startup ecosystem, which can happen in Hungary as the ecosystem matures. Policymakers can also consider how they can help speed up the process, according to our survey, organizing more startup competitions is not the answer. Also, despite the governmental venture capital initiatives in recent years, such as the Jeremie program and the creation of the Hiventures VC fund manager, ecosystem members still feel that the access to funding is slightly below average in Hungary. It is possible that there are other factors prohibiting the startups from taking advantage of the large capital supply accessible at the market, such as a lack of skill in presenting their idea and convincing investors.

- 4) The next group contains technology transfer; access to sufficiently educated workforce and international relations. Members of this group have median and mode values of 2 or 3 and means between 2,6 and 2,7.
- 5) The bottom group contains four factors: access to entrepreneurial education; favorable tax environment for entrepreneurs; advanced entrepreneurial culture (opportunity to start again after failing a startup); and favorable level of required administration for entrepreneurs. Members of this group have medians and modes of 1 and 2 and means below 2,5. In developed startup ecosystems, investors consider having failed startups a sign of entrepreneurial experience on behalf of the startup, and formerly we saw how highly the Hungarian ecosystem members valued the importance of this characteristic. It is disconcerting to see how underdeveloped this entrepreneurial culture is in Hungary, maybe this is something that policymakers should try to strengthen. On the other hand, entrepreneurial education on universities is heavily subsidized by the state, but still ecosystem members feel it to be poorly accessible. This could be attributed to the fact that at universities entrepreneurial education is mostly theoretical, and the practical parts consist mostly of pre-planned exercises and case studies. It is possible, that ecosystem members want an education that is more focused on creating actual new ventures, led by experienced entrepreneurs providing assistance with the process. This could be perceived as a pre-incubation, practice-driven educational process.

When we look at the significant differences between the ecosystem member sub-groups regarding the evaluation of the factors (RQ9) in Table 6, we see that there are two factors where we can find such differences. The first is the evaluation of access to funding at the Hungarian startup ecosystem. Particularly, startups rate

this characteristic significantly lower than incubators and accelerators. This can be explained by the professional experience difference between these groups. Ecosystem members already assisting the development of startups have substantial entrepreneurial experience, and they

possibly undervalue the effort it took them to get their entrepreneurial education. On the other hand, fresh startups might feel this education harder to get due to their proximity in time to attaining it.

Table 4. Importance of the startup ecosystem characteristics

	Mean	Median	Mode	Std. Deviation	95% confidence interval of mean		Very important (4) and absolutely essential (5) frequency
					Lower	Upper	
Inclination for cooperation among members of the ecosystem	4,42	5	5	0,855	4,250	4,590	87
International relations	4,39	5	5	0,852	4,221	4,559	82
Advanced entrepreneurial culture	4,29	5	5	0,957	4,100	4,480	83
Access to funding	4,25	4,5	5	0,892	4,073	4,427	79
Access to sufficiently educated workforce	4,25	4,5	5	0,947	4,062	4,438	83
Presence of successful startups in the community as mentors, or angel investors	4,22	5	5	0,970	4,028	4,412	76
Number of high-quality ideas or projects	4,19	4	5	0,907	4,010	4,370	79
Favorable tax environment for entrepreneurs	4,18	4	5	0,968	3,988	4,372	80
Favorable level of required administration for entrepreneurs	4,14	4	5	0,975	3,947	4,333	74
Access to mentors, advisers, coaches	3,93	4	4	1,066	3,718	4,142	73
Access to entrepreneurial education	3,88	4	5	1,225	3,637	4,123	67
Social events (meetups, networking)	3,72	4	3	0,944	3,533	3,907	56
Technology transfer	3,59	4	4	1,065	3,379	3,801	55
Presence of co-working spaces	2,97	3	3	1,087	2,754	3,186	29
Startup competitions	2,96	3	3	1,205	2,721	3,199	35

Table 5. Evaluation of the startup ecosystem characteristics

	Mean	Median	Mode	Std. Deviation	95% confidence interval of mean		Good (4) and very good (5) frequency
					Lower	Upper	
Social events (meetups, networking)	3,71	4	4	0,820	3,547	3,873	61
Presence of co-working spaces	3,33	3	3	0,995	3,132	3,528	38
Startup competitions	3,24	3	3	0,911	3,059	3,421	40
Number of high-quality ideas or projects	3,08	3	3	1,079	2,866	3,294	32
Access to mentors, advisers, coaches	3,03	3	3	0,893	2,853	3,207	27
Presence of successful startups in the community as mentors, or angel investors	2,88	3	3	0,967	2,688	3,072	29
Access to funding	2,87	3	3	1,116	2,649	3,091	30
Inclination for cooperation among members of the ecosystem	2,81	3	3	0,982	2,615	3,005	22
Technology transfer	2,68	3	3	0,898	2,502	2,858	11
Access to sufficiently educated workforce	2,67	3	3	1,035	2,465	2,875	19
International relations	2,61	2	2	0,973	2,417	2,803	18
Access to entrepreneurial education	2,22	2	2	1,021	2,017	2,423	11
Favorable tax environment for entrepreneurs	2,11	2	1	1,024	1,907	2,313	11
Advanced entrepreneurial culture	2,09	2	1	1,083	1,875	2,305	11
Favorable level of required administration for entrepreneurs	1,96	2	1	0,994	1,763	2,157	8
Evaluate the domestic startup ecosystem	2,91	3	3	0,900	2,731	3,089	22

Table 6. Comparison of sub-sample means (ANOVA and Hochberg at $\alpha < 5\%$)

	One- Way ANOVA Sig	Sub-group	S u b - sample mean	Sub-group	S u b - sample mean	Hochberg Sig
Importance of the presence of co-working spaces	0,018	investors	2,636	co-working space	4,667	,035
		startups	2,828	co-working space		,036
Importance of a favorable tax environment for entrepreneurs	0,005	startups	4,414	incubators, accelerators	3,583	,003
Evaluation of access to funding at the Hungarian startup ecosystem	0,011	startups	2,586	incubators, accelerators	3,333	,046
Evaluation of access to a sufficiently educated workforce at the Hungarian startup ecosystem	0,030	investors	3,273	corporations	1,500	,030

The second characteristic is the evaluation of access to a sufficiently educated workforce at the Hungarian startup ecosystem. Corporations rate this significantly lower than investors. Corporations have an interest in the startup scene in supporting startups to innovate in their industry, in the hopes of acquiring those startups when their development level reaches a sufficient level. It is very likely that corporations base this rating on their own subjective experience when it comes to finding and hiring an educated workforce, and they project this onto startups. Investors, on the other hand, have a closer relationship to startups and possibly see the situation in a more realistic way.

Summary

In conclusion, we can say that the Hungarian startups are generally men in their middle years from Budapest, who have experience at multinational companies or as an entrepreneur. Almost half of them have already taken part in a failed startup. Only a small fraction of our respondents are students at a university. Overall, startups have a qualification in business sciences (marketing, finance or economics) at least as BA students. In the case of the younger generation, the main motivation for launching a startup is to have more freedom and challenge. For older respondents, motivation comes from a kind of burn-out. Many of them are opposed to the culture of multinational companies. In general, the middle-aged groups want to “re-establish” themselves and to realize their innovative idea. Startups need external help the most with entering new markets, product development, and sales activity. Startups have substantial job-creating potential, as almost all of our respondents indicated that they plan to hire new employees within a year.

We also examined how the members of the startup ecosystem – startups, VC investors, incubators and accelerators, corporations, and co-working spaces – think about the importance of the ecosystem’s characteristics and how they evaluated these characteristics in the Hungarian ecosystem. They deemed the cooperation among the ecosystem members, international relations, and the opportunity for startups to start again after a failed startup

the most important characteristics. The presence of co-working spaces and startup competitions were rated as the least important. They also feel that co-working spaces and startup competitions are overrepresented in the Hungarian startup ecosystem compared to their perceived importance. They found social events (such as meetups and networking) to be the strongest characteristic of the Hungarian ecosystem. On the other hand, access to entrepreneurial education; favorable tax environment for entrepreneurs; advanced entrepreneurial culture (opportunity to start again after failing a startup); and favorable level of required administration for entrepreneurs were found to be the weakest characteristics of the Hungarian ecosystem.

In the paper, we presented general findings that help to understand the startups’ behavior and characteristics and collected the key factors of the development of the startup ecosystem. Our research helps startup entrepreneurs, policymakers, and various investors to understand the actual market situation, problems, and challenges that startups currently face.

References

- Aman, S. – Lovas, A. (2015): Overcoming Asymmetric Information in Venture Capital Finance: Theoretical approach and evaluation of Hungarian findings. *Studies in International Economics: Special Issue of Közgazdaság*, 1(2), pp. 3-22.
- Aranyossy, M. – Blaskovics, B. – Horváth, Á. A. (2018): How universal are IT project success and failure factors? Evidence from Hungary. *Information Systems Management*, 35(1), pp. 15-28. doi: 10.1080/10580530.2017.1416943.
- Cabinet Office of the Prime Minister (2016): Digital Startup Strategy of Hungary. Retrieved from: <http://www.kormany.hu/download/2/4b/21000/The%20Digital%20Startup%20Strategy%20of%20Hungary.pdf> (Accessed: 2018.12.01)
- Dong, Y. – Men, C. (2014): SME Financing in Emerging Markets: Firm Characteristics, Banking Structure and Institutions. *Emerging Markets Finance and Trade*, 50(1), pp. 120- 149. doi: 10.2753/REE1540-496X500107
- Dzurovčinová, P. (2016): Slovak Startups Report 2016. Retrieved from: <https://www.slideshare.net/PetraDzurov>

cinova2/slovak-startups-report-2016-part-of-v4-startup-survey-1-71950526 (Accessed: 2018.12.01)

Harpe, S. E. (2015): How to analyze Likert and other rating scale data. *Currents in Pharmacy Teaching and Learning*, 7(6), pp. 836-850. doi: 10.1016/j.cptl.2015.08.001.

Herzberg, F. (2017): *Motivation to work*. Abingdon-on-Thames, UK: Routledge

Jáki, E. – Molnár, E. M. (2017a): Állami és uniós szerepvállalás a magvető életszakaszban lévő vállalkozások kockázati-tőke-finanszírozásában. in: Farkas B. – Pelle A. (eds.): *Várakozások és gazdasági interakciók*. Szeged: JATEPress Kiadó, pp. 97-110. ISBN: 978-963-315-348-2.

Jáki, E. – Molnár, E. M. (2017b): Model of the state and EU involvement in the venture capital market. in: Zoltayné P. Z. – Horák P. – Várad K. – Zwierczyk P. T. – Vidovics Dancs Á. – Rádics P. J. (eds.): *ECMS 2017: 31st European Conference on Modelling and Simulation*, Nottingham: ECMS – European Council for Modelling and Simulation, pp. 120-126. ISBN: 978-0-9932440-4-9.

Jáki, E. – Molnár, E. M. – Walter, Gy. (2017): Government Sponsored Venture Capital: Blessing Or Curse? *Management (SLOVENIA)*, 12(4), pp. 317-331. doi: 10.26493/2F1854-4231.12.317-331.

Kollmann, T. – Stöckmann, C. – Hensellek, S. – Kensbock, J. (2016): *European startup Monitor 2016*, Essen, Germany: German Startups Association. ISBN: 978-3-938338-17-9

Korosteleva, J. – Mickiewicz, T. (2011): Start-up Financing in the Age of Globalization. *Emerging Markets Finance and Trade*, 47(3), pp. 23-49. doi: 10.2307/23047087.

Labovitz, S. (1967): Some observations on measure-

ment and statistics. *Social Forces*, 46(2), pp. 151-160. doi: 10.2307/2574595.

Liu, H. – Wang, Y. (2018): The Value of Crowdfunding: An Explanation Based on Demand Uncertainty and Comparison with Venture Capital. *Emerging Markets Finance and Trade*, 54(4), pp. 783-791. doi: 10.1080/1540496X.2018.1434619.

Lovas, A. – Riz, N. (2016): Accelerator or incubator?: Enterprise support organisations in Hungary in light of international practice. *Economy and Finance*, 3(4), pp. 305-322.

Roman, A. – Bilan, I. – Ciomas, C. (2017): What Drives the Creation of New Businesses? A Panel-Data Analysis for EU Countries. *Emerging Markets Finance and Trade*, 54(3), pp. 508- 536. doi: 10.1080/1540496X.2017.1412304.

Skala, A. – Kruczkowska, E. (2016): Polish Startups Report 2016. Retrieved from: <http://startuppoland.org/wp-content/uploads/2016/09/Startup-Poland-Raport-2016-03-ENG.pdf> (Accessed: 2018.12.01)

Stadnicka, D. – Sakano, K. (2017): Employees Motivation and Openness for Continuous Improvement: Comparative Study in Polish and Japanese Companies. *Management and Production Engineering Review*, 8(3), pp. 70-86. doi: 10.1515/mper-2017-0030.

Staszkiwicz, M. – Havliková, D. (2016): *Czech Startups Report 2016*. Retrieved from: <https://www.aspeninstitute-ce.org/project/czech-startup-report/> (Accessed: 2018.12.01)

Timilsina, B. – Forsén, N. – Takala, J. – Malek, N. A. (2016): Which one to choose multi focus or trade-off among competitive priorities? Evidence from Finnish SMEs. *Management and Production Engineering Review*, 7(1), pp. 77-88. doi: 10.1515/mper-2016-0009.

KATONA, VIKTÓRIA NÓRA

ROLE AND POSITIONING OF REWARD BASED CROWDFUNDING IN THE FUNDING OF TECHNOLOGICAL INNOVATION PROJECTS

VIEWPOINT OF ENTREPRENEURIAL FINANCING EXPERTS

The research summarizes interim results of a doctoral study examining the role and positioning of reward based crowdfunding in the case of start-ups launching technological innovation projects. The article provides a brief introduction to the reward-based model of crowdfunding, highlighting aspects of its positioning compared to traditionally known entrepreneurial funding opportunities. Analyzed data of 17 interviews conducted with senior experts from the startup funding ecosystems (VCs, Business Angels, leaders of incubator houses and accelerators leaders) is shared. Recommendations and risks of application of reward-based crowdfunding, depending on the different phase of product readiness and financial status of the company, is shared.

Keywords: reward-based crowdfunding, technology innovation, crowdfunding, entrepreneurial financing

Special credit goes to those experienced professionals of the Hungarian, Portuguese, French and Polish start-up ecosystems who supported the scientific work by contributing with their time and by sharing their experiences, in a truly supportive and open manner that is the very own of the world of Entrepreneurs.

Background

Within the framework of a doctoral research, between 2016 to 2018 a scientific study was conducted with the goal to expand the knowledge base and formulate recommendations for SMEs on the application of crowdfunding.

The scientific work focused on the reward-based crowdfunding of technological innovation projects. The research explored the phenomenon from the perspectives of entrepreneurial finance and innovation management dimensions, with the aim of clarifying the role, benefits and disadvantages of this financing option for the businesses concerned. Applied research methods included conduction of secondary and primer research. Secondary research was set up on the basis of more than 200 bibliographical sources, exploring the commonalities and white zones of application of crowdfunding in relation of technological innovation projects¹. This was followed by processing a database curated by the Berkeley University, that contained detailed project information of the campaigns launched and closed on Kickstarter - the largest reward-based, and most innovative platform - based in 2016, including 4700 technology projects. Of this population, a sample of 200 projects was sorted out and evaluated by at least two independent experts per campaign along different dimensions of innovation content.

Based on the results of the literature review, the hypotheses - and adaptability of their interpretation to the local characteristics of the region - were substantiated by primary research results among key stakeholders of the start-up ecosystems.

In order to ensure that the relevant aspects and experiences of stakeholders will be taken into account, a small but detailed questionnaire survey among the entrepreneurs (25 interviews) and 15 deep interviews with senior experts involved in the financing of the enterprises was conducted.

One of the research goals was to provide more precise recommendations, regarding which are those phases of the enterprises lifecycle where the importance of using crowdfunding can be paramount. This article summarizes the results of the research that outlines the role and potential benefits of crowdfunding amongst the traditionally known sources of entrepreneurial financing, integrating related findings of the primary research.

Though low sample size does not allow to consider the results representative, a significant part of the key players of the Hungarian start-up ecosystem contributed with their insights and experiences, and international mentor and accelerator house experts helped to draw conclusions, resulting a new, and more accurate outlook on the topic.

About crowdfunding

Understanding crowdfunding and refining its system of recommendations receives more and more attention, as this alternative form of financing can fill the gap that exists today in the financing of small enterprises with little developmental experience and insufficiently strong background, or engaged in shifting of their developmental profile (Valanciene – Jegeleviciute, 2014). This alternative financing scheme offers an opportunity to improve enterprises and finance new jobs without involving the traditional state or financial sectors (Crowdfund Capital Advisors, 2014);

Crowdfunding research fundamentally served the exploration and drivers of crowdfunding opportunities (De Buysere et al., 2005; Freund, 2010; Cumming et al., 2014) (Agrawal et al., 2014). Studies where guidance is offered on opportunities of utilizing crowdfunding platforms for

¹ By the term innovation project, we imply those projects and organized efforts whose goal is the achievement of a result that complies with the criteria of innovation – expressed in the creation of a new or further developed product, technology, service, organizational method (OECD, 2005). Technology type” – as defined by the OECD (2005) – process/technology or technological product, or developmental initiatives or projects in the „other creative product development” category.

a special segment have only appeared in recent years (Cordova et al., 2015; Gleasure, 2015; Joenssen et al., 2014).

Research results in recent years have greatly contributed to an understanding of the phenomenon, including the motivational drivers of the actors (Agrawal et al., 2014; Mollick 2014), and the social and product development aspects, but *knowledge continues to lack insofar as how it might be worthwhile fit it onto the lifecycle of a startup or growing enterprise (Cordova et al., 2015) and what combination of factors might allow an enterprise to anticipate a suitable outcome.*

Relevant definitions

Depending on the perspective structure in which the phenomenon is studied, definitions of the operations and objectives of the process, as well as definitions that separate crowdfunding from other financing mechanisms are delineated.

Schwiebacher and Larralde (2010) defined crowdfunding as „an open call, essentially through the Internet, for the provision of financial resources either in form of donation or in exchange for some form of reward and/or voting rights in order to support initiatives for specific purposes.”

According to financial definitions, crowdfunding is „internet based interpersonal loan or credit” (Lin –Viswanathan, 2013), *from a broad circle of small sum contributors instead of a select, sophisticated financier group* (Belleflamme et al., 2012; Riedl, 2013) (Cordova et al., 2015), „...for the purpose of financing, evaluation by the market, and communications (Joenssen et al., 2014, p. 6.).

According to Mollick’s 2014 definition with entrepreneurial angle „Crowdfunding refers to the efforts by entrepreneurial individuals and groups – cultural, social, and for-profit – to fund their ventures by drawing on relatively small contributions from a relatively large number of individuals using the internet, without standard financial intermediaries” (Mollick, 2014, p. 2.).

Operation, major types and models

Crowdfunding is tied to the activities of three types of stakeholders. The project initiator – the initiator and originator of the project or idea awaiting funding, the supporting and financing private individuals and groups (so called backers), as well as the organization (platform), which enables the implementation of crowdfunding. (Ordanini et al., 2011)

Types and models

A significant deviation can be observed between the types and categories of „crowdfunding” as far as the nature of the support form and the services offered are concerned. Not counting the characteristic inclusion of the broad scope of financiers and the intermediary organization, the most commonly known major categories are the following:

1. Equity-based,
2. Peer-to-peer 'P2P' lending,
3. Donation based, and
4. Reward based crowdfunding.

With the first two types, a business – investor aspect dominates, while with the latter two, it is patronage and support.

Compared to donation based, reward based, and lending based models, according to the academic literature, the level of investor rationality is the highest with equity based crowdfunding, with external financial motivations expressed at the time when the investment decision is made; it is within this financing type that the proportion of technological projects is the highest, while reward based funding appears to be popular over the course of developing specific products (Kuppuswamy – Bayus, 2015) (Table 1).

Table 1 An Overview of the Main Types of Crowdfunding

Characteristic	Donation-based	Reward-based	Lending-based	Equity-based
Consideration	None	Product, Gift	Interest	Equity stake, dividend
Size	\$18.5 billion	\$3 billion	\$16.3 billion	\$4.73 billion
Platforms	Crowdrise, GlobalGiving	Kickstarter, Indiegogo	Lending Club, Funding Circle, KIVA	CrowdCube, Seedrs
Motivations	Internal, non-financial motivations (assistance)	External financial motivations (reward)	External financial motivations (earning profit/charity)	External financial motivations
Level of rationality	Low	Medium low	High	High
Legal regulation	Permitted	Permitted	Permitted with limitations	Strictly regulated
Impact	Handling global problems	Launch of enterprises, expansion of scope of activities	Transformation of P2P lending	Launch of multiple funding start-ups

Source: Edited by the author on the basis of Kuppuswamy – Bayus (2015), Geiszl (2017), Mollick (2014)

The domestic overview of crowdfunding with scientific thoroughness was first performed by Kuti and Madarász in 2014. According to their summary, reward based crowdfunding can be used to obtain funding for startups, for the expansion of existing companies, or for personal creative projects as well. Here, supporters generally receive real products or services for the support. When it comes to the financing advantages, from a certain perspective it can be considered a pre-

purchase, a customer loan, in which shipping and communication toward the customer is of particular importance. Today we can talk about serial crowdfunding, and suppliers who do a good job can repeatedly expect the support of future customers (Mollick – Kuppaswamy, 2014; Mollick, 2013, 2014).

For entrepreneurs, the most important issue is the payment or funding drawdown model, this can be the „all-or-nothing” – in the event of an unsuccessful campaign, the collected money is reimbursed to the supporters, while in the „keep-it-all” model the platform transfers the money even in those cases where the set amount had not been collected.

Role and positioning of reward based crowdfunding compared to traditional forms of entrepreneurial financing

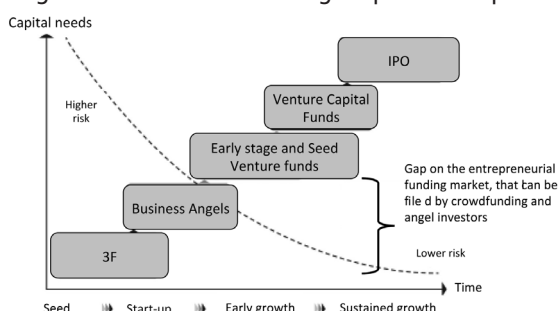
When we examine the relationship between innovation and crowdfunding, the question that arises is how it relates to traditional sources of financing; whether a period or life-cycle stage can be defined where it has exceptional importance.

In the interest of assisting innovation activity, Deffains-Crapsky and Sudolska (2014) studied capital financing opportunities for enterprises implementing radical innovation during the early stages of their life cycles, including the advantages and opportunities inherent in equity based crowdfunding.

Among equity financing opportunities that are available to enterprises, crowdfunding might be a good one for a number of reasons: on the one hand, as it is a quasi-form – informal – it is not subject to strict institutional regulations, and on the other hand, the investors can be more open towards revolutionary ideas.

The authors have examined the question of radical innovation funding from the perspective of positive management, assuming that when comparing crowdfunding with external capital financing opportunities that are available to enterprises today, crowdfunding offers a more favourable alternative for new startups in certain cases (Figure 1).

Figure 1 Innovation Funding Steps of Enterprises



Source: modified version as edited by the author of the figure by Klein (2013) and Deffains-Crapsky – Sudolska (2014, p. 11.)

Based on Shirky's finding in 2012 – according to which the group of enterprises that utilizes crowdfunding does not overlap those that select from traditional sources, like

venture capital or angel investors. The analysis of Crowdfund Capital Advisors (2014) also references this finding, stating that enterprises that eventually decide on crowdfunding could only utilize personal loans or credit from among traditional sources.

As studied by Valanciene and Gimszauskiene (2012), for more than half of the enterprises that utilize crowdfunding, this was the first opportunity to acquire funding, while in a similar situation only personal loans or credit was available for enterprises that were thinking of traditional financing formats. Angel investors and venture capital investors might also conceivably wait for enterprises to prove their growth potential, thus crowdfunding provides an indirect opportunity to provide pre-financing of riskier or more uncertain technological developments through the platforms, thereby reducing the risk for more profit oriented capital investors.

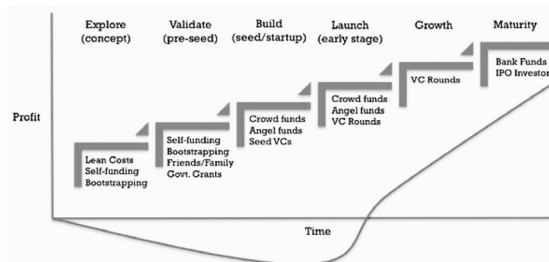
Prior to 2010, crowdfunding was not taken into account in Hungarian sources on entrepreneurial financing. This shortcoming has already been overcome by the case study volume of Csubák and Szerb in 2013 (Béza et al., 2013) – in their pathfinder work they had presented the applicability of various equity type funding forms. Additionally, the authors also positioned crowdfunding in relation to other sources of funding in case of enterprises possessing varied levels of activity and growth potential.

Building on the comprehensive body of work of Szerb (2013), in her recent study on the financing opportunities of enterprises, Geiszl (2017) made a recommendation on how to define the category of companies that build exclusively upon (equity based) crowdfunding opportunities. According to the employed terminology and results, *crowdfunding is the jumping off point for ambitious enterprises with limited growth*. These enterprises due to their favourable parameters and low risk – can take part to a sufficient degree from angel investor and venture capital funding sources as well.

Complementarity to other financing sources

An overview of the funding sources in various life-cycle stages of the start-ups (Leba et al., 2015) clearly shows that crowdfunding are highlighted during the seeder and early growth stages, where it appears as the capital alternative/supplemental funding of angel investment or venture capital. (Figure 2)

Figure 2. The Start-up Funding Lifecycle



Source: Balatti, 2014².

² https://albertobalatti.files.wordpress.com/2014/08/maltaway_balattiboardmember_startup-funding-lifecycle-venture-capital.png

Based on the exponential growth of the amount of the outsourced funding, we can assume that compared to traditional funding sources, crowdfunding possesses characteristics that make it appealing to enterprises.

In 2015, a third of enterprises had indicated that they had tried to utilize funding from a crowdfunding source (Statista, 2015).

According to the statistics, in 2017 the entire global volume of crowdfunding – including interpersonal loans – was USD 34 million in 2017 (Fundly, 2018), comprising one quarter of the volume of global venture capital investments (KPMG, 2017).

In connection with crowdfunding, it is exceptional that this form of financing might not just be suited to the mitigation of risks that naturally arise with innovation, but can also be utilized alongside the characteristics that derive from the extreme youth of the enterprise (or due to potential shortcomings).

This means that alongside state subsidy structures (OECD, 2002) such financing opportunity has become available that was only partially covered previously by a few special investors during the most vulnerable stage of the enterprises, so it harbours significant economic potential.

Eligibility in technological innovations

Over the course of studying the financing opportunities of radical innovation implementing enterprises, in addition to affixing them to company life cycle stages, also examined whether there are special characteristics arising from the nature of innovation, characteristics to which crowdfunding can offer a solution. The radical nature of innovation was defined as „abandoning tradition in the industry and changing consumer expectations.“ Based on Rosenberg’s 2004 work, they summarized the risk factors of radical innovation – which influence the financing opportunities of the enterprise – in the following points:

1. The results of the innovation activity/project is unpredictable.
2. Significant R+D costs may arise – resulting in substantial financial risk, as the efficiency of the research and development activities and their industrial-market potential are equally uncertain.
3. The product-level economical aspect of the product or service is questionable.
4. The ability of the enterprise to „appropriate“ the market utilization of the innovation.
5. In technology intensive, high-tech sectors, the risk that results from the short product and technology life cycle graphs.

In summary, they find that the inclusion of crowdfunding and platforms assists in the reduction of uncertainty factors that go fundamentally together with innovation – *practically every above question can be answered by a successful crowdfunding project.*

Examining the innovativeness of the product or solution, according to Lukrainnen et al. (2016), comprehensibility of the product (being a B2C solution on its own) shows a positive correlation with campaign success, and even

among B2C projects, the probability for of a project’s success rises along with comprehensibility. The easier to understand the more odds for success a campaign may have.

The Venture Bonsai equity crowdfunding portal performed a survey among investors, where 61% of the responders replied that they had been motivated to make the investment by “an interesting product or service”, referring to novel ways of application, or new services.

Mukherjee et al. (2017) examined the correlation between the innovativeness of the project (novelty, utility) and success. The innovation content of the project was measured by whether the description or the text of the video contains at least one expression regarding novelty or usefulness, that relates to innovation or improved utility. Results showed that the funding level of the project increases with the frequency of statements regarding utility or regarding novel content. In the event that both were present together in the campaign, however, the combination has had a negative effect on project funding (Mukherjee et al., 2017).

Authors expressed the assumption that the exaggerated degree of innovation decreases the supporter’s sense of security, as they might deem the delivery of the product too uncertain.

In Chan and Parhankangas’s 2017 study, impact of incremental and radical innovation on the outcome of the campaign was examined. Analyzing 334 technological projects by private individuals evaluating the campaign videos according to a given set of criteria, their findings showed that consumer utility and implementability are important considerations for supporters, with innovation having a positive impact on the amount of the sum that is collected through crowdfunding.

It was unequivocal, however, that on the Kickstarter platform, supporters preferred incremental innovation, as they had found it to be viable, and would rather obtain radically innovative products through channels that provide more consumer protection guarantees (Chan – Parhankangas, 2017). Overall, studies confirmed that reward based funding can be applied with success – that may have a positive correlation with the innovativeness - in case of technological projects.

Recommendations of use and limitations

Literature already provides an established basis regarding potential benefits and drawbacks. Specially in the case of technological innovation projects, important aspects are, that *the expected market success of the product/innovation can be improved by early market feedback prior to the actual development.* Joenssen et al. (2014) studied the potentially common aspects of crowdfunding and new product announcements with product development marketing and market analysis methodology, and concluded that it was advantageous for enterprises when an opportunity could conceivably arise on the basis of the desire to support or advance purchase for the purpose of validating the estimated market potential (assuming this had not yet taken place).

A successful – potentially many previously successful – crowdfunding campaign can play a value-creating, promotional role. In case of successful implementation, it can improve the chances of the enterprise for the inclusion of other

funding sources, as well as for the generation of additional sales. (Henderson, 2013).

Studies have been undertaken with regard to the success of crowdfunding technological projects; the correlation between the measurable indicators of given projects – such as the number of communications with financiers, the existence of the web site, communications activities, and timely performance, (Cordova et al., 2015), also an estimated imminent implementation period (Joenssen et al., 2014) was found to be in correlation with successful financing. *Their work suggests that when crowdfunding technological projects, it is worth defining a project that has tangible results for customers within a reasonable time.*

The compendium of the works of outstanding Hungarian academic authors Kuti and Madarász (2014) on crowdfunding, Pursuant to the work of Agrawal et al. (2013), the authors have summarized the drivers and inhibiting characteristics of crowdfunding, grouped by those who are directly effected by the process (Table 2).

Table 2 Advantages and Limitations of Crowdfunding

Advantages	Limitations, risks
• Necessary steps for financing are taken through a single channel, in a short period of time (Ahlers et al., 2012) • Product testing (the market validation of the product concept) (Schwienbacher – Lambert, 2010; Mollick, 2013) • Can offer inspiration for the continued development of the project (Ordanini et al., 2011) • Can simplify the inclusion of additional funding for the enterprise – an indicator of positive market reception (Mollick, 2013) • Over the course of involving financing, all control remains with the enterprise (Gerber et al., 2011)	• Carries patent risks (Riedl, 2013) • Financial-accounting regulations are lacking (Jegelvičiute et al. 2013) • A reward based model can cause logistical problems (Sigar, 2012)

Source: edited by the author

Relation to product development and company maturity phases

During the interview process experts were asked to identify the optimal product development phase, as well as the ideal phase within the corporate life-cycle, at which they would recommend the application of reward-based crowdfunding.

Analyzed papers of relevant literature (Schwienbacher – Lambert, 2010; Mollick, 2013; Ordanini et al., 2011; Sigar, 2012; Belleflame et al. 2014) have not provided detailed recommendations on prospective alignment of crowdfunding to given levels of product maturity or a point

in the companies' life cycle, although they had defined some benefits of the application for the product and market development process (Mollick, 2016; Ordanini et al., 2011). Their results pinpoint the importance and benefits of crowdfunding, in collecting feedback from the market in the product development phase, for the validation and refining of the product concept and in building a direct communication channel with potential customers. It suggests that the primary area and purpose of the application is the support of development of the prototype phase; this was confirmed by the primary results of the research.

Regarding corporate maturity, Figure 2 showed that in general, crowdfunding is positioned for the Seed (start-up) and the Early stages of companies' lifecycles. Klein (2013) and Deffains-Crapsky – Sudolska (2014) as seen on Figure 2, have set a range from very early pre-seed up to the later phases of venture capital funding. During this period, different types of crowdfunding can be applied. Authors have not, however, specified the cases or the respective frequencies of their application. Geiszl (2017) found that an equity based alternative may serve companies the best in the late start-up phase. Mollick (2014) also considered it as a tool for the late start-up phase. Paschel (2016) presented the first structured set of recommendations regarding the suggested purpose of crowdfunding in different start-up development phases. Her work focused exclusively on the start-up phases, and used a slightly different grouping for the periods and the types of crowdfunding – reward based crowdfunding is in the „lending“ group.

Figure 3 Framework for startup crowdfunding (section)

Startup Stage	Pre-startup		Startup		Growth	
Resources needed to achieve...	Problem/Solution Fit	Product Validation	Market Validation	Market Penetration	Market Expansion	
Verifiability of Information	Yes No	Yes No	Yes No	Yes No	Yes No	
Optimal Type of Crowdfunding	Donation		Lending		Equity	
Reward Offered	No (tangible) return		Interest (\$), Product		Securities, Profit Sharing	

Source: Paschel (2016, pp 186.)

To date, this framework was the most structured approach, filling a gap in the body of entrepreneurial management knowledge. Empirical results confirmed the high level applicability of Paschel's framework, and also allowed to differentiate between the methods and objectives of successful application in cases that have not been presented (e.g. using lending based crowdfunding methods in the pre-start-up phase, or in the growth period), that are presented in the conclusions (Figure 3).

Results of primary research

Data collection and sample

Methodology and questions

Expert interviews were designed based on the results of literature review. Candidates were selected with application of snowball sampling (linear and non linear, non-discriminative), due to the characteristics of the

domain. Since in this domain personal recommendations and insights on the expertise of others play a significant role, snowball sampling ensured that candidates were highly experienced and recognized in their domain, adding a proof of professional expertise and seniority. 30 candidates were contacted – some of them directly, via their social media profile, some by another professional. 19 interviews were conducted, and 17 were processed in this study. Questions explored the role, positioning, risks, benefits, optimal use cases of reward-based crowdfunding in the financing of technological innovation projects. Data was collected in interview templates, each containing 50 questions. Content was analyzed and data was restructured to database. Answers to questions with greater importance were summarized to short responses, allowing better visual interpretation. This study contains results from the descriptive analysis of the responses, sharing the answers in a structured form. Deeper statistical analysis is ongoing and will be published describing the broader context of the phenomenon, comparing the insights of the different stakeholders - those here referred as Senior Professionals – and the Entrepreneurs themselves, who are involved in the funding process.

Sample characteristics - Institutions

Geographical distribution:

Of the 17 Senior Professionals, 13 (76%) were active in Hungary, 4 (24%) in other European countries, namely France, Poland and Portugal.

5 of the represented institutions were located in the capitals of the country (30%), 12 in regional centres (70%).

Aligned with the research focus on financing technological innovation projects, 65% of the Institutions (11) were specialized in a technology intensive domain, 5 (30%) had a mixed portfolio of innovative start-ups, and only 1 had a portfolio of low risk, traditional companies (*Table 3 and 4*).

Table 3 Distribution of Respondents by Institution Type

Type of Institution	Count	Percentage
Academy Incubator	5	29,4%
Accelerator	3	17,7%
Business angel	2	11,8%
Incubator	2	11,8%
VC	5	29,4%
		100,0%

Table 4 Specialization of the represented Institutions

Profile of the Institution	Count
Biotech, Medtech	1
Deep tech, Fintech	1
Fintech	1
Hardware	1
Healthcare	2
IT, Green Energy	1

Medtech	1
Technology	1
Technology (HR, education)	1
Traditional, low risk	1
Wearables, Smart Hardware	1
General	5

Source: Edited by the author.

Sample characteristics – Expertise

Experts of different backgrounds, 6 had a specialized educational background in finance (35%), 6 in economics (35%) – with two of those 6 possessing other degrees in STEM fields – and 5 experts (30%) had educational backgrounds in STEM (biochemistry, engineering, and IT).

Regarding the roles of the 9 of the 17 Experts were managing directors or equivalent of the represented institutions, and one fourth (24%) of the Interviewees had mentoring type tasks in the ecosystem.

The 17 Expert brought close to 200 years (190) of experience in dealing with start-ups, with an average of 11, 2 years experience having each. Minimum value was 2 years of experience, the maximum 40, both from the academy related start-up institutions.

14 of the Interviewees had established altogether 61 firms (including subsidiaries), with an average of 3.8 each, with 3 lacking a business entity entirely, and one of the business angels founding 25 of them (*Table 5 and 6*).

Table 5 Roles of Respondents

Role	Nr.	%
Founder/Leader/ Director	9	53%
Innovation Director	1	6%
Mentor	4	24%
Senior Investment Analyst	3	18%
	17	100%

Table 6 Experience of the Respondents and the number of firms they established

Type of Institution	Average of experience in years	Average Number of Firms Established by the Respondents
Academy Incubator	14,4	2
Accelerator	14	4,5
Business angel	15	16
Incubator	3,5	2,5
VC	7,8	1
	11,2	3,8

Source: edited by the author

Sample characteristics – Awareness of crowdfunding

Regarding their knowledge of crowdfunding (especially, reward based crowdfunding), 14 of the interviewees knew the model pretty well, 3 at a high level (all of them

were active in the academic sector). On average, they have been aware of the model for 5.5 years, a figure that aligns with the first wave of significant media attention the major platforms were beginning to garner.

Respondents from VCs had an average 4 years and accelerators an average 7.3 years of high level awareness of this funding opportunity. 4 experts - 23.5% - had personal experiences launching crowdfunding campaigns, with 1 having their own successful campaign in 2012, with 2 others taking part in recent launches, while the 4th case has not been specified.

The listed characteristics leave no doubt that the experts have a deep understanding of entrepreneurial financing, mentoring, and a strong understanding of the needs and characteristics of start-ups dealing with technological innovation projects.

Role and positioning of reward based crowdfunding amongst traditional entrepreneurial financing tools - findings

Complementary with traditional funding tools

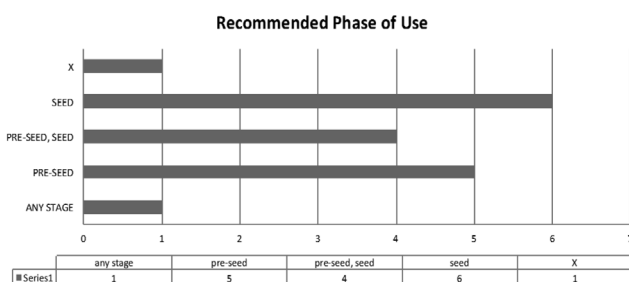
100% of responders labeled crowdfunding as a rather supplemental source of funding. Typically, it was positioned within the seed – pre-seed period, mainly over the course of the development of tangible B2C products. The responders of academic accelerators and business incubators have typically considered the inclusion of smart-money as compared to crowdfunding, citing that in the early stages the capital investor network of contacts and know-how can significantly aid the successful growth of enterprises.

The optimal phase of application in the start-up lifecycle

With one exception, all Experts have named one or more phase of the start-up financing lifecycle where they see benefits of application. Upon a direct request to pick the phase where they see highest potential in the application of reward based crowdfunding for technological innovation projects, slightly more, 35% (6) of the Experts have chosen the pre-seed phase, 30% (5), while 24% (4) thought it can equivalently be used in either phase.

One respondent said that crowdfunding can be used at each phase of an Enterprise's lifecycle with success (Figure 4).

Figure 4 Recommended use phase of reward-based crowdfunding in the start-up lifecycle



Source: edited by the author

The delineation of seed and pre-seed varied to some extent, depending on which stage the responding expert was specialized in. Thus, the venture capital investors who were active in latter periods of the seed stage considered the manufacture of the prototype a task to be performed during the pre-seed period (including the establishment of the circumstances of manufacturing), while the business incubators dated this at a somewhat later date, at the beginning of the seed stage.

Table 8.: Phase of start-up lifecycle where reward-based crowdfunding can be best applied

Type Of Institution	All Stages	Pre-Seed	Pre-Seed, Seed	Seed	N.A.	Total
Academy Incubator	20%	20%	0%	40%	20%	100%
Accelerator	0%	67%	0%	33%	0%	100%
Business Angel	0%	50%	0%	50%	0%	100%
Incubator	0%	50%	50%	0%	0%	100%
VC	0%	0%	60%	40%	0%	100%
Total	6%	29%	24%	35%	6%	100%

Source: Edited by the author.

Moving in the direction of the latter stages of the seed period, responders reported that enterprises are getting progressively better at evaluating their funding needs, as by the end of the seed period, by the time of preparation for mass manufacturing and sales, their cost structure becomes more predictable. It is noteworthy that the more they can profit by avoiding a dilution of their stake and achieving a good bargaining position through the launch of a campaign at an early stage, the best outcome with the lowest risk can be achieved later, during the seed stage (Table 8).

Recommended alignment along Product Readiness and Pricing

Expert opinions agree that without exception the B2C products were designated as optimal or recommended areas of application. Over the course of the content analysis of 200 technology project database, it was indeed the B2C products that were typical, but at least 10% of the sample included solutions that targeted small or family enterprises, or explicitly addressed business customers as well within the framework of a B2C campaign – for example by case of a child development toy, issuing a separate offer for schools, but there was also an operating system developed to meet the needs of SMEs and a platform enabling client data management as well.

All in all, it is truly the B2C aspect and comprehensibility that is the defining characteristic, while at the same time campaign experience shows that certain B2B (typically small enterprises) can also be successfully expressed through the platforms. Alongside the pre-seed stage,

24% of responders recommended crowdfunding for the financing of the latter product line launch at the beginning of the seed or growth stage – as the enterprise is better capitalized, it can easily satisfy existing demand, risk accepted over the course of the process is reduced, but the enterprise acquires a marketing advantage that can be realized through crowdfunding (Table 9).

Table 9 Application of reward based crowdfunding – required product readiness

Product concept ready		Product ready for production	Prototype ready	N.a.	Total
Academy Incubator	20%	0%	40%	40%	100%
Accelerator	33%	67%	0%	0%	100%
Business Angel	0%	0%	100%	0%	100%
Incubator	0%	0%	100%	0%	100%
VC	0%	40%	40%	20%	100%
Total	12%	24%	47%	18%	100%

Source: Edited by the author.

What sum is it worthwhile to ask for? Responses collected over the course of the interviews reveal that the optimal price that can be requested for a product on the platform is a comfortably affordable B2C product between 30 and at most 300 USD, at such unit quantity which in the given period the enterprise can actually deliver without undue risk.

If the enterprise sets as its objective a lower target amount, they can still capture marketing and media attention (particularly if they launch their campaign from a country where this is unusual); additionally, there is a better chance of collecting the set goal and the enterprise can make the claim of having conducted a successful campaign, but due to the high campaign costs, it can only obtain limited net funding.

If a more serious amount is targeted, it is rational to involve a high-priced communications company, operating with a 10-30% success fee; it is not unheard of to encounter over-financing of 1,000-10,000%, it may worth the higher campaign cost, but this case there is a serious risk in the manufacture and delivery of the products (there have been multiple examples of this error occurring, resulting a decline in the reputation of reward-based crowdfunding).

All three of the information sources applied in the research - the senior experts, the entrepreneur interviews, and the analysis of 200 projects - *underlined, that no way should one be overly optimistic with regard to the difficulties of manufacturing and shipping when planing a reward-based crowdfunding campaign.*

Can crowdfunding outrule any of the traditional entrepreneurial funding sources?

With regard to the replacement nature of crowdfunding, typically negative responses have been received.

For the question if crowdfunding can overrule the market, 60% answered „no“, 30% replied „rather not“ or „not entirely“, and only 12% (2 responder) held the opportunity probable in a 5-10 years timeframe. Experts from the academic ecosystems and VCs were more opened to identify crowdfunding as a long term substitute of traditional tools of entrepreneurial financing (Table 10).

Table 10 Application of reward based crowdfunding – required product readiness

	Academy Incubator	Accelerator	Business angel	Incubator	VC	Grand Total
Maybe	60%	0%	0%	0%	20%	24%
Rather yes	20%	0%	0%	0%	20%	12%
No	20%	100%	50%	100%	60%	59%
Not entirely	0%	0%	50%	0%	0%	6%
Total	100%	100%	100%	100%	100%	100%

Source: edited by the author

Although 100% of responders selected the answer „supplemental“ in the question of whether crowdfunding was supplemental to or a replacement of traditional funding. Later on, however, 15 of 17 responders named a traditional source of funding when asked which traditional funding source could be replaced by a crowdfunding campaign.

Venture capital, business angel and bank financing were the three most often mentioned opportunities the respondents thought reward based crowdfunding campaign might substitute in the case of technological innovation projects. Employees and leaders of academy incubator houses voted the most for crowdfunding being a substitute of bank financing, VCs for a potential substitute of business angel funding. The 2 business angels argued that crowdfunding may not function as smart money on a way they and the VCs can support businesses, and crowdfunding can be substitute of other financing rather until the end of pre-seed phase.

CONCLUSIONS

Overview of application alternatives

We can summarize the status of enterprises that are about to launch a reward-based

campaign in accordance with the financial status of the enterprise - the availability of the funding necessa-

ry to launch the campaign - and the availability of the product, incorporating the previously introduced recom-

mendations and findings of the analysis of the interviews (Table 11):

Table 11 Recommended use cases of reward based crowdfunding during the development of technological innovation projects

	Budget for the campaign available	No or limited budget for the campaign
Product is available³	Campaign: - Large budget marketing campaign - Can handle a larger supporter (sales) volume Goal: - Product validation tool prior to the launch of new product line; - More expensive products, larger requested sum (may increase risk); - High price, niche B2C product. Phase: Any phase – seed, or even growth - Can be a regular fundraising effort, a regular sales and communications channel - For operational small and medium enterprises, instead of any other funding source.	Campaign: - Low budget campaign - Lower price, lower volume of orders – otherwise very high risk - Smaller campaign budget - It can manage only a smaller order volume without risk (or in case of extremely simple product) Goal: - To acquire initial customers; - For the purpose of creating media buzz; - To estimate potential of the product and assess market value. Phase: Early (pre-seed, start-up stage) - In case of easy-to-understand, innovative, easily manufactured ideas; - In place of VC, or as a preemptive step (but it cannot substitute for smart money)
Product is not available⁴	Campaign: - High quality, more expensive campaign - High or moderate amount of orders (depending from the investment need of production) Goal: - Validation of product concept - Prior to the diversification of the product portfolio - Global reach, gaining media attention - Marketing tool to boost up initial sales Phase: Seed (later seed), substitutor of VC in case of moderate growth plans, complementer if high budget is necessary In the case of quickly manufacturable products, a larger campaign amount and number of orders can be managed timely, with existing abilities and capacities and company can handle delivery	Campaign: - DIY campaign, - Low campaign budget, - Low, manageable quantities - Rather low order volume (depending from the type of product) Goal: Validation of idea, improvement of entrepreneurial spirit Phase: Concept and pre-seed phase, as complementer or instead of 3F and bootstrapping In case of clearly understandable niche project with moderate manufacturing cost, potentially with strong fun or factor (hobbies where customers are extremely emotion driven) or non-profit characteristics (children education or medicine), and a personal anecdote attracting sympathy.

Source: edited by the author

³ https://www.ecb.europa.eu/stats/policy_and_exchange_rates/euro_reference_exchange_rates

⁴ Conceptual design exists, a few working prototype and visual materials.

Risks of crowdfunding campaigns entrepreneurs shall be prepared to manage

Hortoványi studied the motivations and risk-taking attitude of the innovative entrepreneur (2012), highlighting that the drivers of innovations are those leaders who are willing to accept risks, while at the same time endeavouring to treat them reasonably (Hortoványi, 2012). Due to its low risk, crowdfunding might be an optimal choice for medium-risk averse, yet still innovative entrepreneurs.

Among the risks and disadvantages of utilization, it was mentioned that over the course of the 5 years since their launch, the defining platforms (Kickstarter, Indie-gogo), reward based community financing has receded from the former „garage“ aspect. In many cases, successful campaigns can only be launched by marketing firms operating with a high success commission (20-30% of the collected amount).

According to estimates and indirect experience, an enterprise must have a budget of as much as 10 million to launch a truly compelling campaign. For many enterprises, this is a hard to jump barrier to entry.

Alongside the disproportionately larger costs – as estimates show that campaign preparations can take many tens of millions of Forints – even a smaller communications or timing error can result in the campaign's failure. Risk minimizing attitude of the backers leads to the rise of more mature projects – where maturity and trustworthiness is proven by a high quality (and usually expensive) campaign – including rendered 3D images, videos, customer opinions, and social proofs as well.

Disadvantages or risk factors of crowdfunding include that over the course of the campaign's implementation, in the case of an early phase and a small team, the focus of the enterprise can be shifted from other critical activities – even the development of the product.

Risks include potential damage to the reputation or professional renown of the enterprise in the event of an unsuccessful campaign. Of responders, this had only arisen among investors who operate in later phases of the seed stage, among stakeholders engaged in incubation and specialized in an earlier stage in no way was it considered as a factor for exclusion.

Transformation and future of reward based crowdfunding

The study findings have further narrowed the recommendations for the application.

Reward based crowdfunding in the case technological type innovation projects aiming the development of a “business to consumer” type of solution is one of the best opportunities to gain quick and valuable experience for those starting out – whether they start out on the path of becoming an entrepreneur as an individual, or as a team in the direction of market entry and growth. Through the platform, they can evaluate and comprehend the actual market power of their own product, including their customers and competencies, in the fields of marketing, design, strategy development, implementation, risk management, and communications alike.

The campaign is not always sufficient in and of itself (when we examine the recommendations alongside a risk minimization strategy, requesting a small campaign amount) to finance the launch of the enterprise, and is not enough without other motivations and appropriate attitude to enable one to become an entrepreneur. In the event that it is paired with the appropriate abilities, however, it can provide a significant boost to the situation of entrepreneurs and enterprises.

As one of the interview subjects explained, even though crowdfunding on its own does not help one become an entrepreneur, whether or not the campaign is successful, it helps those who apply them become genuine entrepreneurs.

With regard to the future of crowdfunding, every responder agreed that this form of financing is supplemental in nature, and may give enterprises that otherwise cannot or would not like to obtain funding any other way, and that we can expect continued expansion of the volume of crowdfunding.

Opinions are split with regard to whether an enterprise can acquire funding through crowdfunding when they are unable to secure it any other way and lacking a serious campaign budget. Experts assume the continued supplemental nature of crowdfunding due to the fact that this is not smart money, it does not replace an angel investor's networking capital or the contact synergies accessible through the entire portfolio of a business incubator. It may be enough, however, to ensure initial growth or the diversification of the subsequent portfolio. Even though this does not work for many, it was a genuine opportunity for some projects.

The significance of crowdfunding cannot be dismissed where such powerful validation can position the enterprise into a more favorable negotiating position prior to more serious fundraising efforts. Crowdfunding can also play a significant role in the reduction of risks arising in relation of information asymmetry in the process of financing innovation-driven enterprises.

In her work, Lovas (2016) examined the characteristics and management of the challenges of information asymmetry arising in the financing of innovation, detailing the emerging risks in the process and the possible points of state intervention. The cause of information asymmetry and moral hazard is that the project initiators possess the most information about their own development, insights of investors' risk capitalists, angel investors are limited (Lovas, 2016).

In-depth interviews with the entrepreneurial financing experts revealed that investors attempt to reduce these risks by lengthening evaluation processes that involve unexpected tasks for entrepreneurs (as requesting expert opinions, extending geographical scope of market surveys, asking for design strategic changes). In terms of reducing the risk on the investors side, almost all experts highlighted that a successful community financing campaign for capital investors is one of the highest quality safeguards in case of businesses that have not yet come to a serious background.

In spite of the fact that crowdfunding is typically considered a complimentary funding format, a significant proportion of stakeholders acknowledge that for certain enterprises in certain cases, reward-based crowdfunding can replace one or more type of traditional forms of entrepreneurial financing; in such event, in many cases they can obtain funding with better terms

than with the employment of traditional solutions. Even though the study has not focused on equity-based crowdfunding or the currently trending ICO fundraising, most stakeholders have also mentioned these as well as funding sources that could be recommended during the latter stages of company growth – at the end of the seed stage and the beginning of the growth stage.

It must be emphasized that reward based crowdfunding has undergone a significant transformation over the course of the past 7 years. It has shifted from hobby and garage projects to campaigns developed along a well thought-out strategy, possessing a serious communications and marketing budget. In many cases, these are launched by long-standing SMEs to aid the launch of their new products. Projects launched in 2016 and subjected to detailed content analysis, and feedback received from the campaign managers who had launched them, show that this remains the financing format where hobby projects get an opportunity to outgrow themselves, as credible personal anecdotes and good ideas find their respective audiences.

When we interpret it in the context of the lifecycle of technological innovations, crowdfunding as technology based innovation (via the application of a new solution along a new organizational model) is just now transitioning into the productivity period, where the players involved are seeing the cases and risks of application much more clearly, with its application and risks becoming more manageable, becoming accessible to a continuously expanding circle.

Additional research opportunities are outlined in the field were: (1) use of reward base crowdfunding in the transition between the pre-seed and seed stage, (2) how recommendations should be refined in case of different product types (software, hardware, application, consumer goods) (3) by which product type and stage of business maturity does it provide better viability, and (4) what strategies can be applied to minimize risks arising in the given stage and as a consequence of the product type.

References

- Agrawal, A. – Catalini, C. – Goldfarb, A. (2014): Some simple economics of crowdfunding. *Innovation Policy and the Economy*, 14(1), pp. 63-97. DOI: 10.1086/674021.
- Belleflamme, P. – Lambert, T. – Schwienbacher, A. (2014): Crowdfunding: Tapping the right crowd. *Journal of Business Venturing*, 29(5), pp. 585-609. DOI: 10.2139/ssrn.1578175.
- Béza D. – Csákné Filep J. – Csapó, K. – Csubák, T. K. – Farkas Sz. – Szerb L. (2013): *Kisvállalkozások finanszírozása*. Budapest: Perfekt Gazdasági Tanácsadó Oktató és Kiadó Zrt.
- Chan, C. R. – Parhankangas, A. (2017): Crowdfunding innovative ideas: How incremental and radical innovativeness influence funding outcomes. *Entrepreneurship Theory and Practice*, 41(2), pp. 237-263. DOI: 10.1111/etap.12268.
- Cordova, A. – Dolci, J. – Gianfrate, G. (2015): The Determinants of Crowdfunding Success: Evidence from Technology Projects. *Procedia-Social and Behavioral Sciences*, 181, pp. 115-124. DOI: 10.1016/j.sbspro.2015.04.872.
- Cumming, D. J. – Leboeuf, G. – Schwienbacher, A. (2014): Crowdfunding models: Keep-it-all vs. all-or-not-hing. 2014 finance meeting EUROFIDAI-AFFI paper (Vol. 10). Paris, 2014 December. DOI: 10.2139/ssrn.2447567.
- Csubák, T. K. – Fejes, J. (2014): A magyar kkv-k 21. századi banki finanszírozásának áttekintése és kiűtkeresés a hitelválság csapdájából. *Hitelintézet Szemle*, 13(2), pp. 174-194. Retrieved from: http://unipub.lib.uni-corvinus.hu/2020/1/imp_174_194_Csubak_u.pdf
- Crowdfund Capital Advisors (2014): How Does Crowdfunding Impact Job Creation, Company Revenue and Professional Investor Interest?
- De Buysere, K. – Gajda, O. – Kleverlaan, R. – Marom, D. (2005): Best practices of public support for early-stage equity finance. Final report of the expert group, Directorate-General for Enterprise and Industry. A Framework for European Crowdfunding European Commission. Retrieved from: http://evpa.eu.com/wpcontent/uploads/2010/11/European_Crowdfunding_Framework_Oct_2_12. Last accessed: November 1. 2013)
- Deffains-Crapsky, C. – Sudolska, A. (2014): Radical innovation and early stage financing gaps: equity-based crowdfunding challenges. *Journal of Positive Management*, 5(2), 3. DOI: <http://dx.doi.org/10.12775/JPM.2014.009>.
- Európai Bizottság (2015): Útmutató a közösségi finanszírozáshoz. Európai Bizottság, 2015. DOI: 10.2873/00664.
- Freedman, D. M. – Nutting, M. R. (2015): A brief history of crowdfunding. Including Rewards, Donation, Debt, and Equity Platforms in the USA. Retrieved from: <http://www.freedman-chicago.com/ec4i/History-of-Crowdfunding.pdf>.
- Freund, R. (2010): How to overcome the barriers between economy and sociology with open innovation, open evaluation and crowd funding. *International Journal of Industrial Engineering and Management*, 1(3), pp. 105-109. link: http://www.iim.ftn.uns.ac.rs/images/journal/volume1/ijiem_vol1_no3_4.pdf. ISSN 2217-2661.
- Fundly (2018): Regional crowdfunding statistics. CROWDFUNDING STATISTICS [UPDATED FOR 2017!]. Fundly. Retrieved from: <https://blog.fundly.com/crowdfunding-statistics/#general>
- Geiszl, D. (2017): A tőke-alapú közösségi finanszírozás. Dolgozat, Kochmeister-díj. Pécs: Pécsi Tudományegyetem Közgazdaságtudományi Kar Pénzügy MSz. DOI: 10.25201/HSZ.16.4.187200.
- Gerber, E. M. – Hui, J. S. – Kuo, P. Y. (2011): Crowdfunding: why people are motivated to post and fund projects on crowdfunding platforms. Northwestern University Creative Action Lab, Sheridan Drive, Evanston. Retrieved from: <https://pdfs.semanticscholar.org/c1e2/a1068f0af1c3120c62be5943340518860ecb.pdf>
- Gleasure, R. (2015): Resistance to crowdfunding among entrepreneurs: An impression management perspective. *The Journal of Strategic Information Systems*, Volume 24, Issue 4, December 2015, pp. 219-233. DOI: 10.1016/j.jsis.2015.09.001.
- Hoffer, I. – Katona, V. (2012): Fogalmi kapaszkodók a KKV-k innovációs gyakorlatában. *Vezetéstudomány/Budapest Management Review*, 43(9), pp. 46-58. Retrieved from: http://unipub.lib.uni-corvinus.hu/955/1/vt_2012n9p46.pdf

Hortoványi, L. (2012): A vezető szerepe az innovációban és az innováció értelmezése vezetők körében. In: Szabó Zs. Roland (szerk.): Innováció vezetői szemmel. Budapest: Aula Kiadó Kft., pp. 55-89. Retrieved from: <http://mek.oszk.hu/11300/11388/11388.pdf>.

Joenssen, D. W. – Michaelis, A. – Müllerleile, T. (2014): A link to new product preannouncement: Success factors in crowdfunding. Retrieved from: <https://ssrn.com/abstract=2476841>. DOI: <http://dx.doi.org/10.2139/ssrn>.

Kuppuswamy, V. – Bayus B. L. (2015): A Review of Crowdfunding Research and Findings. Handbook of New Product Development Research. DOI: 10.2139/ssrn.2685739.

Kuti, M. – Madarász, G. (2014): A közösségi finanszírozás. Pénzügyi Szemle, 2014/3. pp. 374-385.

KPMG (2017): Venture Pulse Q4 2017 Global analysis of venture funding. 2017. Retrieved from: <https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2018/01/venture-pulse-report-q4-17.pdf>.

Lin, M. – Viswanathan, S. (2015): Home bias in online investments: An empirical study of an online crowdfunding market. Management Science, 62(5), pp. 1393-1414. DOI: <http://dx.doi.org/10.1287/mnsc.2015.2206>

Lovas, A. (2016): Innováció-finanszírozás aszimmetrikus információs helyzetben. Az állami beavatkozás hatása. (Financing of Innovation under Asymmetric Information. The Effect of Government Intervention). PhD thesis. Budapest: Budapesti Corvinus Egyetem, Közgazdaságtani Doktori Iskola. Retrieved from: http://phd.lib.uni-corvinus.hu/893/1/Lovas_Anita.pdf. DOI 10.14267/phd.2016006.

Lukkarinen, A. – Teich, J. E. – Wallenius, H. – Wallenius, J. (2016): Success drivers of online equity crowdfunding campaigns. Decision Support Systems, 87, pp. 26-38. DOI: <https://doi.org/10.1016/j.dss.2016.04.006>.

Mollick, E. R. (2013): Swept away by the crowd? Crowdfunding, venture capital, and the selection of entrepreneurs. DOI: 10.2139/ssrn.2239204.

Mollick, E. (2014): The dynamics of crowdfunding: An exploratory study. Journal of Business Venturing, 29(1), pp. 1-16. DOI: <https://doi.org/10.1016/j.jbusvent.2013.06.005>.

Mollick, E. R. – Kuppuswamy, V. (2014): After the campaign: Outcomes of crowdfunding. UNC Kenan-Flagler Research Paper No. 2376997. Retrieved from: SSRN: <https://ssrn.com/abstract=2376997>. DOI: <http://dx.doi.org/10.2139/ssrn.2376997>.

Mollick, E. R. (2016): Containing multitudes: The many impacts of Kickstarter funding. The Wharton School, University of Pennsylvania. Retrieved from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2808000. DOI: <http://dx.doi.org/10.2139/ssrn.2808000>.

Mukherjee, A. – Yang, C. L. – Xiao, P. – Chattopadhyay, A. (2017): Does the Crowd Support Innovation? Innovation Claims and Success on Kickstar-

ter. HEC Paris Research Paper. DOI: <http://dx.doi.org/10.2139/ssrn>.

OECD (2002): Small and Medium Enterprise Outlook. 2002 Edition. DOI: <https://doi.org/10.1787/1999138x>.

OECD (2017): OECD data show pick-up in entrepreneurial activity. <http://www.oecd.org/newsroom/oecd-data-show-pick-up-in-entrepreneurial-activity.htm>.

Ordanini, A. – Miceli, L. – Pizzetti, M. – Parasuraman, A. (2011): Crowd-funding: transforming customers into investors through innovative service platforms. Journal of Service Management, 22(4), pp. 443-470. DOI: 10.1108/09564231111155079.

Paschel, J. (2016): Choose wisely: Crowdfunding through the stages of the startup life cycle. Business Horizons, 60 (2). December, 2016. DOI: 10.1016/j.bushor.2016.11.003.

Petitjean, M. (2017): What explains the success of reward-based crowdfunding campaigns as they unfold? Evidence from the French crowdfunding platform Kiss-KissBankBank. Finance Research Letters, in print. DOI: <https://doi.org/10.1016/j.frl.2017.11.005>.

Riedl, J. (2013): Crowdfunding Technology Innovation. IEEE Computer, 46(3), 100-103. DOI: <http://doi.ieeecomputersociety.org/10.1109/MC.2013.89>. DOI: 10.1109/MC.2013.89.

Rosenberg, N. (2004): Innovation and economic growth. Innovation and Economic Growth, 52. DOI: 1331677X.2017.1383176.

Sigar, K. (2012): Fret no more: inapplicability of crowdfunding concerns in the internet age and the JOBS Act's safeguards. Administrative Law Review, pp. 473-506. Retrieved from: <http://www.administrativelawreview.org/wp-content/uploads/2014/04/Fret-No-More-Inapplicability-of-Crowdfunding-Concerns-in-the-Internet-Age-and-the-Jobs-Acts-Safeguards.pdf>.

Shirky, C. interviewed by Blattberg, E. (2012): Clay Shirky talks JOBS Act and the new business ecosystem. Available at: www.crowdsourcing.org/editorial/clay-shirky-talks-jobs-act-and-the-new-businessecosystem/13719.

Schwiebacher, A. (2015): Entrepreneurial risk-taking in crowdfunding campaigns. Université Lille - SKEMA Business School, France. DOI: <http://dx.doi.org/10.2139/ssrn.2506355>.

Schwiebacher, A. – Larralde, B. (2010): Crowdfunding of small entrepreneurial ventures. Retrieved from: <http://www.w-t-w.org/en/wp-content/uploads/2014/03/Schwiebacher-Larralde-2010.pdf>. DOI: <https://doi.org/10.2139/ssrn.1699183>.

Valančienė, L. – Jegelevičiūtė, S. (2014): Crowdfunding for Creating Value: Stakeholder Approach. Procedia Social and Behavioral Sciences, 156, pp. 599-604. DOI: <https://doi.org/10.1016/j.sbspro.2014.11.248>.

PERCEIVED JUSTICE AS A CRUCIAL FACTOR OF PERFORMANCE MANAGEMENT SYSTEMS

Academic journals lack recent research on the state of Performance Management (PM) practices and their assessment in a comprehensive manner. By examining the current trends in line with the research, this article narrows the gap between practice and research and delivers practical recommendations. Based on the four criteria of effectiveness the article describes the comprehensive framework for evaluating the effectiveness of PM systems and highlights the importance of justice perception as one of the effectiveness criteria. The article displays the findings of secondary research about the new PM systems introduced recently by companies, and analyzes the main driving forces of the changes. The general characteristics of the traditional and emerging trends are described and defined as "competitive" and "cooperative" approaches in comprehensive framework. The conclusion of the article is twofold. Firstly, one cannot speak about major changes of PM, but there are signals of a shift from the "competitive" to the "cooperative" approach, which can be explained by situational changes, and the organizations should match their PM with their own situations. Secondly, fairness perception as one of the employees' reactions to PM is a crucial criteria for effectiveness and it is related to the success or failure of the system.

Keywords: performance management, performance appraisal, perceived justice, perceived fairness

The main question of Human Resource Management (HRM), as a support function to leadership, is how to make an employee as effective as possible in achieving organizational goals. It is assumed that employees' individual performances lead to intended organizational performance if individuals' goals are in line with organizational goals. Performance Appraisal (PA) as an integral part of Performance Management (PM) system has been considered as one of the most important HR process, because it provides the best chance to establish a link between individual performance improvement and firm performance improvement (DeNisi – Murphy, 2017).

It took a long journey for researchers to start to focus on performance improvement more as a goal of appraisals (DeNisi – Pritchard, 2006). In the past, research on PM has not had the impact it could have on the practice, mainly because it has focused on the quantitative criterion, that refers to the validity and reliability of the measurement tools, while researchers paid less attention to the qualitative criterion, that refers to the individual justice perceptions of these tools and practices, that affect employees' attitudes and behavior in the workplace (Farndale et al., 2011).

Despite the fact that PM have been subject to many criticisms in the past, the theory resonates to the practical problems of the current period. The historical and economic context has played a huge role in the evolution of PM practices and research over the decades (DeNisi – Pritchard, 2006). Researchers have been dealing with those issues, which drew attention of the practitioners, time to time. Furthermore, the research lines dealing with psychometric soundness of rating formats highlighted those unsolved issues, which made researchers move attention finally to measures that reflected ratee perceptions of fairness and accuracy (DeNisi – Murphy, 2017).

As justice perception of performance appraisal has been identified as an important criterion in judging effective-

ness and usefulness of PM for organizations, the contextual factors outside the appraisal process became also important because they may influence justice perceptions of performance appraisal (Erdogan, 2002).

PM researchers made a significant progress when they came to better appreciate the critical influence of the context in which performance appraisal occurs on the process and outcomes of appraisal (Erdogan, 2002; Murphy – DeNisi, 2008). PM research can not make significant contribution in understanding how or why one appraisal succeed and the other not without considering why appraisals are conducted and how the contextual factors shape the appraisal process and outcomes of the appraisal (Biron et al., 2011; DeNisi – Murphy, 2017).

However many research published in this topic are still mainly decontextualized, examining different facets and features of the process in isolation (DeNisi – Murphy, 2017). Other studies may stress out the importance of specific contextual variables such as national or organizational culture, leader–member exchange quality, perceived organizational support (Erdogan, 2002; DeNisi – Murphy, 2017) or the features of an effective implementation (Aguinis et al., 2011; Longenecker – Fink, 2017).

Nonetheless studies are also published such as motivational framework (DeNisi – Pritchard, 2006), integrated framework (Iqbal, 2015) and the conceptual framework of using competing values approach (Ikramullah et al., 2016), which met the demand to integrate the results of previous PM research.

According to contingency theory the design of an organization and its subsystems must have a proper fit with the environment and its subsystems should be also consistent with one another (Lawrence – Lorsch, 1967). Based on this premise, HR aims to develop adequate PM systems in line with the organization's business model. While the PM system should also be consistent with other HR sub-

systems, such as compensation, succession planning, talent management, career development, learning and development and with other systems in the organization such as strategy, business planning and controlling. HRM should ensure that processes are running along the same principles and standards across the organization, while providing efficient support to the top and middle management.

The effectiveness of PM systems should be assessed and examined in a more comprehensive manner, in which PM systems are built in a way that they are in line with their situation and users' justice perception. Based on this as an integrated view, the practical implication of the conceptual framework of Ikramullah et al. (2016) can have a great added value to narrow the gap between practice and research.

Drawing on the direct aim of enhancing the effectiveness of PM systems in improving employees' performance, my research questions are formulated as follows: how can PM be effectively designed and implemented in line with its external and internal situations and organizational structure by applying the conceptual framework of using competing values approach? What are the differences and common characteristics of the PM systems implemented recently and what are the main driving forces related to these characteristics?

Research on PM dates back to the early 1920s and based on that one can assume practitioners could find out how to design and implement PM systems in line with their strategic and business goals and situations effectively. However there are very few specific recommendations about designing and implementing PM whose goal is performance improvement. Furthermore "a perusal of the literature reveals that recent research on the state of PM practices is solely lacking in academic journals" (Gorman et al., 2017, p. 193.). My aim is to narrow the gap between practice and research by examining the current trends in line with the research and give practical recommendations how to change or improve their PM practices in order to enhance the effectiveness of PM as a whole.

In recent years many articles were published in business journals with provocative headlines about the end of traditional performance management. Big multinational companies decided to get rid of their traditional PM systems and start to rethink the way they conducted their procedures (Buckingham – Goodall, 2015; Cappelli – Tavis, 2016; People & Strategy, 2016; Kinley, 2016). These give the impression that we are witnessing a major change of PM.

This paper is structured as follows. First, in Section 2 I define PM system, then in Section 3 I discuss the PM literature with the different lines of PM research. Based on the four criteria of effectiveness I introduce the Ikramullah's comprehensive framework for effectiveness of performance appraisal systems (Ikramullah et al., 2016). Then I highlight the importance of justice perception as one of the effectiveness criteria and describe Greenberg's (1993) taxonomy of justice perceptions applied to performance appraisal (Thurston, 2001 in Walsh, 2003). Secondly, I conduct a secondary research, which involves a review of journals on one hand, and data available online about the new PM systems introduced between 2012 and 2017 by multinational companies on the other. As far as the latter

source of data is concerned instead of studying the entire population, I selected a sample of companies which are important actors in the market. By generalizing the results in order to eliminate my personal bias in the selection, I focus on the general patterns that appeared in different companies. In Section 4 I provide a brief overview about the evidence of the market. In Section 5 I analyze the main driving forces of the changes by differentiating internal and external situations and organizational structures. I describe the general characteristics of traditional and emerging trends and rename them as "competitive" and the "cooperative" approaches of PM systems and put the approaches in comprehensive framework for effectiveness. Finally, in Section 6 I give recommendations on how PM system can be improved and in Section 7 I also discuss what the possible further research directions can be.

As a conclusion, first, I found that the organizations should fit their PM systems with their own situations in order to set up an effective system. Based on the review we cannot speak about major change of performance management, but there are signals of a shift from the "competitive" to the "cooperative" approach, which can be explained by situational changes. Secondly, fairness perception as one of the employees' reactions to PM system is a crucial criteria for the effectiveness of PM systems and it is related to the success or failure of the system. Recent changes highlight the unsolved issues of psychometric soundness of rating formats, since it is not the validity and reliability of the measurement tools but the individual justice perceptions of these tools and the related practices that affect employees' attitudes and behavior.

Performance Management System and Performance Appraisal System

Nowadays researchers and practitioners tend to assume that employees' individual performances lead to intended organizational performance if individuals' goals are in line with organizational goals (DeNisi – Murphy, 2017). The relevance of PM systems and practices is that they aim to establish a link between individual performance improvement and firm performance improvement.

Like every other organizational system, PM is to provide efficient support to the management to fulfill its coordination task. In order to coordinate, it is management's responsibility to set strategic goals and objectives, to cascade organizational goals into individual goals, to control past and present achievements and give feedbacks accordingly in order to foster future performance in line with organizational goals. Within the leadership function managers convey goals to the employees, motivate them by compensation, future career opportunities and development. PM is the result of the organizing function of management.

PM is an integral part of the annual business planning cycle. PM system enables managers to cascade the strategic targets into team and individual performance objectives and development plans; to reinforce sense of accountability and performance-oriented culture in the organization; to enhance employees' motivation and commitment, and to evaluate the capabilities of people for future business challenges. From

the individual's point of view PM system is important to clarify job responsibilities, expectations and priorities; to provide feedback and coaching; and to enable systematic dialogue about longer-term career aspirations and personal development (Bakacsi, 1999). The main goal of PM-related HRM practices is to increase organizational performance through individual and group performance by improving performance-related behavior such as motivation, job satisfaction, organizational commitment and trust, cooperation, compliance and acceptance of decisions and by decreasing "bad" behavior outcomes such as silence, absenteeism, fluctuation and conflict (Conlon – Meyer – Nowakowski, 2005).

Performance Appraisal (PA) as part of PM system refers to the whole procedure, including the establishment of performance standards, appraisal-related behaviors, the determination of performance ratings, and the communication of the rating to the ratee (Erdogan, 2002). The goal of PA is to provide information that will best enable managers to improve individual performance (DeNisi – Pritchard, 2006). Furthermore an effective PA is an "engine" of the HRM, providing essential information to all other HR systems in order to support decisions of compensation, succession planning, talent management, career development, learning and development planning (Bakacsi, 1999; Biron et al., 2011). Since PA is an integral part of PM, hereinafter whether I refer PA as PM, or I make a clear distinction between the two concepts, only when I find it necessary.

Literature review

Even though the interest in evaluation of performance at work can be tracked back in ancient China and there were also efforts at establishing merit ratings as far back as the 19th century (Murphy – Cleveland, 1995 in DeNisi – Murphy, 2017), psychological research on performance rating began only in the 1920s, with Thorndike's article (Thorndike, 1920 in DeNisi – Murphy, 2017) in which he identified what eventually became known as "halo error."

There were two important trends, which defined performance appraisal practices in the Anglo Saxon and Western European cultures. Firstly, the evaluation methods have been shifted gradually towards behavioral and outcome-based approaches from personality traits and informal (essay-type) evaluation. Secondly, the application of the performance appraisal system has become more and more numerous and the number of goals that formal evaluation systems have to achieve was also growing such as administrative goals for promotion, dismissal and salary raise, later training and development in individual and organizational level, then finally organizational planning, legal documentation and guidance for the evaluation and development of the personnel system. Owing to this central role, the multifaceted goals, and the frequently changing performance criteria in changing environments, performance assessments are surrounded by many conflicts (Takács, 2001).

Despite the fact that PM has been subject to many criticisms in the past, it seems that historical and economic context has played a role in the evolution of PM practices

and research over the decades. The organizational and managerial needs served as driving forces in developing new research lines in the field (DeNisi – Pritchard, 2006).

In their literature review in *Journal of Applied Psychology* DeNisi and Murphy (2017) defined nine substantive subareas that dominate performance management and appraisal research: (1) rating scales, (2) evaluating the quality of rating data, (3) training (4) reactions to appraisal, (5) purpose for appraisal, (6) rating sources, (7) demographic effects, (8) cognitive processes (9) PM research. The authors emphasize that the rating scales and evaluating the quality of rating data research – that is assessing the reliability, validity, or accuracy of performance ratings –, underlined the problems with more traditional criteria for evaluating the effectiveness of appraisal systems. These research lines made a significant impact by moving the attention from traditional error measures to accuracy measures and eventually to measures that reflected ratee perceptions of fairness and accuracy. After 50-year dominance of rating research the reactions to appraisal research began in the 1970s by focusing on ratee satisfaction and perceptions of fairness. This direction of research has been especially important because "it helped move the field to consider other types of outcome measures that could be used to evaluate appraisals systems" (DeNisi – Murphy, 2017, p. 425.). The concept of justice perceptions have become a significant part of later models of PM such as the work of DeNisi and Smith (2014) and many researchers suggest that justice perception remain as an important research line in the future (DeNisi – Murphy, 2017).

As every research line aims to improve the effectiveness of PM systems, studies suggest that there are four criteria of effectiveness, in which each research line can be classified: utilization, qualitative, quantitative and outcome criterion. The utilization criterion refers to purpose achievement, which addresses the question why appraisals are conducted. The qualitative criterion refers to the justice perceptions of a performance appraisal system related to a set of rules and practices. The quantitative criterion refers to psychometric soundness of rating formats, focusing on enhancing appraisal accuracy and minimizing rating errors and biases. The outcome criterion refers to appraisee reactions, in terms of both person- and organization-referenced outcomes reflects on appraisees' attitudinal evaluations of and responses to the system.

Utilization, qualitative and quantitative criteria are considered incomplete unless these are linked to the outcome criterion. Regarding the qualitative criterion without assessing "fair process effect" (Folger et al., 1979 in Ikramullah et al., 2016) justice cannot be done. The literature highlighted that fairness perceptions are one of the employees' reactions to PM system and are related to the success or failure of the system (Smither, 1988; Taylor et al., 1995; Murphy – Cleveland, 1991; Erdogan et al., 2001 in Ikramullah et al., 2016). Individuals' attitudes and behaviors can be determined by their perceptions of reality, not reality per se (Lewin, 1936 in Ikramullah et al., 2016).

Comprehensive framework for effectiveness of performance appraisal system

The literature has pointed out a wide array of deficiencies related to many existing PM systems such as failure to pursue and achieve PM purposes; lack of reliable, valid and objective performance measures; appraisers' dependency on human information processing and rating judgments; inability to meet expectations of the key stakeholders; weak interpersonal relationships between appraisers and appraisees, which in turn, increase interpersonal conflicts and dwindle trust and communication between them (Ikramullah et al., 2016).

The effectiveness of PM system should be assessed and judged not on the basis of a single standard, but multiple criteria that include values and preferences of all major stakeholders of the system, i.e., appraiser, appraisees and the organization (HR department and the top management). To provide a guideline for professionals to consider the effectiveness of performance appraisal system Ikramullah et al. (2016) propose a comprehensive framework for effectiveness of performance appraisal system, which is based on the competing values framework of Quinn and Rohrbaugh (1983) (Quinn – Rohrbaugh, 1983 in Ikramullah et al., 2016).

The competing values framework represents the competition between stability and change, and between internal organization and the external environment. Based on these two competing dimensions the comprehensive framework for effectiveness of performance appraisal system includes four quadrants: internal process model, rational goal model, human relations model and open system model (Denison – Spreitzer, 1991 in Ikramullah et al., 2016).

Internal process model (control and internal focus) highlights control, stability, information management, communication and continuity. Its main assumption is related to the process (e.g. clarity of responsibilities, measurement, documentation and record keeping) governed by clear rules and strictly followed by its users. It includes assigning qualified appraisers; giving regular feedbacks; appraising performance and recording in on a psychometrically sound rating format; giving access to information and weight to voice of appraisees.

Rational goal model (control and external focus) includes planning, goal setting and efficiency. This model constitute a link between clear and certain organizational goals, and performance improvement. To enhance effectiveness, companies set goals, develop plans and then take actions to accomplish these goals.

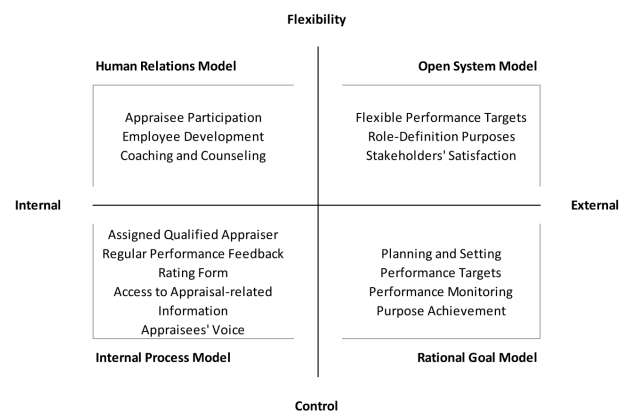
Human relations model (flexibility and internal focus) highlights employee development, and morale and group cohesion. The appraisers are encouraged to seek appraisees' participation while making appraisal-related decisions. Appraisers need to coach their subordinates and emphasize employee development through training and development programs not only for improving on their current performance but also to meet future workforce needs.

Open system model (flexibility and external focus) underlines flexibility, readiness, out-spacing competition, growth and acquiring resources. It focus on creative problem solving, innovation, adaptability and manage-

ment of change by defining flexible performance targets and role-definition purposes. Due to the development of technology, globalization and workforce diversity there are many variations occur in work setting and organizational structures and employees have to develop new skills and perform different tasks.

Each key stakeholder has different values and preferences, however the PM system should be effective in all four areas. These models can be good representations of the four criteria of effectiveness of PM systems (Ikramullah et al., 2016) (*Figure 1*).

Figure 1 Competing value framework for an effective performance appraisal system



Source: Ikramullah et al. (2016): Effectiveness of performance appraisal; *Personnel Review*, 45, 2, p. 341.

Perceived justice in performance management

Based on the review, perceived justice research has significant roots in the field and fairness perception as one of the employees' reactions to PM system has been identified as an important criterion in judging the effectiveness and usefulness of performance appraisal. Since not the validity and reliability of the measurement tools but the individual justice perceptions of these tools and practices affect employees' attitudes and behavior in the workplace.

Little attention has been paid to the employee perspective, although employees eventually are the recipients of and their performances are subjects to the PM systems (Farndale et al., 2011).

The impact of HR practices on employees' commitment and performance depends on employees' perception and evaluation of these practices. The perception and attitudes may mediate and moderate the relationship between HRM practices and these employee performance-related behaviors.

Different employees are often assumed to perceive the employment practices offered by the organization similarly, however variation may exist in employees' perceptions of HRM practices or benefits offered by the organization even when in objective terms what is offered to different employees is similar. (Hartog et al., 2004; Boon et al., 2011)

The contemporary theories about justice mainly concentrate on how individuals perceive justice, how they consider and investigate the subjective and phenomenological appraise, a given stimulus or situation. Within this approach something

is considered to be “fair” not because it should be (normative), but because some people perceive it to be so (descriptive) (Cropanzano – Bowen – Gilliland, 2007; Greenberg – Bies, 1992). The research of perceived fairness of performance appraisal systems in the 1970's and 80's has identified the fairness of the evaluation with the fairness of distribution. From the 80's however the researchers' attention was more and more shifted towards the fairness of the procedures, then later the fairness of interpersonal treatment received during the execution of the procedure (Bies – Moag, 1986).

Conlon, Meyer and Nowakowski (2005) distinguished four dimensions of justice: distributive justice, procedural justice, informational justice and interpersonal justice.

Distributive justice refers to the perceived fairness of outcome distribution. The distributional justice refers to the outcome of the distribution based on the norm, which the participants have agreed upon previously. Distributive injustice can arise in such situations when the actual allocation is not in line with these normative expectations. According to the justice literature there are three types of distributional norms: equity, equality and need. The equity theory (Adams, 1965 in Erdogan, 2002) argues that each person compares their input-output ratios with those of others in order to determine the level of fairness. When employees perceive inequity, they try to rebalance it by modifying their efforts or outcomes or by changing their perceptions of inputs or outputs. In PM, employees compare their efforts with the rating they get and the fairness of the rating creates distributive justice perceptions (Erdogan, 2002). The equality principle traditionally means that equal amounts go to each recipients regardless of any other factors such as their inputs (Cook – Hegtvædt, 1983). Although equality meant to be less widely accepted by individuals, this principle is most commonly used in everyday life, since heuristics can be applied more easily than rules in complex decision-making situations (Gerákné, 2008a). Principle of need argues that those individuals in greatest needs should be provided more resources to meet those needs. This distribution principle is limited in organizations because the needs are not related to performance, but they indicate some kind of special treatment, which is often difficult to justify (Mező – Kovács, 1999 in Gerákné, 2008a).

According to intercultural studies, individualist cultures tend to apply equity principles, while collectivist cultures are based on the principle of equality theory mostly (Ramamorthy – Flood, 2002 in Gerákné, 2008a). According to Deutsch (1982), the application of the principles is rather influenced by the nature of the relationship between the parties: if the relationship is for profit, equity plays a role, if the relationship is for joy, equality is more dominant and if the relationship is for development and prosperity, then the principle of need comes to the fore (Berkics, 2008). The choice of principle at the organizational level is influenced by the nature of work, and the organizational and national culture. At the same time, the preferred distribution principle may be influenced by egocentric bias, profit maximization, and fundamental attribution error at the individual level.

Procedural justice refers to the structural aspects of the decision-making process by which performance is evaluated. The importance of procedural justice is based on the control theory of Thibaut and Walker (1975) and the group-value model of Lind and Tyler (1988). According to control theory individuals have a desire to control what happens to them, while the group-value model argues that individuals have a desire to be valuable members of their groups and a fair procedure indicates that they are valued (Erdogan, 2002).

Bies and Moag (1986) defined interactional justice as the fairness of interpersonal treatment received during the execution of a procedure and underlines the importance of truthfulness, respect, and justification as fairness criteria of interpersonal communications. According to the justice literature the interactional justice consists of two components: informational justice and interpersonal justice. Informational justice refers to the quantity and quality of the information provided during the process. Informational justice contains the overlapping areas of interactional and procedural justice types. As Erdogan (2002) also claims that procedural justice can be conceptualized as two related, but still distinct construct reflecting system procedural justice and rater procedural justice (Walsh, 2003). Interpersonal justice refers to the social aspects of distributive justice, it describes how respectfully we deal with each other (Conlon – Meyer – Nowakowski, 2005). Interpersonal justice can include the form of any social rewards provided by the supervisor or injustice such as an insult which is defined as a social interaction and an outcome (Mikula – Petrik – Tanzer, 1990 in Walsh, 2003). A manager's respectful behavior can be considered as a socio-emotional award.

The perceived justice is influenced by all the elements of the four justice dimensions, and they often interact with each other. Since the employees usually have limited information about the outcome of the distribution of others, they can not make a proper social comparison about their input/output rate. The significance of procedural justice is based on the assumption that employees have easier access to procedural elements than output information, so each individual can make justice judgments based on their impressions on the process and they try to integrate their knowledge about the output into that.

Greenberg (1986) was the first one, who applied the theory of organizational justice in performance management, and later Greenberg (1993) established a four-categories of justice perceptions model: (a) systemic (structural-procedural), (b) informational (social-procedural), (c) configural (structural - distributive), (d) interpersonal (social-distributive) (Cropanzano – Bowen – Gilliland, 2007).

This model consists of two dimensions: distributive/procedural and structural/social dimension. The distributive justice perceptions concern outcome allocations, while procedural justice perceptions concern how allocation decisions made. The structural components define the context of decision making for processes and outcomes, while the social components imply the quality of interactions during the communication of processes and outcomes. In *Table 1*

the concerns regarding the justice implication of PM system are summarized based on Walsh (2003).

Table 1 Taxonomy of Justice Perceptions Applied to Performance Appraisal

	Procedural Justice	Distributive Justice
Structurally Determined	<i>Systemic</i> Concerns about procedures to 1) assign raters: - there is a formal PA system; - the job dimensions are highly relevant; - raters have sufficient level of knowledge of the ratee's job, of the ratee's level of performance and knowledge of the PA system. 2) set criteria and gather information: - procedures are free from bias, accurate, correctable, representative of all concerns (voice) and based on accepted ethical standards. 3) seek appeals: - the ability to appeal performance ratings, express feelings; correct ratings.	<i>Configural</i> Concerns about the norms that lead to ratings and the personal goals of the raters: - rater is not perceived to be driven to conform to other distribution norms such as equality, need, or social status than it is set previously; - the rater is considered to be attempting to avoid conflict by inflating ratings; to play favorites; or to yield to political pressures to distort ratings.
	<i>Informational</i> Concerns about the way raters communicate with their ratees: - the quality of the interactions of implementing and communicating the procedural aspects of the system. (e.g. interactions involve the setting of performance goals and standards, routine feedback, and explanations and justifications of the decisions)	<i>Interpersonal</i> Concerns about the treatment that ratees receive from their raters: - showing respect and sensitivity in supervision (e.g. raters show concern for individuals regarding the outcomes they receive).
Socially Determined		

Source: edited based on Greenberg's (1993) Taxonomy of Justice Perceptions Applied to Performance Appraisal (Thurston, 2001 in Walsh, 2003)

Greenberg's (1993) conceptualization of the four types of justice offers the opportunity to more comprehensively study and organize employees' perceptions of fairness concerning performance appraisal systems. Later Colquitt (2001) has also developed a questionnaire to assess the perceived organizational justice among employees. Greenberg's description of the perceptions of fairness and the questionnaire of Colquitt (2001) may provide practitioners with valuable information to better manage the complex system of PM (Colquitt, 2001).

There are many research dealing with perceived fairness in connection with organizational commitment, helpful citizenship behaviors, job satisfaction, attitude predicting individual's behavior, engagement, trust and turnover intentions, however there is not still a common understanding how these factors have an effect on one another. For example the connection between trust and justice is two-sided. Trust influences what we consider as fair, but justice also affects whether we can trust the other party or not (Sass, 2011). Farndale et al. (2011, 2013) found that perceived justice leads to increased levels of employee commitment, moderated by employee levels of trust in the employer (Farndale et al., 2011; Farndale – Kelliher, 2013). Organizational units with high trust in senior management have both higher levels of commitment, and indicate a stronger link between employee perceptions of fair treatment by their line managers during performance appraisal, and organizational commitment (Farndale – Kelliher, 2013). Findings also show the link between employee experiences of high commitment performance management practices and their level of commitment. This link is strongly mediated by related perceptions of organizational justice. Furthermore, the level of employee trust in the organization is also a significant moderator (Farndale et al., 2011). Other studies show employees' perceived fairness has an effect on attitude, which can predict individual's behavior. „Good”

organizational outcomes include performance, compliance, acceptance of decisions, and cooperation, while “Bad” organizational outcomes comprise of silence, absenteeism, and fluctuation (Conlon – Meyer – Nowakowski, 2005). Several studies deal with the relationship between perceived organizational justice and work stress (Cropanzano et al., 2005; Szilas, 2014). Based on the results of another study, organizational justice can foster trust and commitment, improve job performance, can induce more helpful citizenship behaviors, improved job satisfaction, and diminished conflict (Cropanzano et al., 2007). Justice perceptions in performance appraisals influence organization-related (i.e. commitment, turnover intentions), leader-related (i.e. prosocial behaviors targeting the supervisor, satisfaction with the leader) and performance-related outcomes (i.e. task performance, motivation to improve), through improved exchanges with the organization and the leader, and through increased accountability pressure (Erdogan, 2002).

Evidence from the market

Bokor (2011) conducted a survey to examine the HR function in Hungarian companies. The results showed that although managers considered PM important, they were strongly dissatisfied with it (Bokor, 2011). These results are in line with the international trends. In an American survey only 20% of managers found their PM effective, while in an international survey this rate was 5% (Barrier, 1998). According to another study 91% of HR professionals indicated that their organization has a formal PM (World at Work, 2010). However less than half argued that the system has helped the firm to achieve its strategic goals. Only 27% indicated their employees trust the system and 47% stated that PM viewed as an “HR process” instead of a business-critical process. Even though more than half invest in manager and employer training to make PM more effective, only 28% of the companies felt their managers focus on having effective performance dialogues, rather than just completing forms.

Recently many articles were published with provocative headlines about the end of traditional PM. Big multinational companies announced of getting rid of their traditional PM systems and start to reinvent the way how they conducted their procedures (Buckingham – Goodall, 2015; Deloitte, 2015; Rock – Jones, 2015; Cappelli – Tavis, 2016; Ewenstein, 2016; People & Strategy, 2015; Kinley, 2016; Gorman, 2017). It seems that we are witnessing a revolution of performance management. Deloitte reported that only 12% of the U.S. companies were not planning to rethink their PM systems in 2015. PwC also reported that two-thirds of large companies in the UK are in the process of changing their systems (Cappelli – Tavis, 2016). In a subsequent U.S. study respondents considered PM the most important HR system and agreed that the use and the significance of PM will further increase in the future (Hays – Kearney, 2001; Goodman – French – Battaglio, 2015).

Pioneer Employers

Pioneer companies, which redesigned their PM systems in the last 6 years to boost organizational performance can be divided into three groups: technology compa-

es, professional service firms, and other early adopters in other industries.

Technology companies (Adobe, Microsoft, IBM, Dell, Juniper Systems, Medtronic)

In 2009 Juniper Systems found the classic PM system to be a barrier to its goal of disruptive innovation and it launched a redesigned PM process. Since then however some PM components have changed and evolved based on the feedback of their colleagues and managers. In 2011 Adobe also ended its annual performance reviews and has gone totally numberless but still gives merit increases based on informal assessments. In the same year Medtronic, a developer and manufacturer of medical device technology and therapies, rethought its PM system in order to move away from competitive assessment toward providing real-time performance feedback, coaching and development sessions for its employees. In 2015 IBM, Microsoft and Dell also joined as early followers (Cappelli – Tavis, 2016; Zillman, 2016; Ewenstein, 2016).

Professional service firms (Deloitte, KPMG, PwC, Accenture, Kelly Services)

Kelly Services, which provides workforce solutions and offers a comprehensive array of outsourcing and consulting services, was the first big professional services firm to drop its old PM system in 2011 (Cappelli – Tavis, 2016). After pilot testing in 2013 PwC also discontinued annual review for all its employees, and then Deloitte, KPMG, and Accenture followed suit in 2015 (Buckingham – Goodall, 2015). Given not just the sheer size of these companies, but the fact that they offer management consultancy to many organizations in a broad range of industry sectors, acting as pioneers the choices of these companies are having a huge impact on others. Furthermore, they can also offer HR solutions to their clients later on based on the experiences of their transformation of their PM systems.

Early adopters in other industries (GE, Sears, GAP, Oppenheimer Funds, Eli Lilly, Mitre, Lear)

In order to foster performance at team level and track collaboration Sears and GAP, which is on the top 100 list of largest U.S. retail chains, became also early innovators in their sector (Deloitte, 2017). Customer service now requires frontline and back-office employees to work together to keep shelves stocked and manage customer flow (Cappelli – Tavis, 2016). Even General Electric, which is a longtime role model for traditional PM, backed away from forced ranking because it fostered internal competition and undermined collaboration and reinvented its PM in 2015 (Ewenstein, 2016). It was also reported that Oppenheimer Funds, Lear, Eli Lilly and Mitre have changed their systems (Cappelli – Tavis, 2016; People & Strategy, 2016).

Discussion

In the followings I will summarize the main driving forces and the general patterns of the changes in PM systems introduced between 2012 and 2017 by the sampled multinational companies. Then I will differentiate “competitive” and the “cooperative” approaches of PM systems.

What are the main driving forces?

In this study I apply a strategic contingency perspective that assumes that the alignment between HRM practices and the firm's strategy is associated with the firm's profitability; and the applied HRM practices as a leadership support function meet specific contingency factors and are appropriately configured.

I discuss those variables such as the internal and external environment and the organizational structure that have impact on organizational performance and organizational behaviour.

External situation

There is a rapidly changing, uncertain market environment especially in sales and in labor market. The business need is to prototype more quickly and responding in real time to customer feedback and changes in requirements (Ewenstein, 2016).

Competitive intensity continues to increase in the global market economy. Multinational companies globalize and access new talent at lower costs. Even market leaders can lose their position more easily (Deloitte, 2011). Labor market is booming and employee retention has become critical again (Cappelli – Tavis, 2016). The former, more transactional view of performance turned out to be difficult to support in an era of low inflation and tiny merit-pay budgets. If the inflation rates shoot up or the bonuses are not treated as regular income and singled out for favorable tax treatment, merit based pay comes into focus in appraisal process. In these cases, annual salary increases and bonus payment really can matter and the pressure is on to award more objectively. As a result, accountability can become a higher priority of development for organizations (Cappelli – Tavis, 2016).

When human capital is plentiful, the focus can be on which employee to dismiss, which to retain, and which to reward - and for those purposes, traditional models with the focuses on individual accountability fit well. But when talented employees are in shorter supply, as it is nowadays, developing and coaching people became a greater concern - and each company has to find new ways of meeting that need in order to improve their talent management and people development efforts (Cappelli – Tavis, 2016; Deloitte, 2015).

Emerging technologies - social media, mobile, analytics and cloud - are changing the way people work and interact with each other. Managers who used to engage with employees while communicating face to face are being replaced by remote teams that communicate via e-mail, chat, or Skype. Nowadays new collaboration tools combined with deep analytics enable companies to collect and shift through massive amounts of disparate information to uncover who is doing what and how well they are doing it (Bogar King et al., 2013).

In the knowledge era economy, the special knowledge generating resources required to foster innovation are no longer concentrated geographically and possessed by a single corporation, but rather distributed around the globe through collectives known as value networks.

Internal situation

In knowledge-intensive businesses human assets are the most important resource and the management of these assets, thus HRM becomes crucial.

Organizations that need to become adept at change for managing the complexity of today's businesses pursue to create an open, innovative and collaborative culture with participative management styles. In matrixed or team based organizational structures and flexible working environment (Bogar King et al., 2013) it is up to each individual to take charge of his/her own growth and pursue a career that is right for him/her (People & Strategy, 2016). These organizations encourage people to seek out their roles and managers to support employees as they follow their interests. When self-motivated employees and managers actively engage in performance development behaviors, it has significant positive impact on the outcomes that are important to them individually and to the company collectively as an evolving organization (People & Strategy, 2016). Generation Y and Z employees represent an increasing constituency of digital natives (Meretei, 2017). Social, gaming and mobile technologies from the consumer digital world have risen their level of expectations for work tools that allow for real-time, far-flung collaboration and contextual feedback. Leading companies which tend to attain the new generations of talent are adapting old-school processes and tools to more effectively compete with their competitors (Bogar King et al., 2013). Technology makes transparent goal setting and agile PM easier (Deloitte, 2015), while many companies are able to collect more performance data (e.g. customer feedback, peer reviews, social media comments, operational data) through systems that automate real-time analyses (Ewenstein, 2016).

Organizational structure

Nowadays the nature of work is shifting. Employees can work together from anywhere whether they are off-site, at home or in the field. They are mobile and no longer need to bind together by place. Due to the information technology developments, companies can make it easy for collaboration to happen anywhere and anytime to increase greater workplace flexibility which leads to improved performance and productivity. Teams are frequently formed, dissolved, and reformed time-to-time, based on the ever-changing business needs (Bogar King et al., 2013).

In many organizations the organizational structures became flatter, which promotes employee involvement through decentralized decision-making process, and as a result, employee empowerment and participation are increased. Collaborative network structures within and between firms, matrix, team- and project-organization structures are most suitable for organizations operating in a fast changing and dynamic environment (Bogar King et al., 2013; Rock – Jones, 2015).

Managers need to make it clear to the employees what kind of behaviors and performance is expected by creating tight alignment between the work of the individual and the organization's objectives, that also promotes greater context, commitment, and job satisfaction. There is a shortened time-orientation in business cycles, projects are short-term and tend to change along the way. Jobs became more complex

and require more skills, so it is difficult to set annual goals that is still meaningful a year later (Cappelli – Tavis, 2016).

Based on the "Theory Y" approach of McGregor it is discussed that subordinates should help set their performance goals and assess themselves by receiving feedbacks from the boss (McGregor, 1957). This process would build on the strengths and potential of the employees. However, the drawback of this approach is that doing the process right takes supervisors several days per employee each year (Rock – Jones, 2015). In case of flattened hierarchy structures the number of direct-reports which supervisors had to manage are higher. The employee-supervisor relationship and communication is informal, direct and participative. Hierarchy is established for convenience, superiors are always accessible and rely on individuals and teams for their expertise. Decision-making and information is shared between the different levels of leadership, which increase employee empowerment, participation, and efficiency (Cappelli – Tavis, 2016).

Introduction to the "competitive" and to the "cooperative" approaches

I identified nine features to describe and demonstrate the difference between the so called "traditional approach" and the "emerging trends" of PM systems: time-orientation, goal, focus, direction, objective settings and evaluation, measurement, development, manager's role, and rewarding performance. I name the so called traditional approach as competitive approach and the emerging trend as cooperative approach of PM systems since these represent more the main characteristics of both approaches.

Competitive approach

In this model, business objectives and strategies are cascaded down the organizations, since business goals are easy to articulate and held constant over the course of a year. The competitive models have a clear-cut way of tying rewards to individual contributions and have heavy emphasis on financial rewards and punishments and their end-of-year structure. They hold people accountable for past behavior at the expense of improving current performance and grooming talent for the future, both of which is critical for an organization's long-term survival in a fast-changing environment (Cappelli – Tavis, 2016).

When human capital is plentiful, the focus can be on which employee to dismiss, which to retain, and which to reward - and for those purposes, traditional appraisals with the emphases on individual accountability fit well. It is based on the assumption that some employees are fundamentally more talented than others, since there are fixed personality traits which make certain people better in the job. This is a weakness-based approach, in which the goal of the PM system is to identify and dismiss poor performers and retain and reward those good performers by applying external rewards. Managers prefer hiring rather than internal development to foster competition (Buckingham – Goodall, 2015).

The manager is in the role of the evaluator by following a formalized process and routine: filling out objective setting forms, tracking a process, conducting a formal annual review and assessment (Bogar King et al., 2013). The PM process is strongly determined by a numerical, year-end forced rating sys-

tem and consensus meeting to compare people with one another (Buckingham – Goodall, 2015; Cappelli – Tavis, 2016).

Cooperative approach

In this approach PM closely follows the natural cycle of work. Conversations occur when projects end, milestones are reached, challenges pop up, and that allows people to solve problems in current performance while also developing skills for the future. This requires regular, practically continuous evaluation, informal check-ins, and real-time feedback (Buckingham – Goodall, 2015). These systems by moving away from forced ranking and from appraisal focus on individual accountability makes it easier to foster teamwork (Cappelli – Tavis, 2016).

In this outcome-focused approach employers would rather fuel current and future performance and groom talent for the future via instant feedbacks and time-to-time evaluations than conduct time-consuming annual performance reviews to hold people accountable for past behaviour (Cappelli – Tavis, 2016).

As Generation Y expand to dominate the workforce pioneer organizations are searching for social tools and applications to access in-the-moment feedback from peers, customers, and other stakeholders to promptly increase performance (Bogar King et al., 2013).

Managers take the lead in setting near-term goals and support their team-members as coaches (People & Strategy, 2016; Barry et al., 2014). The assumption is that managers can change the way employees perform through effective coaching and intrinsic rewards such as personal growth and a sense of progress on the job by building on their strengths. The aim is to retain current employees by investing in them through development- and talent programs, rather than hiring human resources from outside the company (Cappelli – Tavis, 2016).

Employee goals may be pegged to specific projects. As projects unfold and tasks change it is difficult to coordinate individual priorities with the goals for the whole company, especially when the business objectives are short-term and must rapidly adapt to market shift.

Companies would rather apply qualitative judgments than numerical ratings. However, many companies (e.g. Deloitte and PwC) are struggling to go entirely without ratings and they are trying a so called “third way”: assigning multiply ratings several times a year. Nevertheless, annual final score serves as a starting point for compensation decisions, not the ending point (Buckingham – Goodall, 2015; Cappelli – Tavis, 2016). With or without ratings, many companies decided to follow shorter evaluation cycles, decentralize goal settings, and determine quantitative and qualitative measurement of contribution, impact, and value (People & Strategy, 2016).

However, those companies changing their systems are still trying to figure out how their new practices will affect the pay-for-performance model, which none of them have explicitly abandoned, they still differentiate rewards and set pay increases accordingly. Employees may receive bonuses after project ends or small weekly bonuses when they are doing good things. Even the evaluation is usually relying on managers’ qualitative judgements rather than numerical ratings.

The cooperative approach emphasizes principles such as collaboration, self-organization, self-direction, and regular reflection on how to work more effectively, with the aim of responding

in real time to customer feedback and changes in requirements. At the same time this approach requires a cultural shift by moving to an informal system where self-motivated employees and managers actively engage in performance development behaviors: direct managers take an active role in coaching and employees take charge of their own growth and drive career conversations throughout the year (Barry et al., 2014) (*Table 2*).

Table 2 Comparison of the “competitive” and the “cooperative” approach

	Competitive	Cooperative
Time–orientation	Accountability for past performance	Fuelling present and future performance
Goal	Identifying and dismissing poor performers, retaining & rewarding good performers (external rewards)	Coaching and mentoring (internal rewards)
Focus	Process–focused	Outcome–focused
Direction	Top–down	Bottom–up
Objective settings & evaluation	Annual cycle, cascading objectives once–a–year reviews	Real business cycle, regular evaluation, frequent, informal check–ins, real–time feedback
Measurement	Numerical, year–end ratings, forced distribution and consensus meeting	Qualitative judgments rather than numerical ratings
Development	Weakness–based Hiring rather than internal development Fostering cooperation	Strength–based Retaining, develop, rather than hiring Fostering competition
Manager’s role	Evaluator	Coach
Rewarding performance	Clear–cut way of tying rewards to individual contribution	Annual final score as a starting point for compensation decisions, small bonuses after project ends

Regarding the practical applications Ikramullah et al. (2016) offers a comprehensive framework for professionals to assess how the stakeholders value the performance appraisal system in each quadrant. What do they value more and put in the first place regarding to the two axis of the competing values framework of effectiveness of a performance appraisal system: internal vs. external and flexibility vs. control focus. Based on the contingency theory the design of an organization and its subsystems must have a proper fit with the environment and its subsystems should be

also consistent. Management can achieve this proper fit by satisfying and balancing internal needs and adapting to environmental circumstances. However, it can happen that the management fails to make a proper diagnosis and implement a new system accordingly. If there is a mismatch between espoused theory and theory-in-use in the organization this can be potentially problematic if the company enforces its espoused theory by implementing a new PM system but the theory-in-use would indicate other models of performance appraisal system (Argyris – Schön, 1978).

At Intel in a two-year pilot, employees got feedback but no formal appraisal scores. Though supervisors could manage to differentiate performance and distribute performance-based pay, the top management returned to use ratings again in order to foster competition and clear outcomes (Cappelli – Tavis, 2016).

Based on contingency theory the elements of the internal environment, the so-called capabilities such as core processes and information technology, origin of the company, scope of activity, organizational size are given in the short-term and they can be changed only in long-term. Nevertheless, it could happen that one or more capabilities of the organization have to be changed in a short period of time which can have an effect on the competing values. In this case the implementation of a new PM system can foster the necessary change, however because of the big difference between the espoused theory and the theory-in-use of the organization, there is a jeopardy that after its implementation the system fails and the management returns to the old-system. The largest medical technology company, Medtronic, which gave up ratings several years ago, is reviving them after acquiring Ireland-based Covidien, which has different values and views of performance management (Cappelli – Tavis, 2016).

Others instead of reverting to the previous system try to seek middle ground. At PwC managers do not give a single rating annually, but employees get scores on five competencies along with other development feedback. The opposition to going completely numberless came from employees, especially those on a partner track, who want to know how they are improving (Eckersley, 2016). At New York Life, after the company ceased ratings, the merit-pay increases started to be interpreted as performance scores, which became known as “shadow ratings” and started to have an effect on the talent management process. This led the company to go back to its formal appraisal while keeping other changes such as quarterly conversations (Cappelli – Tavis, 2016). These show that the management not only has to make a proper diagnosis and implement a PM system accordingly, but it also has to review the fit with the environment and its subsystems time-to-time. By developing a tool the organization can explore those areas which need improvements.

All of the competing values may be present simultaneously in an effective performance appraisal system, but much more likely, there is a trade-off among these values. Some organizations may be effective when they are changing, adaptable and organic. In this case the cooperative type of PM system can support the organization better. If this

adaptation and changing capability comes from the harmony in the internal characteristics of the organization the cooperative system may fit better to the human relations model. If the changing capability of the organization is rather derived from the interaction or the competition with other organizations in the market, the characteristic of the cooperative PM system can be compared more to the elements of open system model.

However some companies may be effective if they are stable, predictable and mechanistic. In line with this a competitive type of PM system can reinforce these capabilities of the organization better. If these characteristics are derived from capabilities coming from possessing harmony in the process internally, the competitive PM system may be more similar to the internal process model. If the organizations should rather focus on the external environment the competitive PM system may share more common traits with the rational goal model. The competitive system tends to focus more on the areas of the planning, goal-setting and the internal process-related factors, while the cooperative models shift the emphasis toward flexibility, adaptation, training, development and participation.

How can PM system be improved?

The effectiveness of PM system does not depend on whether it is similar either to the cooperative or the competitive model, but how the PM system is in line with the four criteria of the effectiveness and how the key stakeholders react to it and perceive its fairness in practice. According to Ikramullah et al. (2016) the utilization, qualitative and quantitative criterion is incomplete unless they are linked to the outcome criterion, that is the PM system can be considered effective when its key stakeholders top, middle and line management and employees consider it useful. The literature highlights that fairness perceptions are also one of the employees' reactions to PM system, and are related to the success and failure of system. In fact, when we are focusing on the qualitative criterion we foster the effectiveness of PM system regarding not just the outcome criterion but the utilization and quantitative criterion as well.

First, it is important that the development of a new system should start with a clear division of responsibilities between HR and the management. HR has responsibility for providing a framework with its expertise and enabling all the participants to build, use and review the system time to time. Participation and involvement of users in the design of the measurement tools and the components of the PM system is necessary (Guest – Bos-Nehles, 2013; Longenecker – Fink, 2017; Gorman et al., 2017).

Secondly, HR should provide efficient support for top management to make a proper diagnosis and make decisions on the key elements (main purpose and features) of the new PM system according to the comprehensive framework for effectiveness of PM system in order to ensure that PM is designed in line with the organizational situation and business model. However after the system was set up continuous follow-up, monitoring and revision accordingly are also important (Longenecker – Fink, 2017).

Thirdly, one of its main success factors of effective PM system is its implementation. There is a difference between the presence of HR practice, that shows that the practice

was once introduced and its quality, that reflects how it was implemented. Barney (2001) recognizes that ‘the ability to implement strategies is, by itself, a resource that can be a source of competitive advantage’ (Barney, 2001; p. 54 in Guest – Bos–Nehles, 2013). Becker and Huselid (2006) also argue that the effective HR strategy implementation as a key mediating variable between the HR architecture and firm performance (Guest – Bos–Nehles, 2013).

In fair implementation of PM practices the mediating role of line managers and HR support is important. In the followings I formulate some specific suggestions by which the effectiveness of PM presumable may be improved.

On the one hand, line managers may have a strong effect on employee perceptions, attitudes and behavior (Hartog et al., 2004; Guest – Bos–Nehles, 2013). The quality of implementation may vary because of time pressures and competing priorities or lack of knowledge, capability or even lack of belief in the likelihood that devoting time and energy to quality implementation will result in any pay-offs. However, in the right circumstances line managers will accept their HR responsibilities and implement HR practices effectively (Guest – Bos–Nehles, 2013). Line managers may need to be involved in the implementation and well trained to enable them to support their team as a coach, to share information, to set challenging yet attainable objectives, to track performance and give feedback frequently and to make a proper evaluation and create a climate in which people feel that they are treated fairly and high performance is stressed (Longenecker – Fink, 2017).

On the other hand HR role is to help in ensuring that what is implemented and experienced is aligned to what was intended by the top management (Farndale – Kelliher, 2013). It is especially important in headquarter-subsidiaries relations where other factors such as national cultures and legal context can play a part. In practice HR may help the management in creating an effective bottom-up and top-down communication flow to ensure that all the information was conveyed about the main purposes, the process and system, the consequences and the assessment tools to the participants (Gerákné, 2008b). HR also may provide trainings for employees for adopting an assertive behavior to express their opinions and emotions and to cultivate a supportive organizational culture where employees can raise their voices, tell their opinions about the evaluation, and that is taken into account (Gerákné, 2008b; Guest – Bos–Nehles, 2013). When employees perceive that the intended goals of HR practices are cost-driven, control-focused and unlikely to enhance employee well-being, they have lower levels of satisfaction and commitment. Lack of clarity and consistency is also more likely to cause varying attributions and responses among employees (Guest – Bos–Nehles, 2013).

HR is responsible for connecting the PM with other HR systems and processes and the results of the performance appraisal system serve not just valuable input in the decision making of compensation and benefits, succession planning, talent management, training and development (Gerákné, 2008b), but these links are also transparent for the employees.

Further research directions

PM are complicated activities involving a number of complex individual, procedural and organizational factors. In order to strengthen the credibility of PM practices it is necessary to find the missing link between individual-level performance and firm-level performance and to study the phenomenon of “reversed causality”. It has always been assumed that increasing individual-level performance would lead to improvements in firm-level performance, but the researchers have failed to show clear evidence to prove the correlation (DeNisi – Murphy, 2017; Den Hartog et al., 2004). Regarding reversed causality some experts argue that the organizational success (e.g. profitability) could increase the willingness of top management to invest in HR practices rather than vica versa, and high organizational performance can also affect employees’ commitment, trust, and motivation as much as the other way around (Den Hartog, 2004).

Like every HRM practices, PM systems can be seen as “signals” of the organization’s intentions towards its employees and are interpreted as fair or unfair by each employees individually. This means that, employees do not automatically perceive these practices similarly or react to them in a similar manner (Den Hartog et al., 2004). There should be more research focus on the employees’ reactions to PM practices, since employees’ commitment and performance depends on their perception and evaluation of these practices, which is based on employee’s previous experience, their beliefs, comparison to others (Guest, 1999 in Den Hartog et al., 2004) or their attributional styles (Harvey – Martinko, 2010). In order to study the antecedents and consequences of justice perception and different individual reactions to PM system and fairness perceptions and to bridge the gap between research and practice, more research is required, especially which focus on in real organizational settings by involving processes and outcomes with all stakeholders by applying more qualitative methods.

We need to improve our understandings about what determines effective HR implementation. Case studies in implementation by taking the middle management’s view point could support PM practices not just to be present, but of a quality to be potentially effective (Guest – Bos–Nehles, 2013).

References

- Aguinis, H. – Joo, H. – Gottfredson, R. K. (2011): Why we hate performance management – and why we should love it. *Business Horizons*, 54 (6), p. 503–507. doi:10.1016/j.bushor.2011.06.001
- Argyris, C. – Schön, D. A. (1978): *Organizational learning: A theory of action perspective*. Reading, MA: Addison–Wesley Publishing Company
- Bakacsi, Gy. – Bokor, A. – Császár, Cs. – Gelei, A. – Kováts, K. – Takács, S. (1999): *Stratégiai emberi erőforrás menedzsment*. Budapest: Közgazdasági és Jogi Könyvkiadó
- Barrier, M. (1998): Reviewing the annual review. *Nation’s Business*, Volume 86., Issue 9 September 1998, p. 32–35.
- Barry, L. – Garr, S. – Liakopoulos, A. (2014): Performance management is broken: Replace “rank and yank”

with coaching and development. In: *Global Human Capital Trends 2014: Engaging the 21st-century workforce*, 2014, pp. 45–51. Retrieved 31 05 2017 from: <https://documents.dupress.deloitte.com/HCTrends2014>

Berkics, M. (2008): A társadalmi viszonyok és a társadalomban zajló versengés igazságosságának észlelése, PHD.

Bies, R. J. – Moag, J. S. (1986): Interactional justice: Communication criteria of fairness. In: *Lewicki, R. J. – Sheppard, B. H. – Bazerman, M. H.* (eds.): *Research on Negotiations in Organizations*. Vol. 1, Greenwich, CT: JAI Press, pp. 43–55.

Biron, M. – Farndale, E. – Paauwe, J. (2011): Performance management effectiveness: lessons from world-leading firms. *The International Journal of Human Resource Management*, Vol. 22, No. 6, pp. 1294–1311. doi.org/10.1080/09585192.2011.559100.

Bogar King, E. – Roddy, D. – Hodson, T. (2013): 2013 Human Capital Trends report - The Performance Management Puzzle Read. Deloitte. 2013. Retrieved 31 05 2017 from: <https://www2.deloitte.com/be/en/pages/human-capital/articles/performance-management-puzzle.html>

Bokor, A. (2011): A IV. HR-tükör kutatás legfontosabb eredményei – HR a válság idején. *Vezetéstudomány/Budapest Management Review*, 42 (4), pp. 2–18.

Boon, C. – Den Hartog, D. N. – Boselie, P. – Paauwe, J. (2011): The relationship between perceptions of HR practices and employee outcomes: examining the role of person-organisation and person-job fit. *The International Journal of Human Resource Management*, 22:1, pp. 138–162., doi: 10.1080/09585192.2011.538978

Buckingham, M. – Goodall, A. (2015): Reinventing Performance Management: How one company is rethinking peer feedback and the annual review, and trying to design a system to fuel improvement. *Harvard Business Review*, 93(4), pp. 40–50.

Cappelli, P. – Tavis, A. (2016): The Performance Management Revolution: The focus is shifting from accountability to learning. *Harvard Business Review*, October, pp. 57–67. Retrieved: 31 05 2017 from <https://hbr.org/2016/10/the-performance-management-revolution>.

Conlon, D. E. – Meyer, C. J. – Nowakowski, J. M. (2005): How does organizational justice affect performance, withdrawal and counterproductive behavior? In: *Greenberg, J. – Colquitt, J. A.* (2005): *Handbook of Organizational Justice*, Lawrence Erlbaum Associates, Inc. Publishers, pp. 301–327.

Colquitt, J. A. (2001): On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology*, 86, pp. 386–400. <http://dx.doi.org/10.1037/0021-9010.86.3.386>.

Cook, K. – Hegtvedt, K. (1983): Distributive Justice, Equity, and Equality. *Annual Review of Sociology*, 9, pp. 217–241. Retrieved: 31 05 2018 from <http://www.jstor.org/stable/2946064>

Cropanzano, R. – Goldman, B. M. – Benson III, L. (2005): Organizational Justice. In: *Barling, J. – Kelloway, E. K. – Frone, M. R.* (2005): *Handbook of Work Stress*. Thousand Oaks: Sage Publications Inc., pp. 63–87.

Cropanzano, R. – Bowen, D. E. – Gilliland S. W. (2007): The management of organizational justice. *Academy of Management Perspectives*, November 1, 21(4), pp. 34–48. <https://doi.org/10.5465/amp.2007.27895338>

Deloitte (2011): Deloitte Centre for the Edge (2011). The 2011 shift index: Measuring the forces of long-term change. Deloitte Center for the Edge. Retrieved: 31 05 2017 from: <https://www2.deloitte.com/content/dam/Deloitte/nl/Documents/center-for-the-edge/deloitte-nl-center-for-the-edge-shift-index.pdf>

Deloitte (2015): *Global Human Capital Trends 2015: Leading in the new world of work*. Retrieved from <https://www2.deloitte.com/au/en/pages/human-capital/articles/global-human-capital-trends-2015-leading-new-world-work.html>

Deloitte (2017): *Global Powers of Retailing 2017: The art and science of customers*. Retrieved: 31 05 2018 from: <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/consumer-industrial-products/gx-cip-2017-global-powers-of-retailing.pdf>

Den Hartog, D. N. – Boselie, P. – Paauwe, J. (2004): Performance Management: A Model and Research Agenda. *Applied Psychology*, 53, pp. 556–569. doi:10.1111/j.1464-0597.2004.00188.x

DeNisi, A. S. – Pritchard, R. D. (2006): Performance Appraisal, Performance Management and Improving Individual Performance: A Motivational Framework. *Management & Organization Review*, 2(2), pp. 253–277. <https://doi.org/10.1111/j.1740-8784.2006.00042.x>

DeNisi, A. S. – Murphy, K. R. (2017): Performance appraisal and performance management: 100 years of progress? *Journal of Applied Psychology*, Mar, 102(3), pp. 421–433. doi:10.1037/apl0000085.

Eckersley, D. (2016): Interview about „Redefining performance management. In: HCTV, Available at: <https://www.hcamag.com/tv/redefining-performance-management-at-pwc-215254.aspx>

Erdogan, B. (2002): Antecedents and consequences of justice perceptions in performance appraisals. *Human Resource Management Review*, 12, pp. 555–578. [http://dx.doi.org/10.1016/S1053-4822\(02\)00070-0](http://dx.doi.org/10.1016/S1053-4822(02)00070-0).

Ewenstein, B. – Hancock, B. – Komm, A. (2016): Ahead of the curve: The future of performance management. *McKinsey Quarterly*, (2), pp. 64–73.

Farndale, E. – Hope-Hailey, V. – Kelliher, C. (2011): High commitment performance management: the roles of justice and trust. *Personnel Review*, 40, 1, pp. 5–23. <https://doi.org/10.1108/00483481111095492>.

Farndale, E. – Kelliher, C. (2013): Implementing Performance Appraisal: Exploring the Employee Experience. *Human Resource Management*, 52, 6, pp. 879–897. <https://doi.org/10.1002/hrm.21575>.

Gerákné Krasz, K. (2008a): A teljesítményértékelés igazságossága a szervezeti teljesítményértékelés észlelt igazságossága a szervezeti kultúra függvényében. PhD-értekezés. Budapest: Eötvös Loránd Tudományegyetem

Gerákné Krasz, K. (2008b): Hogyan lehet igazságos a teljesítményértékelés. *Munkaügyi Szemle*, 52:(2), pp. 43–49.

Goodman, D. – French, P. E. – Battaglio, Jr. R. P. (2015): Local Government Human Resource Management Past, Present, and Future: Revisiting Hays and Kearney's Anticipated Changes a Decade Later. *The American Review of Public Administration*, 45(2), pp. 135–152. <https://doi.org/10.1177/0275074013486179>.

Gorman, C. A. – Meriac, J. P. – Roch, S. G. – Ray, J. L. – Gamble, J. S. (2017): An exploratory study of current performance management practices: Human resource executives' perspectives. *International Journal of Selection and Assessment*, 25(2), pp. 193–202. <http://dx.doi.org/10.1111/ijsa.12172>

Greenberg, J. – Bies, J. R. (1992): Establishing the role of empirical studies of organizational justice in philosophical inquiries into business ethics. *Journal of Business Ethics*, Vol. 11, Issue 5–6., pp. 433–444.

Guest, D. E. – Bos-Nehles, A. C. (2013): HRM and performance: The role of effective implementation. In: J. Paauwe, J. – Guest, D. E. – Wright, P. W. (eds.): *HRM and performance: Achievements and challenges*. Chichester: Wiley, pp. 79 – 96.

Harvey, P. – Martinko, M. J. (2010): Attribution Theory and Motivation. In: Chapter 7, Burlington: Jones and Bartlett Publishers, pp. 147-164.

Hays, S. W. – Kearney, R. C. (2001): Anticipated Changes in Human Resource Management: Views from the Field. *Public Administration Review*, 61., pp. 585–597. [doi:10.1111/0033-3352.00129](https://doi.org/10.1111/0033-3352.00129).

Ikramullah, M. – Van Prooijen, J. – Iqbal, M. – Ul-Hassan, F. (2016): Effectiveness of performance appraisal. *Personnel Review*, 45, 2, pp. 334–352. <http://dx.doi.org/10.1108/PR-07-2014-0164>.

Iqbal, M. Z. – Akbar, S. – Budhwar, P. (2015): Effectiveness of performance appraisal: an integrated framework. *International Journal of Management Reviews*, Vol. 17 No. 4, pp. 510–533. <https://doi.org/10.1111/ijmr.12050>.

Kinley, N. (2016): The end of performance management: sorting the facts from the hype. *Strategic HR Review*, Vol. 15 Iss: 2, pp.90 – 94. <https://doi.org/10.1108/SHR-09-2015-0081>.

Lawrence, P. – Lorsch, J. (1967): Differentiation and integration in complex organizations. *Administrative Science Quarterly*, 12(1), pp. 1–30.

Longenecker, C. – Fink, L. (2017): Lessons for improving your formal performance appraisal process. *Strategic HR Review*, Vol. 16 Issue: 1, pp.32–38. <https://doi.org/10.1108/SHR-11-2016-0096>.

McGregor, D. (1957): The Human Side of Enterprise. *Management Review*, 46 (11), pp. 22–28.

Meretei, B. (2017): Generációs különbségek a munkahelyen – szakirodalmi áttekintés. *Vezetéstudomány/Budapest Management Review*, 48 (10), pp. 10–18. DOI <https://doi.org/10.14267/VEZTUD.2017.10.02>.

Murphy, K. R. – DeNisi, A. (2008): A model of the performance appraisal process. In: Varma, A. – Budhwar, P. – DeNisi, A. (eds.): *Performance management systems around the globe*. London, UK: Routledge, pp. 81-96.

People & Strategy (2016): Riding the Performance Management Rollercoaster. *People & Strategy*, 39(3), pp. 8–14. The Free Library, Conference notes, People & Strategy. Vol. 39, issue 3. Retrieved 31 05 2017 from: [https://www.thefreelibrary.com/Riding the performance management rollercoaster.-a0458159871](https://www.thefreelibrary.com/Riding+the+performance+management+rollercoaster.-a0458159871)

Rock, D. – Jones, B. (2015): Why More and More Companies Are Ditching Performance Ratings. *Harvard Business Review Digital Articles*, pp. 2–4. Retrieved from <https://hbr.org/2015/09/why-more-and-more-companies-are-ditching-performance-ratings>.

Sass, J. (2011): Szervezeti érzelmek és szervezeti bizalom. Budapest: Budapesti Corvinus Egyetem

Szilas, R. F. (2014): A szervezeti igazságosság hatása a munkahelyi stressz kialakulásának folyamatára. *Munkaügyi Szemle*, Online 2014/1, pp. 56–65.

Takács, S. (2001): A vezetők és beosztottak céljai a teljesítményértékelés során – egy hazai felmérés eredményei. *Vezetéstudomány*, 11, pp. 31–41.

Zillman, C. (2017): IBM Is Blowing Up Its Annual Performance Review 2016. Retrieved 31 05 2018 from: <http://fortune.com/2016/02/01/ibm-employee-performance-reviews/>

Walsh, B. M. (2003): Perceived fairness of and satisfaction with employee performance appraisal. Dissertation. Louisiana State University.

WorldatWork and Sibson Consulting (2010): Study on the State of Performance Management. Retrieved: 31 05 2017 from <https://www.worldatwork.org/docs/research-and-surveys/2010-study-on-the-state-of-performance-management.pdf>.

THE DARK SIDE OF GENDER EQUALITY SCHEMES IN MANAGEMENT – A DEEP DIVE INTO A GERMAN AUTO MANUFACTURER

Despite the wide array of corporate programmes and the increased attention to fight gender inequality issues, efforts have brought about only timid results, in particular in management (Catalyst, 2018). What reason account for the stalled progress and what can be done?

By examining gender equality interventions in a masculine organisation; and mobilizing men's and women's perceptions related to gender equality in management, this article seeks to provide deeper insights on the mechanisms of gender equality change in organisation. A qualitative case study comprising document analysis and semi-structured interviews was conducted at an automotive company's headquarter between 2012 and 2015 in Germany and relies on an innovative combination of two analytical frameworks elaborated by Ely and Meyerson (2000) and Rao and Kelleher (2005).

The study shows the limits of formal and systemic gender policy in organisation for it leaves the deep ingrained informal values untouched. The interviewed female managers tend to not subscribe to these programmes. Male managers express resentment against not only the corporate actions but also against gender quota. Both male and female managers firmly believe in the meritocratic system and take for granted the gendered order of their organisation.

Keywords: gender, diversity, management, organisation, equal opportunity

At both the top and the bottom of the employment pyramid, women continue to lag behind men in terms of pay and authority, despite closing gender gaps in educational attainment and workplace seniority.

Consequently, governments in Europe have taken radical action to tackle these persistent disparities, pushing thus many large-scale organisations to implement a variety of actions aiming at increasing the number of women in their management ranks. Are these programmes a real chance or a trap for women? How are they designed? How do male managers view these programmes? How do they affect the gender relations in the workplace and in particular in management?

Recent scholarship shows that while there have been successes in fighting overt discrimination and gender inequalities in the organisations, equality actions in organisations are often marginalized, with the result that ownership and responsibility for equality on the part of all employees is low, and the impact of equality action on the whole organization is limited (Hearn et al., 2010).

In this context, this paper attempts to contribute to a better understanding of what Radjavi (2012) calls “the social life” of gender policies. Radjavi (2012) argues that one's approach to achieving gender equity in management does not suit all countries, organisations, or even business units within organisations. Hence gender equality schemes in management are a product of a certain time and a certain place. Following this line of argument, this paper bridges the macro-, the meso- and the micro levels by using a case study in a German automotive company. In the recent years, the German, if not the European automobile sector at large, has been sharply criticized for remaining a masculine corporate environment, despite gender equality measures.

This article examines thus the local organising of gender equity and takes into account (1) the environmental factors influencing the design of these actions (macro-level); (2) re-

veals discrepancies or matches between the espoused theoretical formulations and the practice of gender equality in the German automotive company (meso-level), and (3) directs attention on the voices of female and male managers working in the selected German automotive company (micro-level).

The rest of the paper is organised as follows: the next section reviews the literature, on advancing gender equality change in the organisation and sets the theoretical framework informing the study. The second section offers an overview of the gender equality context in Germany for its plays a key role when designing organisational gender equality schemes. The third section outlines the methodology used in this research. The fourth section presents and discusses the key findings. The paper ends with reflections for further research.

Theoretical background Gender work and organisation

The field of “gendered organisations studies” has expanded over the last decades and explored the different and often hidden ways women are subordinated (Acker, 1990, 1992; Wajcman, 1998; Connell, 2002; Gherardi – Poggio 2007; Calás – Smircich, 2006; 2009; Lewis – Simpsons, 2010; Hanappi-Egger – Eberherr, 2016). Moreover it criticized the way organisational and management studies just ignored the question of gender (Acker, 1992), maintaining thus crying disparities and hindering access to opportunities and resources in the organisation.

One starting point to explain this paradox is Acker's contribution (2006) which argues that gender is a constitutive and organizing principle of every organization and reflects wider societal inequalities. This means that companies wishing to tackle gender inequality nonetheless continue to reproduce inequalities unconsciously because the whole organization of society is already ‘gendered’. In other words, *the gender substructure of organizations*

(Acker, 1992, p. 252.) is inherently linked to *the gender relations in other parts of the society* (Acker, 1992, p. 259).

Acker locates the gender substructure as its name indicates, in hidden gender displays and processes perpetuating gender asymmetry for that they are viewed and disseminated as gender neutral or natural, hence taken for granted by the individuals in the organisation. While overt gender practices such as masculine work culture are easy to detect, gender as structural instrument of stratification may be deeply hidden in organizational processes. The outcomes are covered by rhetoric of objectivity considered universal. Hence, *the gendered substructure* of an organisation as it is coined by Acker (1990) is located in the arrangement of work, in the rules prescribing behaviour, and in the relations linking work life to social life. Acker (1992) stresses the linkage between the public and private sphere enacted in the figure of the organisation.

Along this differentiation, the gendered substructure creates two polarised and mutually exclusive types of workers embodied by alternatively by men and women. Men enact the *ideal worker* who fits in the organisational mould and is active in the valued public sphere. Women are at best denigrated in the public sphere, or confined in the private arena. They have other expectations to comply with, such as childbearing. Following this line of argument, the exclusion of women is crucial to ensure the privilege of men. Modern organisations, managerial jobs and successful careers developed on the assumption that workers have no private commitments, organisations value a form of professional commitment that is impossible or with sacrifices for women to attain (Acker, 1990, 1992; Rao – Kellerher, 1999).

By understanding the gender substructure of an organisation, collective and comprehensive actions for gender equality can be better formulated, can dispute existing order and have more sustainable effects. Similarly, Britton (2000) stresses the importance of contextualising the *gendered* processes in order to efficiently tackle the sources of inequality, destabilise the gender substructure and bring about substantial organisational change.

Likewise, Fagenson's (1993) *Gender Organisation Systems* approach (GOS) argues that individuals and organisation cannot be understood separately from the society or culture in which they function. Fagenson (1993) posits that the person and organisation centred perspectives are insufficient to fully explain the low representation of women in managerial ranks. The actual situation of women in management is the result of complex interactions between various determinants, such as individual behaviour, organisational policies, societal beliefs and governmental regulations. This also explains why the situation of women in management varies greatly between countries.

Hence, the present study follows the assumptions of GOS approach. Behaviour and attitudes in organisations are the result of the continuous and fluctuant interaction between person characteristics (gender, but also race, age, class...), work situations, organisational structures and practice and the surrounding social systems. This statement reminds Acker's concept of gender substructure linking private and public, and the gendered processes

having impact on structural, symbolic, individual and interactional dimensions. All factors such as characteristics of people, work and organisational situations and social systems not only jointly influence women in management, but are to be viewed as intertwined determinants of women's career evolution in management positions.

Hence, there is among feminists a common consensus about the key role of institutions when studying gender (in) equality (Acker, 1990; Fagenson, 1993; Rao – Kelleher, 2003). Rao and Kelleher (2003) precise that institutions differ from "organisations", for they are constituted of rules (formal and informal) maintaining women's positions in societies.

According to Waylen (2014) changing institutions is therefore a fundamental part of lessening gender inequality. The gender dynamics of institutions are often the result of political compromise, the manifestation of existing power relations. Many institutional rules in Europe are now formally gender neutral. For instance non-discrimination decrees on employment, political participation and education are now well established in the European nations, but a huge array of informal rules about gender, such as dress codes and the sexual division of labour, remain. Waylen argues that gendered informal rules interact and co-exist with formal rules, informal institutions often pass unnoticed as they run in parallel to formal rules. The mixture of informal and formal rules are often part of the definition of gender equality initiatives in organisation.

Notions of gender equality

In order to better grasp the notion of gender equality, Judy Wajcman (1998) in her book on gender and management in the UK provides a review of the historical development of the concept of equal opportunity policies examining both their theoretical and practical background, and their consequences. Her investigation is based on a comparative analysis of male and female senior managers in the UK headquarters of 5 multinational corporations operating in high technology sectors. She gives a detailed overview about two different approaches, the first based on sameness and the second on the notion of difference. She claims that equal opportunity actions in the form they currently bear "draw mostly on the equal treatment/sameness notion of equality" (Wajcman, 1998, p. 16.).

The major problematic is that women are always related to men, designated as deviant from the reference men, it ignores the fact that women are situated differently; this very difference causes the women to be penalized. In a case study approach to examine the interaction between formal equal opportunity employment policies and the extent to which organisational processes continue to obstruct women's career advancement, Wajcman (1999) observed that the construction of managerial job remains universally male. The very concept of managerial career with its hierarchical model of continuous service and regular promotion progress is gendered. She concluded that "to achieve positions of power, women must accommodate themselves to the organization, not the other way around ... Even after two decades of equal opportunity policies, women are still expected to "manage like a man" (Wajcman, 1998, p. 160.).

Whereas the current equal opportunities initiatives draw largely on the notion of equal treatment/sameness, which mean assimilation to a pre-existing male norm, recent attempts to accommodate women's needs and ensure same opportunities in the workplace show the limitations of the model and the need for further approach of gender equality.

This movement towards new conceptualisation of gender equality is labelled by Holvion and Kamp (2009) as *Managing Diversity*". At the heart is the idea that differences should be recognized rather than denied or diluted (Liff – Wajcman, 1996). There is a move away from the idea that different groups should be assimilated to meet an organizational norm. Difference is thus viewed positively (Liff – Wajcman, 1996). However, in some circumstances then, rather than being empowering, the 'difference' or diversity approach can be disempowering, dissolving collective identity and strength, in particular women's voices through a focus on diversity and inclusion agenda (Broadbridge – Simpson, 2011). One argument is that women may be seen as less attractive employees if their needs are stressed. Another relevant point is that men may see women as benefiting of special treatment; this will lead to resentment (Hearn, 2012).

Analytical framework: Fourfold framework

In order to make sense of the gender equality schemes in the German company, the "*fourfold framework*" of gender equality change in organisation elaborated by Ely and Meyerson (2000) capturing the multifaceted dimension about gender issues in the workplace serves here as main analytical tool for conducting the present study. Indeed, Ely and Meyerson's (2000) and followed by Fletcher and Ely's (2003) empirical based research led to the elaboration of four approaches or "frames" for understanding what gender is and why gender based inequality in organisational setting persists. According to this "*fourfold framework*", Ely and Meyerson argue that the first three frames are the most used approach to achieve gender equality in organisations nowadays.

Within the frame "*Fix the Women*" differences of socialisation and skills are the cause of gender issues, women need to be trained to do "as good as men". The "*Equal Opportunity*" frame is essentially policy based and aims at correcting asymmetry in terms of outcomes by reducing the barriers women have to overcome. Formalised hiring procedure, neutral job description and differentiated targets are typical measures under this frame. Alternatively the frame "*Celebrate the Difference*" calls for the acceptance of diverse standpoints, and in particular, the appreciation of feminine attributes of management such as inclusiveness and collaboration.

While interventions within these frames have proven significant gains for women, the overall progress is limited. The major problem lies in the fact that women are located as source of gender inequality, this view of gender cor-

responds to the essential differential assigned to men and women. Structures and processes remain unquestioned.

According to Ely and Meyerson (2000b), the fourth frame instead provides a more complex approach to understanding and conceptualizing gender. The "*Revise the work culture*" frame implies the change of deep structure of gender beliefs and unconscious bias that pervade every layer of the organisation and maintain the unequal gender order (Meyerson – Kolb, 2000). Among others, the fourth frame implies the dismantling of dominant discourse of masculinity underpinning managerial and organisational practices.

Drawing directly on the fourfold frame approach presented above, Rao and Kelleher's (1999, 2005) comprehensive work on organisational change in terms of gender equality completes Ely and Meyerson's fourfold framework. As a result, the four frames can be further categorised within four range of actions and impacts; whether it targets formal or informal structures and whether it achieves individual or systemic change. With the combination of both analytical frameworks, the analysis of gender equality schemes is improved in terms of accuracy and practicability, for it enables the identification of potential area of change and goes beyond the sole description of gendered barriers. Acker's (1990) gender substructure and Fagenson's (1993) GOS theory remain of paramount importance to examine a gendered organisation and understand women's position in management. These theories are embedded in the analytical framework (see Figure 1. *Multi-layered theoretical framework*). The key line of inquiry in this article is to understand in a context dominated by the gender cage (Hanappi-Egger – Eberherr, 2016), how gender equality programmes in management are located and perceived in the selected German organisation.

Gender context in Germany

Socio-economic context for gender equality

As political, economic and institutional contexts are likely to account for various models of gender equality in organizations (Acker, 2006; Tatli et al., 2012), it is crucial to briefly present the economic and social factors as well as the regulations regarding gender in Germany. An overview of the situation of women in the German automotive sector is provided.

The gender context in Germany is characterized by a paradoxical situation. While the general participation rate of women in the German labour market at the time of study was high (67.7% vs 77.3% for men)¹, largely explained by the push effect of the high rate of female employees working part-time (45,1 vs. 31.6% EU-27 average), the unadjusted gender pay gap exceeds the EU-27 average significantly. Indeed, in Germany, women earned 23 % less than men in 2013, the third biggest in Europe according to Eurostat. In addition, the general participation of women after childbirth drops drastically, which shows that child rearing still affects women's employment patterns.

¹ Source for statistical data (unless stated otherwise) Eurostat Labour Force Survey LFS 2013 (data from 2012).

The current work context in Germany displays entrenched gender inequalities. This is reflected in a plethora of negative and disproportionate expectations for women to reconcile household and work tasks, persistent gender-based earnings differentials, sex typing of jobs, women's underrepresentation in managerial positions (Cooke, 2007).

This phenomenon can be rooted to the historical development in Germany since the World War II, by the fact that Germany is more conservative socially than other western countries (Holst, 2010). However, the reforms adopted by Germany since the reunification, and in particular after 2005, represent a radical departure from traditional norms (Fagnani – Math, 2007). Income related paid parental leave (*Elterngeld*) has been implemented, childcare facilities have been extended and since August 2013, a legal entitlement to public childcare for children more than one year old has been introduced. In 2016 gender quota came into force for German companies.

But real progress has been hindered by the institutional framework which still remains very ambiguous and inconsistent as regards the role of women (Weinkopf, 2014). In fact, in recent years the duration of financial support by the husband after divorce has been reduced and mothers are expected to take up paid work earlier than before. Joint taxation for married couples is under debate and the particular German institution of mini-jobs is assessed as rather outdated.

Women in the German automobile industry

The automotive industry is the largest industry sector in Germany. In 2013, the automobile sector recorded a turnover of EUR 361 billion – around 20 percent of total German industry revenue. The automobile industry is one of the largest employers in Germany, with a workforce of around 756,000, 1/3rd of all manufacturing jobs in Germany (VDA, 2013). Yet only 14% of the overall workforce is comprised of women (auto manufacturers and suppliers); at the auto manufacturers² only 12% of the jobs were held by women. The German automotive industry is a male bastion. Women's income is approximately 9% to 14% lower than men's income. The difference is sharper at the bottom and the top ends of the employment pyramid, suggesting the existence of what the literature calls the „sticky floor” and „the glass ceiling” effects. The relatively high salaries in the automotive sector compared to other industries maintain the „breadwinner model”: men work while their wives or partners work less hours, in a household with children under the age of 18. As a result, the part time model is preferred by female employees. 2/3 of the part time workers are women. The temporary contract is also another growing type of employment among women in the sector. Temporary and part time roles may offer more flexibility for women to fulfill their caring responsibilities seeing the lack of infrastructure and meet social expectations but their precarious status may put them at a poverty risk in the long run (i.e. pensions...).

Despite the effort to motivate women to choose a career in the automotive field, statistics indicate a lack of sustainable change over the past years so that the number of female experts in the automotive organisations remains low (Kurz, 2006). The search for highly qualified professionals may constitute a chance for women, which privileges young graduates at an entry level only; they do not tackle the issue of the “leaking pipeline” and the gendered status quo of the organisation. In fact, only 18.3% of managerial positions are held by women. The share of women in executive and supervisory boards is even lower with only 5%³. Women with mid-level qualifications in particular in assistance and administrative functions have little opportunity for advancement: they gravitate to traditional female jobs in the peripheral divisions such as Human Resources, Marketing or Public Relations, thus reinforcing the strong gendered horizontal segregation. Very few instead elect for roles in Research and Development, Technical Development or Finance & Controlling, divisions where the management talent pool is selected.

Whereas interventions striving to achieve more gender equality have been introduced in the industry for more than two decades, mainly under the continuous interactions with the trade unions, the integration of women into the male dominated units and the gendered hierarchy show little impact on the deep anchored gender discrimination practices (Kurz, 2006).

Kurz indicates a double sided trend in the automotive industry; namely a rampant precarisation and an academisation of women's employment patterns which impede the design and implementation of efficient gender equality measures. In addition, due to the low number of female employees viewed as “quantité négligeable” in the sector, there is little incentive for the automotive organisations to engage in change.

Methodology

The present German company was selected for it prides itself on having a good equal opportunity policy to investigate how men and women are faring in this best practice company.

For this purpose, a qualitative case study approach comprising the analysis of company documents and semi-structured interviews was used for it takes into account the social context surrounding the phenomenon under study (Fagenson, 1993; Stake, 2000; Yin, 2009; Waylen, 2014). Thereafter, the case study enabled the deep dive into the context and the object of study, contributing to a holistic understanding of gender equality dynamics within its social context (Stake, 2000; Yin, 2009).

The goal of the company document analysis was two-fold: (1) to draw organisational practices within their context; (2) to describe, classify and analyse the various corporate policies. Company documents were divided into the following categories: Yearly review comprising quan-

² Audi, BMW, Daimler, Opel, Porsche, Volkswagen

³ Frauenbeschäftigung in der Automobilindustrie (Chancengleichheit, März 2012)

titative data on personnel situation and repartition, vision and strategy statement of the company, gender diversity/equality reports and booklets of the case company.

Some of these documents were openly accessible through the companies' website, while some were granted after informing the companies HR chief officer of my intention and research project and upon agreeing a confidentiality and anonymity clause. Therefore all information related to the identification of the studied organisations are removed from this paper.

While the study took place between 2012 and 2015, some of the data collected in particular quantitative reports stretches within the time frame 2010–2013 enabling thus to track change over a longer period of time.

In addition, all this material was to be read together with the governmental and trade union regulations and cartel agreements on the respective national and regional levels to which the case companies had to submit. The above named documents are designated as supplementary documents.

For the analysis of company documents, Ely and Meyerson's fourfold framework was utilised together with Rao and Kelleher's quadrants as explained earlier. This analytical tool enabled not only the understanding of gender equality schemes mechanisms but also the identification of areas of change.

Furthermore, the field study generated data based on semi-structured interviews addressed to 13 participants, female and male executives from 28 to 59 years across the managerial hierarchies (see Figure 2. *description of interview participants*).

The interview guideline was conceived in order to seek for subjective views rather than absolute truths, in other words, the goal of the interview was to find out how people perceive the organisational interventions, how they talk about and which meaning they attribute to it (Rubin – Rubin, 2011). The main questions were designed to focus on the substance of the research problem and broken down into two major blocks thematising and addressing the research puzzle formulated as follows:

- (1) According to your own experience and career path, is the management in your company gendered? How may gender influence/have influenced (or not) managerial careers and advancement?
- (2) How do you perceive and experience the Equal Opportunity Policies (EOP) and other voluntary programs aimed at increasing women's representation at management level in your company?

The interview guideline addressed to HR officers varied slightly from the standard interview guideline for that the focus of the questions was set on EOP and women advancement programs only.

The data was analysed using Ritchie and Lewis's (2003) qualitative analytic hierarchy as a guide. The aim was to highlight managers' own stories of equal opportunity and career advancement thereby increasing our understanding of how individuals view and experience gender equality and gender relations in a particular organisational setting.

Research findings

In the following section, the main findings of the study are presented. First, the gender policies in the German

case company are mapped and analysed, second the perceptions and experiences of male and female managers are analysed and interpreted.

Mapping the gender policy: Equal opportunity and women

The German automotive company primarily applies two types of measures corresponding to what Ely and Meyerson (2000) call "Equal Opportunity" and "Fix the Women" constituting the bulk of the gender equality pledge in the company (see Figure 3. *Mapping gender policies in the German company*). The German company showed particular pride for having inscribed equal opportunities statements and policy in its strategy of development since the 1990's. This is an important information as before the introduction of the gender quota in 2016, a company in Germany was not enforced to comply with any gender related legislation, but only encouraged; companies were invited to promote gender equality only on a voluntary basis. Therefore the German auto maker had set officers within the Human Resources Management with responsibility for managing various aspects of equal opportunities (not only gender diversity). The major trade union active in the organisation acts as counter power and monitoring tool, issuing regularly reports on advancements in terms of gender equality, in particular closing the gender pay gap.

Equal opportunity

Gender in the German automotive company is still largely framed as difference between men and women; these differences result from differential structures of power and opportunity that block women's advancement (Ely – Meyerson, 2000). Management overwhelmingly remains a men's arena. Women fill only 10% of the overall managerial positions. The largest proportion of women is concentrated in the lower management level with 10%, while high and top management comprise respectively only 8% and 5% of women.

As mentioned earlier, gender based discrimination alongside ethnicity, age and disability are ruled out by the concepts of "*Gleichstellung*": *equal positioning* and "*Chancengleichheit*": *equal opportunity*. The central objective of this approach adopted by the case company is to create equal opportunity for minority categories by eliminating discriminatory structural and procedural barriers.

Under the frame "Equal Opportunity", the documentary analysis located the implementation and monitoring since 2014 of voluntary differentiated targets to increase the proportion of female apprentices, female skilled workers, female graduates and professional recruits and female executives.

The above mentioned affirmative actions are complemented by revised recruiting and selection procedures. For instance, no internal or external job application is handed personally or directly to the concerned business unit, but managed over a central database by the Human Resources Management. The Human Resources Management has also set transparent promotion policies aiming at making requirements more "neutral" so that women are more likely to be in the same situation and thus qualified for equal treatment.

These are the building blocks of the so-called “meritocratic system”, based on supposedly objective criteria of education, experience and skills; it suggests the application of “fairness” at work.

Within the “Equal opportunity” frame, work reconciliation policies are supposed to ensure a family friendly workplace. These initiatives allow substantial flexibility in relation to hours of work, offer an extensive range of part-time and shift working arrangements, guarantee a return to work at the same level after parental leave and support childcare either within or near the company premises and expands childcare provision. Whereas the company measures to combine work and family responsibilities are addressed to both male and female employees, the majority of employees taking advantage of these policies remain women. This can be partly explained by the gendered role culture and the lack of child care infrastructure in Germany as mentioned in earlier parts.

In addition, when looking at the ranking of female employees (not to talk about men) taking advantage of these benefits, data indicate that women in management resist using these flexible work benefits.

After having described the main components under the identified frame “Equal Opportunity”, the results highlighted in the figure indicate that these measures impact the systemic and formal areas only. Rather than making changes, the policy under this frame tends to leave the basic gendered structure and processes of the German company untouched. Taking the institutional factors into account it appears that the “seemingly gender neutral” bureaucratic and organisational structure in the German company maintains not only the persistent patriarchal structure in such a male dominated organisational setting but also the anchored and invisible informal institutions (Acker, 1990; Wajcman, 1998).

Fix the women

The second pillar of the gender equality schemes in management in the German company is what Ely and Meyerson call “Fix the Women” initiatives or women advancement programmes. The objectives of this programme is to remove the individual barriers impeding women’s ability to advance in management. The main rationale behind this measure is to equip women with the necessary skills to play the game or “Spiele der Macht”. Stemming from the liberal strain, the goal of “Fix the women” is to minimize differences in experience and academic and business socialization between women and men so that women can compete as equals in management (Fletcher – Ely, 2003; Ely et al., 2011). Within this frame, organizational interventions’ sole targets are women. The programme stretches over a 9-month period. After the completion of various seminars, internal projects and under the supervision of a female mentor, the mentee-women identified as management talent gain a so-called by-pass leading them straight to the management pipeline. From its creation two decades ago until 2014, 400 female employees have taken part in the programme (latest 60 participants in 2014). Content wise, the women-only development programme does not

differ from the standard management programme that was established five years ago for all employees (multi-layered initiative incl. junior, international and senior managers’ development programmes).

Women in engineering programs and executive development programs represent the hallmark of this approach. Many women have learned valuable skills from these programmes. These efforts produce an enhanced applicant pool and create a pipeline of qualified women to fill management positions.

These interventions which are aimed at “fixing” or equipping” women are ameliorative strategies organisations typically use as a first response to difficulties in promoting and retaining women. However, the focus is on the individual level, not on changing the systemic factors within organizations and institutions that create an uneven playing field for women. Interventions within this frame may help certain women to “play the game” leaving existing organizational policies and structures intact and are meant to assimilate women with minimal disruption to the status quo (Ely – Meyerson, 2000b).

Based on Ely and Meyerson’s (2000) model, the perspectives “Celebrate Differences” typically involving staff knowledge, awareness and commitment to gender equality, and “Revise Work Culture” which combat prevalent cultural norms and practices impeding gender change are not constituent part of the gender equality schemes in the German company. As Waylen (2014) argues the enforcing of institutional formal change cannot bring about long-lasting effects if the deep and unspoken informal rules are not tackled in the same way. These areas of intervention remain untouched and intact in the German company. Hence, the deep structure or taken for granted values, ways of thinking and working that underlies decision-making and action is largely unexamined and gender biased in the case German company.

As Acker (1990) pointed out, the key assumption in large organisations is that work is completely separate from the rest of life, and the organisation has first claim on the worker. From this follows the idea of the “ideal worker” dedicated to the organisation. Despite the extension of equal opportunities measures based on work life reconciliation benefits, this essential assumption is maintained. Women in the German company take advantage of these benefits, having thus more often breaks in their career, and juggling between professional and household duties, while men do not and pursue a linear career evolution.

Perceptions of male and female managers: towards a re-configuration of gender relations in organisation

In the following section, key insights retrieved from the interviews of male and female managers (incl. HRM chief officer) in the German company are presented and structured according to the main research questions.

Car’s world, Men’s world

When asked about gender relations in their company, and in particular in management, in a remarkable majority

of the interviews, the basic hierarchical male dominated form of organisation is taken for granted in the company. Gendered hierarchy and gender asymmetry are considered normal and as such is taken for granted, being presented in an anodyne and straightforward manner. *There is one thing; in general, many men work in the automotive industry, which explains why there are more men in management than women.* (R. Man in middle management).

By way of explanation to the question - why are so few women in the industry and in the managerial positions - both male and female managers pointed out the lack of interest from women in entering technical studies or professions:

I think also that there are just few women who are interested in and decide to make career in these fields. For example, more than 80% of our applicants and interns are men. (S. woman in lower management). Patriarchal gender order and masculine norms are thus constructed and maintained through a deep entrenched gendered discourse. Both male and female managers locate the problem at the level of women rather than at the level of the processes in the workplace. These expectations expressed by the participants shows how the masculine norm is widely accepted and taken for granted, it is normal or typical for the automotive industry.

The company does too many programmes!

With regards the question –how do you perceive gender equality measures in your company?– most of the responses suggested that the interviewees had little information about the gender equality and women advancement programs in place in their companies? Their responses were characterised by a confused and rather vague knowledge about fragments of policies. This poor knowledge or contact with the issue of gender equality interventions even at the highest level of management, strongly contradicts the company policy statements and supposedly strong gender mainstreaming process. Gender equality issues are not only at the margins of male and female managers' agenda, but considered as obsolete:

The Company does just too many things, too many programmes, it is confusing and a waste of money. (Y. man in top management)

Such narratives point to what Kelan (2009) describes as gender fatigue, both male and female managers do not prioritise gender discrimination as workplace issue, but dismiss it, at best as a solved issue and at worse as an individual deficiency.

Instead, both female and male managers stressed the existence and the paramount importance of standard management training and advancements programs with a detailed description of the step by step process involved. These management programmes are often designed against a masculine norm of managing, relying on the ideal worker assumption. The narratives around these programmes show that these “neutral” programmes are the sole reference for career-making in management, they are in the German organisation socially acceptable: *I haven't heard of these women programs. I have somehow heard something that should happen sometime, but no one talked about it with me.* (S. woman in lower management).

These discourses show that informal rules such as masculine values and practices in management maintaining the subtle gender bias are well anchored and internalised among the participants. They do not only display signs of gender fatigue but firmly believe in merit and fairness in their company.

Likewise, female managers rejected the interventions aimed at women only, in particular gender quotas: *I did not take part to any sort of women advancement program and consider this whole story as bullocks. We talked about with my supervisor at that time and said how ridiculous it was.* (T. Woman in high management)

I never thought that I had problems that I need more support because I am a woman in management! There are other women in the division in the same situation and they don't take part of these, they all share my opinion. (S. woman in lower management).

These clear statements show two strong yet contradictory tendencies: on the one hand, the fear of feminine stigma may lead to an eventual polarisation of relations among women and in-group tension. This contributes to the maintenance of the “individual woman as a problem”. The status quo in relation to gendered hierarchies in the organisation remains untouched. On the other hand, women continue to construct their work identity against the mirror of male values. In addition, these statements highlight the tension and mismatch between employees needs and HRM responses.

Male managers unanimously rejected any forms of affirmative actions. They do not include themselves as actors in the gender debate, rather as passive observers although they possess a substantive knowledge about gender (in)equality in the workplace. They rather identified themselves as victims and showed resentment: *It is unfair, ok women have several disadvantage in the organisation, but the problem lies somewhere else. Why men should be penalised and women shall get the straight line to management.* (F. men in middle management).

In addition, both male and female managers stressed the importance of voluntary interventions. They typically expressed the need to empower girls and young women at an early stage to enter technical education and careers within the automotive sector. According to them, interventions at an early age and more generally outside the company and providing a higher visibility of feminine role models are key actions.

The critical role of the Gender Diversity Chief Officer

Hearn et al. (2010) in their study of the discourses of managers in several Swedish firms about gender equality argue that Human Resources officers play a crucial role in expanding, translating and bringing gender equality understanding and application to life in their organisations. The interview conducted with the Gender Diversity/Women Advancement Chief Officer in the German company could shed light on how the issues of gender in management, particularly on how the notion and challenges of gender equality are conceptualised and discursively formulated. The data collected offers complementary insights to the document analysis results discussed in earlier parts.

In the German company, the Gender Diversity/Women Advancement Chief Officer belongs to the department Human Resources but reports directly to the executive board of management. She has no responsibility for the larger workforce; she is the sole responsible person for all issues related to gender diversity, with a specific focus on women in management. (Women at the lower levels and production lines being tacitly supported by the trade union instead.) The Chief Officer held a discourse characterised by pride about the progress done in the last years.

We can be proud of our performance, never before women were so powerful in the group. Let's continue the good job.

On the one hand, she acknowledged the challenges encountered by women on their way to management, underlining the stereotypes and gender beliefs prevailing in the company. She however imputed these barriers largely to the technical dimension of the industry, rather than locating the issue in the very structures of the organisation. On the other hand, she defended strongly the measures undertaken, underlined the high instances of management involvement, and most importantly did not question the sense and success of the programmes in place.

Our board asks for change and stands fully behind the advancement of women in management. Our mix of actions bring results.

Her discourse focused on the number of women who participated in the women's advancement programmes, on prominent names of managers who endorsed the programme and the prizes and awards offered to women engineers.

For example, last week I attended the delivery of awards for best women engineers...

When asked about what could still be done and in which directions the programmes are directed, the Chief Officer, stated that the objective is to over meet the quota and continued with this line of argument:

Target is to continue to increase the number of women accessing the management, up to 30%

At last, when asked which measures according to her are the most effective and important, she replied that encouraging young women to study engineering and targeting young female graduates are the most important interventions. She thus did not question the structural and cultural arrangements of the company, but highlighted the preferences and choices of girls and young women as the key change area.

As a matter of fact, the Gender Diversity/Women Advancement Chief Officer displayed a very normative view on the interventions, typically top-down designed. Her approach embraces the logic of affirmative action, which aims at increasing the number of women in management and largely locates the gender asymmetry within women attitudes, choices and preferences. The armada of measures to support women in this journey (see mapping of company policies) does not question or challenge the deeply entrenched gendered structures and practices. The measures are "window-dressing" actions focusing on a certain segment of women; namely white, young graduates, and academics. The cultural assumptions underpinning the under representation of women in technical fields and in management are not addressed. In this sense, the

views and perceptions of the Gender Diversity/Women Advancement Chief Officer correspond to the persona of a gatekeeper, disguised as being "corporate social responsible" and "committed" but defending the actual status quo.

The group is a very social group, it offers many options for women working here, and we make sure the most talented gets into the management.

Conclusions

Drawing from a case study in a German automotive company making use of an innovative combination of two analytical frameworks elaborated by Ely and Meyerson (2000) Rao and Kelleher (2005), this article attempted to contribute to the understanding of the dynamics of gender equality in organisation, and in particular in management. Contending that gender policies are a contextualised product (Radjavi, 2012), it highlights the unintended effects of gender equality schemes in management in the selected German automotive company, by examining the macro-, meso- and micro levels. Doing so, the study offers a holistic view on the issue of gender equality change in organisation.

The study results shows that gender inequality in management in the German company stretching over a decade is still based on the idea of sameness and neutrality and ignores the effects of structural and gender inequalities (Liff – Wajcman, 1996).

The main shortcomings of the gender equality programmes implemented are identified. The gender equality schemes maintain and perpetuate the unequal gender order. Instead of dismantling the gender status quo, they are in continuity. Following the principle of neo-liberalism, women are massively added on the existing contemporary patriarchal system (Wajcman, 1998) and the target of all the interventions remains mainly women. The corporate approaches categorised as "Fix the Women" according to Ely and Meyerson's (2000) framework, have brought mediocre gains since their implementation in the German company (from 1999 until today). They have enabled only a limited number of women to enter managerial functions. The recent introduction of differentiated targets has intensified the process of raising the women's numerical representation. However, in line with the German governmental and legal measures, work life reconciliation benefits under the "equal opportunities" frame are one sided and focus in particular on motherhood/parenthood and are still widely used by women only.

Hence, these findings support the previous research (Wajcman – Liff 1996; Ely et al., 2011, 2010; Hanappi-Egger, 2012; Ely – Meyerson 2000; Kelan, 2009, 2013) stating that most of organisational measures rather than addressing the hidden structures reinforce the gendered substructures. Following this line of argument, it can be stated that the combination of "Fixing the Women" and "Equal Opportunities" frames, in particular with the recent introduction of gender quota unleashed a wave of tacit protestation and resistance from both interviewed groups, male and female managers.

Indeed, the interviews results provided insightful information as regards the research questions.

- (1) According to your own experience and career path, is the management in your company gendered? How may gender influence/have influenced (or not) managerial careers and advancement?

The strong technical and industrial dimensions of the organisational culture (long working hours, face time working style, male codes and mind-sets) were viewed by both men and women as the main cause explaining the paucity of women in managerial positions. The lack of interest of women for pursuing a career in the automotive sector was pointed out to explain the strong gender bias and the striking horizontal segregation across divisions. As a result, female participants conceal and often deny the longstanding and deeper effect of gender bias in their workplace. This form of legitimacy of gender inequality in management is central to female managers' account and experiences in the German company. Although numerical underrepresentation of women in managerial ranks is well recognized and thus a visible fact of the German organisational life, gender based inequities as the root cause of this imbalance remains invisible. Female participants were often reluctant to locate gender disadvantage within the gendered organisational regimes (Lewis – Simpson 2010). Taken for granted views on engineering and differential roles, capabilities and expectations between men and women are key constituent of women's managerial experiences.

- (2) How do you perceive and experience the Equal Opportunity Policies (EOP) and other voluntary programs aimed at increasing women's representation at management level in your company?

Experiences and accounts of male managers on gender equality show that they strikingly resist and perceive any interventions as unfair advantage for women. This study shows that men in the German company are not aware of the gender imbalance, they overtly disregard organisational measures aiming at promoting women. This points towards the lack of consideration for gender equality issues in the managerial ranks in the German company. Male participants adopt a language of individual choice to explain gender based disparities in career outcomes. In this context the responsibility for equality and fairness is removed from the remit of the organisation and mostly from the managerial man. The presented findings clearly supports Wajcman's (1998) notion of resistance and resentment on the side of men. The gender equality frameworks fail to give a voice to men without reinforcing their privilege and their centrality which is reflected in their continuing dominance in senior and engineering positions in the automotive sector.

This study thus bears significant implications for further research for it shows how the equal opportunity policies and the rhetoric of gender justice draw attention away from continuing disadvantage and privilege. The proposed analytical framework is not only a documented witness but also a promising tool for practitioners and researchers.

The qualitative study per se lacks generalisability criteria; the results are driven from a particular sector and industry, and highly contextualised. Whereas the findings are local, they offer a deeper insight into a complex phe-

nomenon, that still nowadays puzzle scholars and practitioners. The multiple case study presented following a rigorous analytical "template" is replicable, the variety of methods used reinforced the internal as well as the external validity, so that the procedure although time consuming can be replicable and verifiable by other parties.

Further research is therefore needed to dismantle the mechanisms of informal rules, such as the activities of networking and mentoring. Cross cultural and cross sectorial studies might shed light on the complex interplay between institution, structural and organisational factors when designing gender equality schemes.

Further work using the innovative conceptual and analytical tool presented in the study earlier can and should be conducted in other industries, for instance, a cross-sectorial study could pinpoint fine-grained similarity or differences. Moreover, cross cultural strategy using the same framework and comparing for instance third world and post-industrial societies could offer fine-grained insights to understand to which extent company culture plays a role and how the cultural and institutional framework shapes the meanings given to gender equality measures.

References

- Acker, J. (1990): Hierarchies, Jobs, Bodies: A Theory of Gendered Organizations. *Gender and Society*, 4, pp. 139-158.
- Acker, J. (1992): From Sex Roles to Gendered Institutions. *Contemporary Sociology*, 21, pp. 565-569.
- Acker, J. (2006): Inequality Regimes: Gender, Class, and Race in Organizations, *Gender and Society*, 20(4), pp. 441-464.
- Acker, J. (2010): Geschlecht, Rasse und Klasse, die Untersuchung von Ungleichheit aus der Perspektive der Intersektionalität.
- Calás, M. – Smircich, L. (2006): From the "woman's point of view ten years later: towards a feminist organisation studies. In: Clegg, S. R. – Hardy, C. – Lawrence, T. B. – Nord, W. R. (eds.): *The Sage Handbook of Organisations Studies*. London: Sage, p. 284-346.
- Calás, M. B. – Smircich, L. (2009): Feminist Perspectives on Gender in Organizational Research: What Is and Is Yet to Be. In: Buchanan, D. – Bryman, A. (eds.): *The Handbook of Organizational Research Methods*. London: Sage, pp. 246-269.
- Catalyst (2018): Quick Take: Women in the Automotive Industry, Available at: https://www.catalyst.org/research/women-in-the-automotive-industry/#footnote19_h0yrecc (Accessed 24 February 2019).
- Connell, R. W. (2002): *Gender*. Cambridge: Polity Press; Malden: Blackwell Publishers.
- Cooke, L. P. (2007): Persistent policy effects on gender equity in the home: the division of domestic tasks in reunified Germany. *Journal of Marriage and Family*, 69 (4). pp. 930-950.
- Doldor, E. – Vinncombe, S. (2015): Women's pathways to the boardroom. *Gender in Management: An International Journal*, 30(7), pp. 523-550.
- Ely, R. J. – Ibarra, H. – Kolb, D. (2011): Taking Gender into Account: Theory and Design for Women's Lead-

ership Development Programs. Academy of Management Learning & Education

Ely, R. J. – Meyerson, D. E. (2000): Theories of gender in organizations: A new approach to organizational analysis and change. *Research in Organizational Behavior*, 22, p. 103-151.

Fagenson, E. A. (1993): Diversity Management Introduction. Women in Management: Trends Issues and Challenges in Managerial Diversity. In: Fagenson, E. A. (ed.). (1993): Women and work: A research and policy series, Vol. 4. Women in management: Trends, issues, and challenges in managerial diversity. Thousand Oaks, CA: Sage Publications, Inc., pp. 3-5.

Fagnani, J. – Math, A. (2007) : Les récentes reformes de la politique familiale en Allemagne : de nouveaux horizons pour les femmes ? *Droit Social*, 5, p. 630-636.

Fletcher, J. K. – Ely, R. J. (2003): Introducing Gender: Overview. In: Ely, R. J. – Foldy, E. G. – Scully, M. A. (eds.): Reader in Gender, Work and Organisation. New York: Wiley Blackwell, pp. 3-9.

Gherardi, S. – Poggio, B. (2007): Gender telling in Organizations: Narratives from Male Dominated Environment. Copenhagen: Liber

Hanappi-Egger, E. (2011): The Triple M of Organisations: Men, Management and Myth. Vienna, New York: Springer

Hanappi-Egger, E. (2012): “Shall I stay or shall I go”? On the role of diversity management for women's retention in SET professions. *Equality, Diversity and Inclusion: An International Journal*, 31 (2), p. 144-157.

Hanappi-Egger, E. – Eberherr, H. (2016): Routinierte Vergeschlechtigung: Zur (Re-) Produktion von Geschlechtstypisierungen und impliziten Rollenerwartungen im Management. *Managementforschung*, (25), pp. 115-138.

Hearn, J. – Husu, L. – Lämsä, A. M. – Vanhala, S. (eds.) (2010): Leadership through the Gender Lens: Women and Men in Organizations. Helsinki: Edita

Hearn, J. (2012): Role of Men in Gender Equality: Study on the Role of Men in Gender Equality. In: Scambor, E. – Wojnicka, K. – Bergmann, N. (eds): Final Report to the European Commission. VC/2010/0592. Vienna: L&R Social Research

Holst, E. (2010): Institutionelle Determinanten der Erwerbsarbeit: Zur Notwendigkeit einer Gender-Perspektive in den Wirtschaftswissenschaften. Discussion papers of DIW, Berlin

Holvino, E. – Kamp, A. (2009): Diversity management: Are we moving in the right direction? Reflections from both sides of the North Atlantic. *Scandinavian Journal of Management*, 25(4), pp. 395-403.

Kelan, E. K. (2009): Gender fatigue: The ideological dilemma of gender neutrality and discrimination in organizations, *Canadian Journal of Administrative Sciences/Revue Canadienne des Sciences de l'Administration*, 26 (3), pp. 197-210.

Kelan, E. K. (2013): The Becoming of Business Bodies: Gender, Appearance, and Leadership Development. *Management Learning*, 44 (1), pp. 45-61.

Kurz, C. (2006): Zwischen Prekarisierung und Akademisierung: Frauenerwerbstätigkeit in der Automobilindustrie. *SOFI Mitteilung*, 34, pp. 53-66.

Lewis, P. – Simpson, R. (2010): Revealing and Concealing Gender: Issues of Visibility in Organizations. Basingstoke: Palgrave Macmillan

Liff, S. – Wajcman, J. (1996): “Sameness” and “difference” revisited: which way forward for equal opportunity initiatives? *Journal of Management Studies*, 33, pp. 79-94.

Meyerson, D. E. – Kolb, D. M. (2000): Moving out of the “armchair”: Developing a framework to bridge the gap between feminist theory and practice. *Organization*, 7(4), pp. 553-571.

Rao, A. R. – Kelleher, D. (1999): Gender at work: Organisational Change for Equality. West Hartford, Connecticut: Kumarian Press, Inc

Rao, A. – Kelleher, D. (2003): Institutions, Organisations and Gender Equality in an Era of Globalisation. *Gender and Development*, 11(1), pp. 142-149.

Rao, A. – Kelleher, D. (2005): Is there life after gender mainstreaming? *Gender and Development*, 13(2), pp. 57-69.

Ritchie, J. – Lewis J. (2003): A Guide for Social Science Students and Researchers. London: Sage

Rubin, H. J. – Rubin, I. (2011): Qualitative Interviewing: The Art of Hearing Data. Thousand Oaks: Sage Publications

Stake, R. (2000): Case Studies. In: Denzin, N. K. – Lincoln, Y. S. (eds): Handbook of qualitative research. Thousand Oaks, CA: Sage, pp. 435-454.

Tatli, A. – Vassilopoulou, J. – Al Ariss, A. – Özbilgin, M. (2012): The Role of Regulatory and Temporal Context in the Construction of Diversity Discourses: The case of UK, France and Germany. *European Journal of Industrial Relations*, 18(4), pp. 293-308.

Wajcman, J. (1996): Women and men managers: careers and equal opportunities. In: Crompton, R. – Gallie, D. – Purcell, K. (eds) (1996): Changing Forms of Employment: Organisations, Skills and Gender. London: Routledge, pp. 259-277.

Wajcman, J. (1998): Managing like a man: women and men in corporate management. Cambridge: Polity Press in association with Blackwell Publishers Ltd.

Waylen, G. (2014): Informal Institutions, Institutional Change and Gender Equality. *Political Research Quarterly*, 67(1), pp. 212-223.

Weinkopf, C. (2014): Women Employment in Germany: Robust in Crisis but Vulnerable in Job Quality. *Revue de l'OFCE*, (133), pp. 189-214.

Whitehead, S. (2002): Hegemonic Masculinity Revisited, *Gender, Work & Organization*, 6 (1), pp. 58-62.

ANALYSING THE COMPARATIVE ADVANTAGES OF THE INTERNATIONAL OIL TRADE: THE CASE OF GULF COOPERATION COUNCIL

Several studies have investigated the competitiveness with a focus placed on the Middle East, however, there are relatively few to pay attention specifically on the comparative advantages in oil trade. This paper utilizes the Balassa indices to shed light on the general tendencies and specific shifts in revealed comparative trade advantage of the Gulf Cooperation Council member states in main oil products between years 2000 and 2015. Based on our result, only four out of six GCC member states (Kuwait, Kingdom of Saudi Arabia, United Arab Emirates, Qatar) were found to possess an initial competitive status for at least one oil product. A tendency of generally diminishing comparative advantage in oil trade for the GCC group was revealed as a consequence of economic, financial, political reasons, including the aftermath of the financial crisis, regional instability, the Syrian conflict, fluctuating international oil prices.

Keywords: Gulf Cooperation Council, oil trade, comparative advantage

It did not take much time after the publication of Adam Smith's *'The Wealth of Nations'*, until another economist, David Ricardo (1772-1823) appeared on the horizon of modern classical economics, making an impact on the classical economic theory of international trade by further developing Smith's ideas and bringing existing theories closer to depicting reality.

According to Ricardo's theory of comparative advantage, trading can take place even if one country has an absolute advantage over the other in the production of both of two selected goods, because these advantages are not equal, therefore, the country with worse production conditions will still have a comparative advantage in one of the goods and the level of general well-being will rise (Acin, 1974, p. 46-47).

As a result, a country will export products that it can produce at a low opportunity cost (in terms of other goods that could be produced within the country), while it will import those goods which it can produce only at a comparative disadvantage or slight comparative advantage (Bernstein, 2008).

There is no commonly accepted approach to defining competitiveness or competitive advantage. Certain authors analyse national level competitiveness while others suggest its application at different aggregated levels (Somogyi, 2009).

A number of studies have been conducted about competitiveness in general with a focus placed on the Middle East, however, there are relatively few to concentrate specifically on the combination of competitiveness and comparative advantages in oil trade.

Huggins *et al.* (2016) embrace a general approach to regional competitiveness, using World Competitiveness Index of Regions (WCIR) as an analysis framework. Authors found that the competitiveness of some Middle Eastern regions undoubtedly stems from the presence of valuable natural resources, however, some others achieved it through other means.

With full dedication to the oil sector, AlQudah *et al.* (2016) focused on the evaluation of the impact of oil on the global competitiveness of the GCC (Gulf Cooperation Council) states by using panel data techniques. The au-

thors observed that competitiveness grows parallel with the increase in oil prices and share of the mining sector in GDP, for the examined countries are heavily reliant on oil sector to achieve and sustain competitiveness. As a result, diversification efforts are bound to lead to a decrease in comparative advantage and trigger a tendency of diminishing competitiveness.

Finally, Almas and Hajiye (2013) prepared an analysis of the existing and potential comparative advantages of the Azerbaijani trade, looking at a variety of goods from different sectors. The authors took a close look at the study period between 2007 and 2009 and two RCA indicators, the Balassa and Net Export Ratio indices were used to identify comparative advantages on a wide range of goods including agricultural products, oil products, chemical- and petrochemical products, as well as machineries. The outstandingly high numbers for the two indices both suggest that Azerbaijan had a robust comparative advantage in crude oil within the study period.

Throughout our research it became clear that there are no previous studies with an analysis arrangement identical or even similar to the one selected for this paper, therefore, it is reasonable to conduct research on this topic, along with the lines and with the help of the tools discussed earlier.

Methodology

The modern basis of calculating comparative advantages, the so-called 'B' index was invented by Balassa (1965) and published in his famous study *'Trade liberalization and revealed comparative advantage'*. Since then, it has been surrounded by vivid interest, and for a handful of limitations have been revealed in relation to it, several economists felt inspired to extend and improve it further in the following decades, too.

The B index gives researchers a hand to compute the relative comparative advantage or disadvantage for a product or group of products, compared to industry or the export market. It proposes to compute revealed comparative advantage as follows:

$$RCA_{ij} = B_{ij} = (X_{ij}/X_{it}) / (X_{nj}/X_{nt})$$

where X stands for export volume, i and j represent a selected country and product respectively, while t and n stand for a certain product group and a group of countries, respectively (Balassa, 1965).

In theory, the index can take values from 0 to positive infinity. According to Balassa, an end result above 1 suggests that the selected country enjoys comparative advantage with respect to the selected product over fellow suppliers, therefore, it is bound to be manifested in high export market share. In turn, an end result between 0 and 1 implies comparative disadvantage for the selected country in contrast to fellow suppliers, which translates into low export market share.

The Balassa (1965) index was found to have some limitations (discussed later), which encouraged economists to elaborate tools which depict reality about comparative advantages in a more accurate way. Without any changes in the B index formula, *Hinloopen - van Marrewijk* (2001) proposed a classification system, which helps in properly evaluating the end results. The authors labelled their established categories as follows:

Category A: $0 < B \leq 1$,

Category B: $1 < B \leq 2$,

Category C: $2 < B \leq 4$,

Category D: $4 < B$,

where products with no comparative advantage belong to category A, while products with weak, moderate and strong comparative advantage are assigned to category B, C and D, respectively. This classification contributes to the proper interpretation of B index values; however, it does not solve the problem of the lack of proportionality mentioned above.

The B index has quickly gained popularity and it has been widely used by many to evaluate trade advantage positions and prospects. Nevertheless, throughout the decade long use of B index, it became evident that besides its positive features of simplicity and ease of use, there are some limitations to it, too.

Foreign trade is known for being a highly significant area of national economic policies, therefore, attempts from governments to achieve certain changes in national foreign trade structure in shape of direct interventions (subsidization of certain industries) or restrictions are likely to be influential factors in every national economy (Jámbor, 2009). The B index is rightfully criticized for disregarding the impacts of these different economic policies driven by specific national drives, thus *Siggel* (2006) came to the conclusion that the index is more of a useful tool to capture competitiveness in general than to measure comparative advantages.

Sample and data

The study period embraces years between 2000 and 2015. All data used for the empirical study are drawn from the World Integrated Trade Solutions (WITS) database of the World Bank (2017). Although the entire 27th chapter of Harmonized System (HS) deals with petroleum and its derivatives, over 90% of Gulf States' export volume is captured by three of its subcategories, therefore, the scope of this paper is confined to the following three, HS-4 digit product codes: 2709 (Petroleum oils and oils obtained

from bituminous minerals; crude), 2710 (Petroleum oils and oils from bituminous minerals, not crude; preparations n.e.c, containing by weight 70% or more of petroleum oils or oils from bituminous minerals; these being the basic constituents of the preparations; waste oils) and 2711 (Petroleum gases and other gaseous hydrocarbons). Missing values are in all cases substituted by zero values. The objective of the study is to investigate the following two hypotheses:

H1: All GCC member states enjoyed revealed comparative advantage in oil trade within the study period in the World market.

We specify that an initial competitive status means that a country has a comparative advantage during the analysed period for at least one oil product of the three analysed product category (crude oil, oil preparations and petroleum gases).

H2: The level of revealed comparative advantage of GCC member states in oil trade has significantly diminished over the study period due to political and economic reasons.

The H2 attempt to refer to the impact of the financial crisis in 2008 and its aftermaths, the Syrian conflict and the emergence of renewable energy use. Apart from the interpretation of obtained results, a special emphasis is placed on highlighting the probable influential factors behind major shifts, should they be of economic, political or other sorts of cause.

Pattern of world oil production and trade

The extraction of petroleum in industrial volumes dates back to the 19th century, and since then, continuous technological improvements made oil industry reach mature industry status. Petroleum consumption heavily damages the environment, while it is not true for the more and more affordable renewal energy, which makes some argue that the end of the oil era is near. However, petroleum did not cease to be the world's leading source of energy, accounting for 32,9% of global energy consumption in 2015 (BP, 2016). For its utmost importance, we found petroleum suitable to be the commodity of interest for our empirical analysis.

Petroleum is necessary for the functioning of every healthy economy, however, reserves are oddly distributed among countries. In order to let trade happen between those willing to sell and buy, an active international market was established, which is accessible to any interested party. The unit measure of crude oil is barrel, and although it is a relatively homogenous commodity, certain oil markers are in use for price benchmarking worldwide, the most acknowledged of which are the WTI (West Texas Intermediate – high quality, light petroleum with low sulphur content), Brent (a combination of crude oil extracted from fifteen different North Sea oil fields, almost as light as WTI crude) and Dubai-Fateh (medium sour Dubai crude oil) oil types (Mikesy, 2009). NYMEX (New York Mercantile Exchange) and OPEC (Organization of the Petroleum Exporting Countries) Basket of Crudes also serve as oil price benchmarking tools (Lövész, 2006).

International oil price changes are consistently surrounded by vivid interest, and the last sixteen years

brought about intensive price fluctuations. Two steep price drops occurred since 2000 in years 2008 and 2014. The global financial crisis triggered the sharpest decline seen in the new millennium so far, with a 66% price drop within one year. The period of recovery and stabilization of crude oil prices around 100 USD/barrel after 2008 was ended by an approximately 50% decline in 2014. Lately, oil prices have shown a high level of instability, sinking below 30 USD/barrel and climbing up to 50 USD/barrel since then.

Such fluctuations may be driven by a multitude of causes, including political events, economic and monetary shocks, natural disasters and as *Mikesy* (2009) notes, speculation activity which was proved to be one of the most important causes behind the robust price increase between 2000 and 2008.

Table 1 is meant to highlight the ten most influential petroleum producer and exporter countries, whose joint export volume accounts for more than 50% of total world exports. (For the first glance, the presence of Singapore in the top ten oil exporters may seem to be misleading. Although the country has no remarkable hydrocarbon reserves, it has huge capacities in oil refining, thus with an extremely high value of oil preparations exports (2710), Singapore makes it into the top ten). The *Table 1* is below is based on historical oil trade data of World Bank (2017) from 2000 to 2015.

Table 1 World top 10 oil exporters, 2000 and 2015

Ranking	Country	in billion USD	Share
1	Saudi Arabia	2 906	13.23%
2	Russia	2 476	11.27%
3	UAE	1 027	4.68%
4	Canada	858	3.91%
5	Norway	775	3.53%
6	United States	762	3.47%
7	Nigeria	755	3.44%
8	Kuwait	715	3.25%
9	Venezuela	658	3.00%
10	Singapore	644	2.93%
Top 10 Total oil export		11 581	52.71%
World Total oil export		21 973	100%

Source: Own calculations based on World Bank (2017) World Integrated Trade Solution database (HS-4 level, product code: 2709-2710)

The Kingdom of Saudi Arabia is the world's most important oil exporter, solely accounting for more than 13% of total world exports. Around 87%¹ of Saudi government revenues origins from the petroleum sector, which points at a

high degree of demand risk exposure on national levels (Saudi Arabian Monetary Authority, 2016). Saudi policymakers have strived lately for mitigating this exposure, by opening towards renewable energy in the spirit of diversification.

The richest country in hydrocarbons worldwide, Russian Federation occupies the second place in leading oil exporters' list by realizing more than 10% of world total oil exports alone. Extraction and export of crude oil and natural gas constitute an element of utmost importance for Russia, as it adds up to more than half of the country's federal budget revenue (EIA, 2015). Russia does not only excel in hydrocarbon extraction but is a flagship of nuclear power generation technology, as well as being famous for using its energy source capacities as a basis for negotiations to obtain more favourable positions in the field of international politics.

Occupying the third place in total export volume list, the United Arab Emirates maintains a wise approach towards hydrocarbon reserves. While it has continuously supplied crude oil, money inflow has been utilized for decades to successfully transform this federal state into a touristic and acknowledged financial hub (BBC, 2016b). Its architectural and touristic hallmarks, the widespread image of luxury, in addition to expertise in financial and other sorts of services ensure that the Emirates' position as one of the most attractive welfare states is secured even after the end of the oil era.

Canada is very rich in oil sand reserves, which have gradually become profitable to recover since the 1980s. Although oil sand recovery raises concern for it heavily damages the environment, Canada is committed to increasing its production volume and expects to become the world's leading oil provider till 2020 (CAPP, 2017).

One of the wealthiest states worldwide, Norway occupies the fifth place in total export volume rank list. Oil reserves discovered at the continental shelf under the North Sea and the Norwegian Sea in the 1960s stabilized Norway's positions as a leading oil producer and exporter. Hydrocarbon exports provide a reliable source of budget income, contributing to achieving and maintaining outstandingly high living standards and national prosperity (Norwegian Petroleum, 2017).

Role of Gulf Cooperation Council in oil trade

In this study, we selected a group of six countries which are: Bahrain, Kuwait, Oman, Qatar, the Kingdom of Saudi Arabia and the United Arab Emirates.

On one hand, these states are located very close to each other geographically, thus their geological features are very similar. Beginning from the Proterozoic (800-640 million years ago), a sequence of tectonic movements started, paving the way for the generation of the largest part of Middle Eastern hydrocarbon reserves throughout the Mesozoic Era, 252-66 million years ago (Szűcs, 2007). As a consequence of these tectonic movements, approximately 30% of today's proved oil reserves are located beneath the Gulf States (BP, 2016), which makes them rightfully regarded as candidates

¹ Own calculation for the years 2000-2015, based on official data released by Saudi Arabian Monetary Authority (2016).

for having high advantage in oil production, as well as being treated as key players from geopolitical perspective.

On the other hand, as a consequence of geographical proximity, these countries have highly similar historical and cultural background. Beginning from the spread of Islam -the most influential, cross border cultural shaping power of the region -, and the political expansion and conquests under its flag in the 7th century A.D., the territory of today's Gulf States has always belonged to the nearest located superpower of the era, should it be the Abbasid Caliphate or the Ottoman Empire in the Middle Ages, or the British Empire in the modern times (Weiss – Green, 1995). In terms of cultural similarity, Islam left its mark on nearly every aspect of the way nations of the Arab Peninsula live, including architecture, clothing, regional traditions and social standards.

During the 20th century, the six selected Arab states realized that uniting their political will and performing joint actions will result in better assertion of their interest by international superpowers, therefore they developed a high level of cooperation in many fields. They are member states of several international organizations, including: the United Nations, the Organization of Islamic Cooperation (which strives for fostering cooperation and solidarity among Islamic states), the Arab League (which constitutes a politics driven regional bloc of Arab states), and the Gulf Cooperation Council, which is the exclusive political and economic alliance of Bahrain, Kuwait, Oman, Qatar, the Kingdom of Saudi Arabia and the United Arab Emirates. Besides deepening the relations between member states, the Gulf Cooperation Council aims at fostering common legislation in numerous fields, unification of corporate culture and synchronizing the efforts put in innovation and technological advancement (GCC, 2017). Furthermore, four states out of six – namely, Kuwait, Qatar, the Kingdom of Saudi Arabia and the United Arab Emirates – are members of the Organization of the Petroleum Exporting Countries (OPEC) since the 1960s', which is definitely the most significant influencer of oil prices in the world market (Lövész, 2006).

Factors influencing GCC's oil trade between 2000 and 2015

Changes in commodity trade advantages are influenced by a handful of political, economic, historic and other factors, the number of which is constantly increasing with globalization. Beside regional changes it is required to take into consideration every factor which might play a role in the change of tendencies, should they happen in the close neighbourhood or in a geographically remote area.

Political influencing factors

The Arab Peninsula can be characterized by tranquility and prosperity within the study period. There were no armed conflicts in the region, except the Yemeni Civil War which began in 2015 (and since it is at the very end of the examined timeframe, it does not have a relevant impact on the results). However, the Middle East as wider environment witnessed a stormy fifteen years since 2000. There have been several bloody conflicts, the most significant of which are the following:

The Iraqi War, which was launched by the United States of America in 2003, driven by the US's eagerness for fighting against terrorism and spreading of democratic values (at least according to the official reasoning). The war lasted for eight years until 2011 and resulted in political chaos after toppling the government of Saddam Hussein (Jáni, 2011).

The Second Intifada, which is concentrated around the Palestinian-Israeli conflict beginning from 2000. It is an ongoing conflict which is characterized by suicide- and missile attacks (Ajuni, 2003).

The Second Lebanon War, which was a 34-day long armed conflict in the summer of 2006, between the forces of Israel and Hezbollah on the territory of South Lebanon. The war caused the death of thousands of soldiers as well as civilians (Tomolya, 2007).

The Arab Spring, which comprises the anti-government protests in many Arab countries in 2011, resulting in the toppling of reigning governments in Tunisia, Libya and Egypt, among others (Jones, 2012).

The Syrian Civil War, which is an ongoing bloody conflict since 2011. In the beginning, there were only a few parties involved including government forces, the extremist rebels supported from outside the country, and the Kurdish minority forces. From 2014 onwards, additional parties got involved, for example, the Islamic State of Iraq and Levant (IS), and many other small militias (BBC, 2016a).

The appearance of IS terrorist organization in Iraq in 2014, which is a focal point and key cause of bloody battles to this day (BBC, 2015).

Although the above list is far from being complete, it is evident that neighbouring Middle-Eastern societies were suffering from severe armed conflicts within the study period, which definitely had an indirect impact on the price of oil, and through this on the oil exporter states and their competitiveness, too.

Decisive economic influential factors

The countries of the Arab Peninsula were gifted with prosperity in economic terms between 2000 and 2015, as huge amounts of money flow into the Gulf States because of high oil prices in the 2000s. As a consequence to the rapid increase in national wealth, spectacular investments took place in these countries outside of raw material extraction, and in the spirit of diversification, other industries have also developed, for instance, tourism and banking. Nevertheless, it would be mistaken not to take international economic tendencies into consideration, which had their indirect impact on Gulf economies, too. Some of these decisive economic happenings are as follows:

The rapid growth of the Chinese and Indian economies. The outstanding GDP growth necessary to realize such development implies large energy needs which have a positive effect on oil industry.

The monetary crisis in 2008, which had a worldwide impact on monetary affairs. Nonetheless, as the Gulf States have already been on their way to becoming more reliant on Islamic banking, the unique features of this alternative monetary approach significantly mitigated the effects of the crisis (Ádám et al., 2015).

The nuclear catastrophe of Fukushima in 2011, which made national leaders rethink their energy policy worldwide (Vivoda, 2012).

The oil price depression in 2014-2015, which brought about a large-scale decrease in crude oil prices, by more than 70% (Crude Oil Prices, 2017). It is easy to see that oil exporter countries were heavily hit by this change and had to face drastic losses of income.

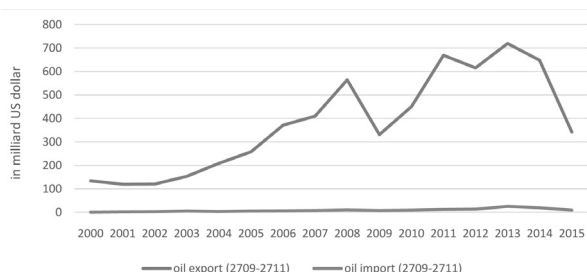
It is worth mentioning that none of the listed economy related items has direct links to the Middle East, but still, they have their influencing power on the conditions of oil extraction and indirectly, on oil trade advantages of exporter countries.

Oil trade patterns of the GCC countries

Oil is an element of utmost importance in GCC foreign trade, which significantly influences member states' budget.

Starting with the year 2000, the favourable international market environment and a steadily increasing oil price resulted in a tendency of rising oil export year by year, which was spectacularly broken by the financial crisis, pushing oil export to radically decrease till 2009 (331 billion USD). The years of recovery brought about a tendency of the increase until arriving at the highest observed value of the study period in 2013 (720 billion USD), followed by a drastic decrease in oil export in 2014-2015 (*Figure 1*).

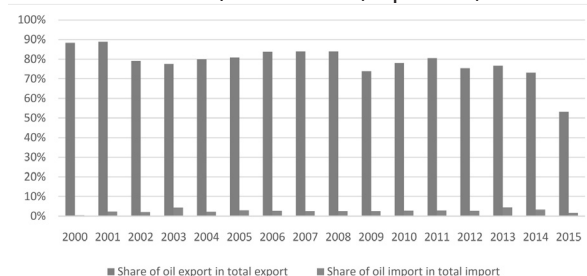
Figure 1 Oil trade volume for GCC countries between 2000-2015 (in billion USD)



Source: Own calculations based on World Bank (2017) WITS database

It is worthwhile to take a look at the proportion of oil trade to total trade for GCC countries, too. In *Figure 2*, we can observe a highly positive oil export with a share of oil import below 5% in GCC total trade during the entire period.

Figure 2 Proportion of oil trade to total trade for GCC countries, 2000-2015 (in percent)



Source: Own calculations based on World Bank (2017) WITS database

The fact that the share of total oil imports is significantly lower than total exports suggests that GCC countries realized a significant export surplus for a period analysed. The only slight decline in exports share in 2009 can obviously be traced back to the effects of the global financial crisis. Import tends to react to market environment changes to a lesser extent than exports does, which is due to the dominance of oil exports in total exports and as a consequence, a high degree of exposure to international oil price fluctuations.

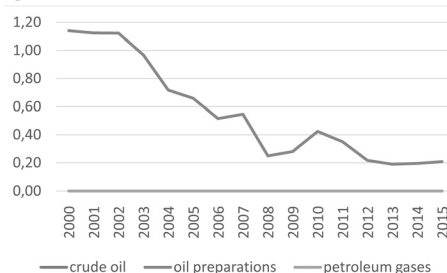
Empirical results

As mentioned before, Balassa-index is meant to depict the competitiveness and comparative advantage of a certain market player, in terms of given products based on historical trade data. The study period cover (16 years), index values are assigned to the three most important oil product code (2709-2711). Products under product codes 2709-2711 are referred to 'crude oil', 'oil preparations' and 'petroleum gases' respectively.

Bahrain

According to Balassa-index figures, the competitiveness of Bahrain has significantly decreased since 2000. Even if in the first two years did the measure exceed 1, which is known as the lower limit of international competitiveness, and the situation has just got worse with time, arriving at moderate B values (0,21) after 2011 (*Figure 3*).

Figure 3 B-index results for oil trade Bahrain



Note: In the case of Bahrain, we have to settle for insufficient export data retrieved from World Bank (2017) WITS database. Most of the export values for crude oil and petroleum gases were missing, and substituted by zero values.

Source: Own calculations based on World Bank (2017) WITS database

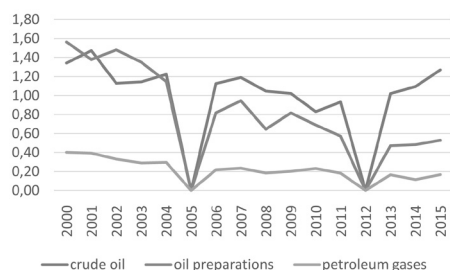
There are multiple reasons behind the observed pattern of fading competitiveness in oil preparations (2710), including the impacts of financial crisis in 2008 (which resulted in halving of B-index in next year), international oil price fluctuations, the finiteness of national petroleum reserves as well as the lack of putting big enough emphasis on technological developments, letting competitors take over. The loss of revealed competitive advantage in oil trade is only one of the problems Bahrain needs to face currently – increasing public debt levels and constant social unrest (originating from religious stems) constitute major challenges to the country. Nevertheless, the Bahraini economy is not likely to collapse soon, since the country boasts with the Gulf region's most diversified economy. Bahrain's

governance puts special emphasis on the financial sector, letting the hydrocarbon sector to contribute only 20% to the GDP (Talal-Azimi, 2016). As a result, any shocks hitting the sector are less harmful to the national economy.

Kuwait

Looking at trade data and B index, it can be concluded that around the beginning of the new millennium, the country was firmly competitive in crude oil and oil preparations trade. Although the B index value for crude oil trade has dropped by nearly 33% throughout fifteen years, Kuwait managed to stay near to 1 in terms of competitiveness measure (1,27 in 2015), which means the country is still an important crude oil (2709) supplier. However, in terms of oil preparations (2710), figures testify a significant decrease within the study period (1,6 to 0,5), meaning B-index nearly shrank to one-third of the initial value and Kuwait lost its international competitiveness. In the field of petroleum gases (2711), Kuwait was not regarded as competitive exporter even around 2000, while its positions only worsened since then (Figure 4).

Figure 4 B-index results for oil trade of Kuwait



Source: Own calculations based on World Bank (2017) WITS database

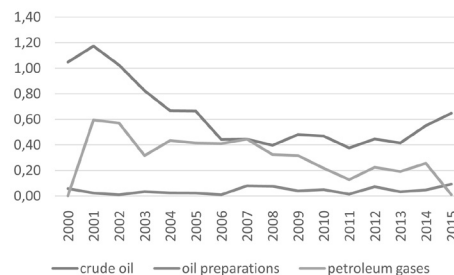
The negative tendencies of competitiveness in oil products are a bit surprising in the light of Project Kuwait (a long-term vision of Kuwaiti oil policy, first announced in 1997), Clean Fuels Project (aiming at upgrading national refineries, approved in June, 2011) and other projects launched between 2000-2015, which testify national commitment towards further increasing oil and oil derivatives production to reach 4 million barrels/day until 2020 (sustaining this volume until 2030) as well as increasing natural gas production to reach 4 billion cubic feet per day until 2030 - which equals a 300% increase compared to the production volume achieved in 2013 (EIA, 2013). Nevertheless, observed downward sloping competitiveness patterns are explainable by the fact that this study concentrates on a timeframe which is regarded as short term in the case of such commitments, while they are expected to yield growth in the long-term only.

Oman

Possessing small hydrocarbon deposits compared to neighbouring GCC countries, yet the Sultanate of Oman maintains an active hydrocarbon production and trade. The B-index for crude oil trade (2709) exceeded the lower boundary of competitiveness (1) in 2000 by taking a value of 1,17, however, its competitiveness melt away until 2007, only to report a B-index value of 0,4 (Figure 5). As a joint consequence of

new discoveries and the use of enhanced oil recovery (EOR) techniques (EIA, 2016), a tendency of slow recovery has been witnessed, reaching 0,65 by 2015 (Appendix), in spite of the fact that low level of oil price continuously challenges the oil industry and has a negative impact on oil extraction.

Figure 5 B-index results for oil trade of Oman



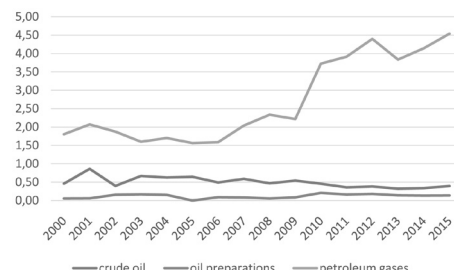
Source: Own calculations based on World Bank (2017) WITS database

Nevertheless, the natural gas sector was the one worst hit by the financial crisis in 2008, as well as a drastic drop of B-values (0.26 to 0.01), are observed between 2014 and 2015 (Appendix).

Qatar

Although Qatar is an important player in the field of crude oil extraction and trade, it is, without a doubt, the most prominent player in the field of natural gas production and export. According to the estimate of BP (2015), 13,1% of known natural gas reserves are located under Qatari soil in 2015, which is mirrored in Balassa-index results, too. Qatar has been holding its competitive status, managing a duplication in its B-index value since 2000. The key to its success lies in globally increasing demand for natural gas, regional stability, magnitude and ease of accessibility of reserves, as well as prudent investments in extraction technology. Based on B-index results, Qatar has not been internationally competitive in the fields of crude oil (2709) and oil preparations (2710) within the last fifteen years (Appendix), moreover, it shifted towards competitive disadvantage for reasons similar to those seen at other oil exporter GCC member states (Figure 6).

Figure 6 B-index results for oil trade of Qatar



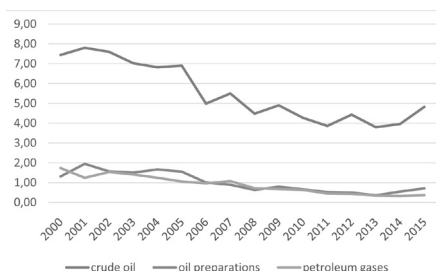
Source: Own calculations based on World Bank (2017) WITS database

The Kingdom of Saudi Arabia

The Kingdom of Saudi Arabia is worldwide known for its huge petroleum reserves. Although the country did not cease to be a player of utmost importance in the field of oil trade,

historical data from the last fifteen years suggest that the Saudi comparative advantage in oil trade is diminishing (*Figure 7*). Throughout the study period, Saudi crude oil (2709) trade has witnessed a little less than fifty percent loss in terms of Balassa-index measure (7,44 to 4,82), which was distributed more or less evenly among the fifteen years of interest. Yet, the country exhibits a B value of around 4 between 2010 and 2015. The negative impacts of the global financial crisis in 2008 were not promptly mirrored in Saudi B values, a more significant decrease in comparative trade advantage is only captured in the B values of years 2010 and 2011 (Appendix). The delayed and gradual decrease highlights a positive feature of Saudi oil exports, namely the fact that events and developments outside the industry do not have direct influential power on export levels.

Figure 7 B-index results for oil trade Kingdom of Saudi Arabia



Source: Own calculations based on World Bank (2017) WITS database

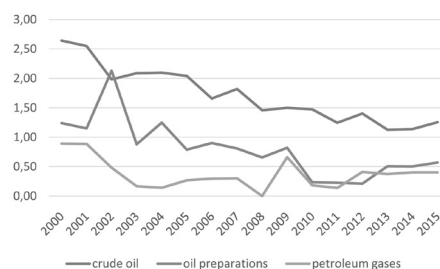
As for oil preparations (2710) and petroleum gases (2711), changes in trade volume follow a relatively similar trajectory, starting from above 1,5 in the first third of the study period, arriving at around 0,5 in 2015. This pattern suggests that over fifteen years, Saudi Arabia lost its comparative advantage in exporting these types of goods.

The Saudi economy relies heavily on crude oil exports, which definitely ensure the stability of the national economy in the short term. However, a question mark remains at the long term economic vision of the country, as both industry related and non-industry related factors imply that no economy is viable with an exclusive reliance on oil. On one hand, the exploration of shale oil and advancement of traditional oil extraction technology brings about a larger scale supply and thus a fiercer competition in the market. On the other hand, the generally known worldwide tendencies of shifting towards renewable energy sources and green technologies under the flag of environmental awareness are not working in favour of continuous oil dominance either.

The United Arab Emirates

Finally, let us take a look at the developments of oil trade advantages for the United Arab Emirates for the study period. Similar to what was observed for the other Gulf States, downward sloping B value is obtained after necessary calculations are performed. Crude oil trade (2709) account for the highest B value (2,3) at the beginning of the new millennium, followed by oil preparations (1,4) and petroleum gases (0,5). All three product categories showed a decrease throughout fifteen years, the degree of which was in parallel to initial value sizes. Crude oil trade B values dropped the most, although still remaining at the 'competitive league' above 1, whereas oil preparations (2710) trade has become comparatively disadvantageous with a final value of slightly more than 0,5 in 2015. For this product type, the period between 2010 and 2012 was characterized by unprecedented low and disappointing B values, which can neither be explained by political, nor financial reasons (*Figure 8*). Petroleum gas (2711) trade was not the strongest branch of UAE foreign trade even in 2000, and in harmony with generally observed tendencies, B values further decreased with time since then.

Figure 8 B-index results for oil trade of the United Arab Emirates



Source: Own calculations based on World Bank (2017) WITS database

Following the instructions of *Hinloopen - van Marrewijk* (2001), the obtained B values are categorized and shown in details for each year of the study period, as a final step of comparative advantage analysis. The observed distribution of B categories over time seem to confirm the assumptions drawn from independent country analysis about an overall decreasing tendency (share of A categories was increasing) in GCC competitiveness (non-competitive Balassa indices) in oil trade over the course of the study period (*Table 2*).

Table 2 Frequency of Balassa index category for 6 Gulf countries, over study period

category	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
A	9	8	8	11	10	13	13	13	14	14	15	15	15	14	14	14	200
B	7	7	8	5	6	3	4	3	2	2	1	1	1	2	2	2	56
C	1	2	1	1	1	1	0	1	1	1	1	2	0	2	1	0	16
D	1	1	1	1	1	1	1	1	1	1	1	0	2	0	1	2	16
Total	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	

Source: Own calculations based on World Bank (2017) WITS database

Note: Frequencies includes three oil products (2709-2711) analysed and all GCC countries for a given year. Category 'A' denotes the number of non-competitive Balassa index values while 'B'; 'C'; 'D' categories refer to the number of competitive index values. The total value of the B index categories for 3 product types for 6 countries is 18 per year.

Table 3 presents the distribution of competitiveness categories, highlighting individual competitiveness levels for certain country-product code pairs within the study period. Apart from outstanding competitiveness for certain pairings (for example Saudi Arabia in crude oil or Qatar in petroleum gases), the dominance of non-competitive indices (category A) is unquestionable, thus it can serve as additional evidence to refute our first hypothesis (H1).

Table 3 Frequency of Balassa index category by Gulf countries between 2000 and 2015

Country	Product code	Count of B index category			
		A	B	C	D
United Arab Emirates	crude oil	0	11	5	0
	oil preparations	12	3	1	0
	petroleum gases	16	0	0	0
Bahrain	crude oil	16	0	0	0
	oil preparations	14	2	0	0
	petroleum gases	16	0	0	0
Kuwait	crude oil	4	12	0	0
	oil preparations	11	5	0	0
	petroleum gases	16	0	0	0
Oman	crude oil	13	3	0	0
	oil preparations	16	0	0	0
	petroleum gases	16	0	0	0
Qatar	crude oil	16	0	0	0
	oil preparations	16	0	0	0
	petroleum gases	0	6	7	3
Saudi Arabia	crude oil	0	0	3	13
	oil preparations	9	7	0	0
	petroleum gases	9	7	0	0
	Total	200	56	16	16

Source: Own calculations based on World Bank (2017) WITS database

Note: Category 'A' refers to non-competitive Balassa index values. Category 'B', 'C', and 'D' refer to competitive Balassa index values.

As a result of these factors, the level of competitiveness significantly dropped for all GCC countries, and only three countries (Saudi Arabia, United Arab Emirates and Kuwait) remained to boast with comparative advantage in oil trade at the end of the study period which was sustained for not more than one oil products in the case of each country. In addition, the distribution of competitiveness categories was also decreasing for all GCC countries for the analysed period. This tendency persuasively suggests that H1 should be rejected and H2 partially can be accepted. A tendency

of generally diminishing comparative advantage in oil trade for the GCC group was revealed as a consequence of economic, financial, political reasons, including the aftermath of the financial crisis, regional instability, the Syrian conflict, fluctuating international oil prices.

The GCC economies still rely on oil as the main source of export and fiscal revenues but they have to establish the non-oil economy that will be needed in the future when oil revenues start to drop (IMF 2014).

The EU aims to reduce their reliance on external suppliers of oil and gas for 2020 (EC, 2018), thus, decreasing consumption of crude oil and its derived products will be expected in the future.

From Hungarian aspects, investing in new technologies; widening crude oil portfolio; transforming production from fuel to non-fuel products can be expected in the future (MOL, 2018). Therefore, the demand for GCC's oil products might fall down in the next decades.

Conclusions and discussion

Based on a quantitative analysis conducted with comparative advantage measures (RCA indices), only four out of six GCC member states (Kuwait, the Kingdom of Saudi Arabia, United Arab Emirates, and Qatar) were found to possess an initial competitive status for at least one oil product of the three analysed product category, which clarifies the fact that H1 hypothesis needs to be rejected.

However, a tendency of generally diminishing comparative advantage in oil trade for the GCC group was revealed as consequence of a handful of economic, financial, political reasons, including the aftermath of the financial crisis in 2008, regional instability, fluctuating international oil price levels (H2). As a result of these factors, the level of competitiveness significantly dropped for all GCC countries, and only three countries (Saudi Arabia, United Arab Emirates and Kuwait) remained to boast with comparative advantage in oil trade at the end of the study period (which was sustained for not more than one oil products in the case of each country).

In light of the study outcome, our suggestions for GCC member states - to keep their current positions in the league of developed oil trader countries - would be as follows:

Carry on and broaden the pool of efforts devoted to mitigating their present excessive exposure to the oil industry. Since most of these countries have already launched long term national projects aiming at economic diversification, what they need now is only the enforcement of adherence to the cornerstones already laid down in these visions.

GCC societies should foster tighter cooperation with each other. These countries already realized that they have many things common, which facilitates maintaining a co-operative and mutually assistive approach. For instance, sharing the same culture and language opens the doors of making further steps towards a more centralized law enforcement and bureaucracy, which is bound to be more cost-efficient than what these elements of statehood cost today.

Stagnation of oil prices at low levels and falling energy demand of the EU and the World has compelled these countries lately to give up their squandering social benefit provi-

sion policy, which – is going forth along the same lines – is a measure that undoubtedly contributes to a healthier economic structure.

Finally, it should be noticed that our study also has some limitation. Trade values required to perform computations of Balassa indices were missing in some cases, which had to be handled in applying substitution of missing values by 0 (in that case zero trade flows were assumed). The model of the revealed comparative advantage assumes homogeneous products traded and perfect competition in international markets. The deviation of market conditions from perfection might provide directions for future research.

References

- Acin, D. (1974): A nemzetközi kereskedelem elméletének áttekintése és elemzése. *Létünk*, 3(1), pp. 1-179.
- Ajluni, S. (2003): The Palestinian Economy and the Second Intifada. *Journal of Palestine Studies*, 32(3), pp. 64-73. <https://doi.org/10.1525/jps.2003.32>.
- Almas, L. K. – Hajiyev, N. U. (2013): Azerbaijan's Current and Potential Comparative Advantage: An Exploratory Study (Publication). Selected Paper prepared for presentation at the International Conference on Policy Modeling (EcoMod 2013) Prague, Czech Republic, July 1-3, 2013.
- AlQudah, A. – Badawi, A. – AboElsoud, M. E. (2016): The Impact of Oil Sector on the Global Competitiveness of the GCC Countries: Panel Data Approach. *Research Journal of Finance and Accounting*, 7(20), pp. 32-39. ISSN 2222-2847
- Ádám, D. – Bodnár, L. – Lúspay, M. (2015): Iszlám bankrendszer az Egyesült Arab Emírségekben. *Hitelintézeti Szemle*, 14(Special edition), pp. 72-89. Retrieved from <http://www.hitelintezetiszemle.hu/letoltes/6-adam-bodnar-luspay-miklos.pdf>
- Balassa, B. (1965): Trade Liberalisation and "Revealed" Comparative Advantage. *The Manchester School*, 33(2). <https://doi.org/10.1111/j.1467-9957.1965.tb00050.x>
- BBC (2016a): Syria: The story of the conflict. (2016, March 11). Retrieved April 26, 2017, from <http://www.bbc.com/news/world-middle-east-26116868>
- BBC (2016b): United Arab Emirates country profile. (2016, September 28). Retrieved April 25, 2017, from <http://www.bbc.com/news/world-middle-east-14703998>
- BBC (2015): What is 'Islamic State'? (2015, December 2). Retrieved April 26, 2017, from <http://www.bbc.com/news/world-middle-east-29052144>
- Bernstein, W. J. (2008): *A Splendid Exchange: How Trade Shaped the World*. Atlantic Monthly Press, New York, 2008. ISBN-10: 184354668X
- BP (2016): British Petroleum Company statistical review of world energy. London: British Petroleum Co. Retrieved March 13, 2017, from <https://www.bp.com/content/dam/bp/pdf/energy-economics/statistical-review-2016/bp-statistical-review-of-world-energy-2016-full-report.pdf>
- CAPP (2017): Canadian Association of Petroleum Producers Canada's Oil Sands. Retrieved April 25, 2017, from <http://www.canadasoilsands.ca/en/>
- Crude Oil Prices (2017): 70 Year Historical Chart. Retrieved March 13, 2017, from <http://www.macrotrends.net/1369/crude-oil-price-history-chart>
- EC (2018) European Commission Energy Efficiency Retrieved January 2019, 28 from <https://ec.europa.eu/energy/en/topics/energy-efficiency>
- EIA (2013): Energy Information Administration (US). (2013, July 8). Kuwait. Retrieved May 8, 2017, from http://www.europarl.europa.eu/meetdocs/2009_2014/documents/darp/dv/darp20140213_11_/darp20140213_11_en.pdf
- EIA (2015): Energy Information Administration (US). (2015, August 6). Russia is world's largest producer of crude oil and lease condensate. Retrieved May 3, 2017, from <https://www.eia.gov/todayinenergy/detail.php?id=22392>
- EIA (2016): Energy Information Administration (Beta). (2016, January 28). Oman. Retrieved May 8, 2017, from <https://www.eia.gov/beta/international/analysis.cfm?iso=OMN>
- GCC (2017): Secretariat General of the Gulf Cooperation Council: The Cooperation Council for the Arab States of the Gulf homepage. About GCC: Objectives Retrieved March 18, 2017, from <http://www.gcc-sg.org/en-us/About-GCC/Pages/StartingPointsAndGoals.aspx>
- Hinloopen, J. – van Marrewijk, C. (2001): On the empirical distribution of the Balassa Index *Welwirtschaftliches Archiv* 137(1), pp. 1-35. Retrieved from <http://www2.econ.uu.nl/users/marrewijk/eta/pdf%20files/balassa%20wwa.pdf>
- Huggins, R. – Mahroum, S. – Thompson, P. (2016): The Middle East Competitiveness Report: Regional and Territorial Analysis (Rep.). Cardiff University, INSEAD, Nottingham Business School. Retrieved May 2017, 13 from <https://centres.insead.edu/innovation-policy/publications/documents/MiddleEastCompetitivenessReport2016.pdf>
- IMF (2014) Staff Discussion Note. Economic Diversification in the GCC: Past, Present, and Future Retrieved January 2019, 28 from <https://www.imf.org/external/pubs/ft/sdn/2014/sdn1412.pdf>
- Jámbor, A. (2009): A magyar gabonafélék és feldolgozott termékeinek komparatív előnyei és versenyképessége az EU-15 országainak piacain. *Közgazdasági Szemle*, 56(5), pp. 443-463. Retrieved from http://www.epa.hu/00000/00017/00159/pdf/03muhely_jambor.pdf
- Jáni, A. (2011): Az iraki háború előzményei és az intervenció hatása a nemzetközi politikára. Szakdolgozat. Budapest: Budapesti Gazdasági Főiskola. Külkereskedelmi Főiskolai Kar
- Jones, P. (2012): The Arab Spring: Opportunities and implications. *International Journal: Canada's Journal of Global Policy Analysis* 67(2), pp. 447-463. <https://doi.org/10.1177/002070201206700214>
- Lövész, G. (2006): OPEC. Szakdolgozat. Budapest: Budapesti Gazdasági Főiskola. Külkereskedelmi Főiskolai Kar
- Mikesy, Á. (2009): A fekete arany nyomában. Scientific TDK article. Budapesti Corvinus Egyetem. Retrieved April 28, 2017, from <http://szd.lib.uni-corvinus.hu/1715/>
- MOL (2018) MOL Group Homepage. Strategy 2030 Retrieved 28 January, 2019, from <https://molgroup.info/strategy2030/>
- Norwegian Petroleum (2017): Retrieved April 25, 2017, from <http://www.norskpetroleum.no/en/>

Saudi Arabian Monetary Authority (2016): Annual Statistics. Retrieved April 25, 2017, from <http://www.sama.gov.sa/en-US/EconomicReports/Pages/YearlyStatistics.aspx>

Siggel, E. (2006): International competitiveness and comparative advantage: A survey and a proposal for measurement. *Journal of Industry, Competition and Trade*, 6(2), pp. 137-159. Retrieved from <https://link.springer.com/article/10.1007/s10842-006-8430-x>

Smith, A. (1776): An inquiry into the Nature and Causes of the Wealth of Nations. MetaLibri, Lausanne 29 May 2007. Retrieved April 25, 2017, from https://www.ibiblio.org/ml/libri/s/SmithA_WealthNations_p.pdf

Somogyi, M. (2009): Versenyképesség a szakirodalomban – A fogalmi megközelítések összegzése és elemzése (I. rész). *Vezetéstudomány - Budapest Management Review*, 40 (4), pp. 54-64.

Szűcs, F. K. (2007): A kőolaj hajnala, aranykora és alkonya. *Természet Világa*, 138(1), pp. 13-16.

Talal-Azimi, R. (2016): Bahrain: Structural adjustments are necessary to mitigate the impact of low oil prices (Rep.). Rabo Research Global Economics & Markets. Retrieved May 05, 2017, from: <https://economics.rabobank.com/publications/2016/june/bahrain-structural-adjustments-are-necessary-to-mitigate-the-impact-of-low-oil-prices/>

Tomolya, J. (2007): A „34 napos” izraeli-libanoni háború (Rep.). Retrieved March 13, 2017, from: <https://anzdoc.com/a-34-napos-izraeli-libanoni-haboru.html>

Vivoda, V. (2012): Japan's energy security predicament post-Fukushima. *Energy Policy*, 46, pp. 135-143. <https://doi.org/10.1016/j.enpol.2012.03>.

Weiss, B. G. – Green, A. H. (1995): A Survey of Arab History. Cairo, Egypt: The American University Press. ISBN 9774241800 (pbk.)

World Bank (2017): World Integrated Trade Solutions (WITS) database. Retrieved March 13, 2017, from: <https://wits.worldbank.org/WITS>

Appendix Individual B-index results for oil trade for GCC countries

product code	Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
crude oil	United Arab Emirates	2.64	2.55	1.98	2.09	2.10	2.04	1.66	1.82	1.46	1.50	1.47	1.25	1.40	1.13	1.14	1.26
oil preparations	United Arab Emirates	1.24	1.15	2.13	0.88	1.25	0.79	0.90	0.81	0.66	0.82	0.23	0.23	0.21	0.51	0.50	0.57
petroleum gases	United Arab Emirates	0.89	0.89	0.48	0.17	0.14	0.27	0.30	0.30	0.00	0.66	0.18	0.14	0.41	0.37	0.40	0.40
crude oil	Bahrain	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
oil preparations	Bahrain	1.14	1.12	1.12	0.97	0.72	0.66	0.52	0.55	0.25	0.28	0.42	0.35	0.22	0.19	0.20	0.21
petroleum gases	Bahrain	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
crude oil	Kuwait	1.34	1.47	1.13	1.14	1.22	0.00	1.13	1.19	1.05	1.02	0.83	0.93	0.00	1.02	1.09	1.27
oil preparations	Kuwait	1.56	1.38	1.48	1.35	1.15	0.00	0.82	0.94	0.64	0.82	0.69	0.57	0.00	0.47	0.48	0.53
petroleum gases	Kuwait	0.40	0.39	0.33	0.29	0.30	0.00	0.22	0.23	0.18	0.20	0.23	0.18	0.00	0.16	0.11	0.17
crude oil	Oman	1.05	1.17	1.02	0.82	0.67	0.66	0.44	0.44	0.40	0.48	0.47	0.38	0.45	0.41	0.55	0.65
oil preparations	Oman	0.06	0.02	0.01	0.03	0.02	0.02	0.01	0.08	0.08	0.04	0.05	0.01	0.07	0.03	0.05	0.09
petroleum gases	Oman	0.00	0.59	0.57	0.32	0.43	0.41	0.41	0.44	0.32	0.32	0.22	0.13	0.22	0.19	0.26	0.01
crude oil	Qatar	0.46	0.86	0.40	0.67	0.63	0.65	0.49	0.59	0.47	0.54	0.45	0.36	0.38	0.32	0.34	0.39
oil preparations	Qatar	0.05	0.06	0.16	0.17	0.15	0.00	0.09	0.08	0.05	0.08	0.21	0.17	0.18	0.14	0.13	0.14
petroleum gases	Qatar	1.80	2.07	1.87	1.60	1.70	1.56	1.58	2.04	2.33	2.21	3.72	3.91	4.40	3.83	4.14	4.54
crude oil	Saudi Arabia	7.44	7.80	7.60	7.02	6.81	6.90	4.98	5.49	4.48	4.90	4.27	3.86	4.43	3.80	3.95	4.82
oil preparations	Saudi Arabia	1.31	1.94	1.56	1.50	1.67	1.55	1.01	0.89	0.63	0.79	0.66	0.52	0.50	0.36	0.54	0.71
petroleum gases	Saudi Arabia	1.73	1.24	1.53	1.41	1.24	1.06	0.96	1.07	0.72	0.67	0.63	0.45	0.43	0.34	0.33	0.37

Source: own calculation based on sample data

INFLUENCING FACTORS OF INNOVATION PERFORMANCE IN FAMILY FIRMS

BASED ON AN EMPIRICAL RESEARCH

Investigation of innovation performance of family firms is rather new area in family business research. Studies focusing on the relationship between the overall performance of family businesses and their innovation activities conclude that family firms seem to innovate less, despite their ability to innovate more than other type of companies. De Massis et al. (2015) investigated how family firm managers can resolve this paradox and unlock the innovation potential of the organisations in which they work.

Based on the results of international studies comparing innovation performance of family versus non-family firms, the authors' research focused on the investigation of the differences/similarities of innovation performance of family firms, first of all small and medium sized companies located in Hungary. The novelty of the article is the analysis of the influence of various management decision-making tools on the innovation performance of SMEs, in particular family firms. The results of the empirical research confirm that management decision tools have positive impact on innovation performance of SMEs and family firms introduce more innovations than other type of companies¹.

Keywords: family firms, innovation, innovation performance, decision making tools

Most influential articles of family business research – measured by citation counts – rarely deal with analysis of aspects of innovation. Some works contribute by providing the theoretical bases for future inquiry, while other articles provide empirical evidence of relationships that affect the way theory is applied by identifying contingencies that were previously unanticipated or not incorporated into theory. The first group of articles discusses general family business articles including literature reviews and studies that focus on definitional issues and other topics. The second group of articles is based on agency theory, whereas the third group of articles focuses on the resource-based view of the firm (Chrisman et al., 2010).

Understanding of the succession process in family firms is crucial and a significant amount of family firm research focuses on it (Debicki et al., 2009; Noszkay, 2017). In this context, Cabrera-Suárez et al. (2001) used the resource and knowledge-based views in order to develop an integrative model of knowledge transfer and successor development in family firms. Also, Makó et al. (2016) explain that if the distinctive tacit assets that reside in family firms (e.g. commitment, trust, reputation, know-how) can be transferred across generations, the likelihood of continued survival and growth can be enhanced. Habbershon et al. (2003) presented a unified systems perspective of family firm performance. In this perspective they highlighted that understanding of noneconomic goals of family firms is critical because they could affect firm behaviours and performance including the motivation of firms pursuing long term investments and innovations or shying away from such activities.

Moreover, family firms have certain characteristics that can work against their innovation activities. Chrisman

et al. (2015) found that, they focus more on running a solid and sustainable business than introduction of disruptive innovations they might not fully control. Family firms might suffer from limited exposure to innovative ideas from other industries, because the owners and managers of family firms usually have not worked in other companies. Instead, they rely more on ideas originating from in-house which is based on the belief they know more than anyone else about what it takes to succeed. Despite these factors, many family-owned firms are among the most innovative in their industries (Llach – Nordqvist, 2010; Craig – Dibrell, 2006).

The paper starts with reviewing the definition of family firms, innovation and key concepts related to innovation research in family firms as well as the results of empirical analysis carried out in European countries in the past decades. Then, the methodological procedure is explained and the main results of the survey are presented. The paper concludes with the summary of findings and conclusions as well as limitations of the empirical investigation.

Literature review and definitions

What kind of companies are family firms?

Family firms are the backbone of most national economies, consisting of very diverse, heterogeneous groups of firms. The share of family firms within the total number of enterprises oscillates between 20 to 70 percent across the EU countries and about 70 percent in the Hungarian economy. According to estimates, these firms are responsible for more than half of the GDP and employment in Hungary (Noszkay, 2017).

The relevance of family firms motivated researchers to make classifications for better understanding of this complex system. This ambition resulted in a wide variety of

¹ This article is based upon a conference lecture Döry, T. – Németh, K. (2017): "Influence of professional decision making tools on innovation in SMEs" that was presented at The XXVIII ISPIIM Innovation Conference – Composing the Innovation Symphony, Austria, Vienna on 18-21 June 2017.

understandings of family firms in the literature. Some research articles understand family business run by the nucleus family of founders, while some others also include the extended family, i.e. cousins and uncles as second and multiple generations of heirs or successors (Gersick et al., 1997; Habbershon – Williams, 1999).

Handler (1989) made one of the first classifications of definitions of family firms by using the following four factors: i) ownership-management, ii) definitions building on subsystems, iii) definitions highlighting generation succession, and iv) concepts based on multiple criteria. Notwithstanding, researchers seem to agree that ownership, rather than governance or management, is the key differentiating factor between family and nonfamily firms (Klein, 2000).

Chrisman et al. (2005) reviewed important trends in the strategic management approach to studying family firms and concluded on the definition of family firms in the following way:

“...the theoretical issues with respect to defining the family firm are still open to debate; however, the components-of-involvement and the essence approaches appear to be converging” (Chrisman et al. 2005, p. 557).

We can see a general tendency in the literature that family firm definitions move toward multiple criteria, because these extended interpretations, including family firms owned and run by the founder, multi-generation family firms, firm owned by several families, family firm run by external managers, etc., provide more research opportunities and possibilities for comparisons. In line with this understanding, Poza (2007, p. 6.) provides with the following definition of family firms:

1. ownership control (15 percent or higher) by two or more members of a family or a partnership of families,
2. strategic influence by family members on the management of the firm, whether by being active in management, by continuing to shape the culture, by serving as advisors or board members, or by being active shareholders,
3. concern for family relationships, and
4. the dream (or possibility) of continuity across generations.

In addition to academic definitions, there is a European definition of family firms, which is based on a report produced by an expert panel led by KMU Forschung Austria (EC, 2009). On request of the European Commission, Mandl (2008) analysed 90 different definitions of family firms in 33 countries and could not identify a universal definition that could be used in wide range of areas, such as public administration, statistics or socio-economic research. Still, the expert panel came up with a definition of family firms, which has the following key elements: a family business: i) reserves most decision rights for natural person(s) who founded the enterprise, or such natural person(s) who have obtained ownership in the enterprise or spouse, parents, children or children's children of the persons already mentioned, ii) majority of decision-making rights are indirect or direct, iii) at least one representative of the family is formally involved in the governance of the firm and iv) stock-exchange-listed companies can be considered as fam-

ily businesses in the case when the person who founded the company or purchased it or his family, descendants have ownership over at least 25 % of shares represents right decision (EC, 2009).

In conclusion, we have our own definition of family firms that contains the following characteristics out of which at least two should be fulfilled:

- one or more family owns at least 50% of the properties of the firm,
- a group of family members exercises the control over the firm,
- at least one family member takes part in the management of the company and has a leadership role,
- at least two family members take part in the operation of the company as manager, consultant or employee.

Innovation and family firms

Innovation usually starts with an idea or invention, and it is a first attempt to carry it out in practice. In order to turn an invention into innovation, individuals and companies need to combine different types of knowledge, skills and resources. This process is highly complex and it has the following main aspects: i) the fundamental uncertainty inherent in all innovation projects, ii) the speed of the process, because innovators should move quickly before some other do other they can't reap the economic reward, and iii) the prevalence of resistance to new ways at all levels of society, which threatened to destroy all new initiatives and urge entrepreneurs to fight hard to succeed in their projects (Fagerberg, 2005).

Innovation and entrepreneurship are closely related terms, and innovation is often understood as heart of entrepreneurship. This is because entrepreneurs often use innovation to create change and exploit an opportunity. We can say that innovation is the introduction of something new or novel but it should not be something mould-breaking. The role of innovation and innovativeness in the entrepreneurial process was first highlighted in the seminal work of Schumpeter (1934) who described the concept of “new combination”. The definition of innovation is often associated with Schumpeter's (1934) work and with his approach to economic development. One of the most quoted paragraphs of his book describes the meaning of this concept and covers five cases of innovation: i) the introduction of a new or improved good or service, ii) the introduction of a new method of production, iii) the opening of a new market, iv) the conquest of a new source of supply or raw materials or half-manufactured good,; and v) the carrying out of the new organisation of any industry.

Innovation is difficult to define because it represents a continuum of activities from invention and paradigm shifts to incremental changes in products, processes and marketing. It should be stressed that even a series of small incremental innovations or little improvements could have an enormous impact on competitive advantage. In fact, the majority of commercially significant innovations are incremental rather than radical innovations. In addition, the frequency of innovation (i.e. occasional, frequent and

continuous) contributes to the impact of innovation on competitive advantage (Burns, 2013).

According to Burns (2013, p. 384.) the most frequent forms of innovation in corporate entrepreneurship are:

- product innovations – improvements in the design and/or functional qualities of a product or service,
- process innovation – revisions to how a product or service is produced so that it is better and cheaper, and
- marketing innovation – improvements in the marketing of an existing product or service, or even a better way of distributing or supporting an existing product or service.

Also, innovation could be seen as a process of reducing uncertainty, because learning more and proceeding lower uncertainty and risk associated with unknown. The idea behind the “innovation funnel” is that the further we go into the innovation project, the more it will cost and require more resources, but we will know much more. In fact, the innovation funnel is a roadmap that provides us with support to make decisions about resource commitment (Tidd – Bessant, 2013).

Conditions for successful innovation have been an important subject in the innovation management literature in the past decades. Success factors include cross-functional cooperation, commitment at the top and work floor, effective processes, customer-involvement, expertise, outstanding skills, adaptive capacity, networking, and company culture. Beck et al. (2010) focused in their research on human-related factors that are recognised as antecedents of innovation. Their results demonstrate that skills present in the company, involvement of the employees in the innovation process, and the clarity of direction of the top to the work floor matter the most in successful innovations.

Since Schumpeter's (1934) work, there has been a consensus in the literature that innovation is one of the main factors that has a positive effect on company growth. Casillas – Moreno (2010, p. 269.) goes further and state that “...strategy of innovation in new products and new processes have a positive and significant influence on the firm's growth rate.” Therefore, innovation enables companies to explore new business opportunities and improves the company's competitive edge.

Family business research revealed that innovation processes in family firms are different from the one in other companies, because of the co-existence and interaction of two systems, namely the family and the company. This specialty makes family firms different from other enterprises, which has several implications on their innovation approach and processes.

Studies focusing on the relationship between the overall performance of family firms and their innovation activities conclude that family firms seem to innovate less, despite their ability to innovate more than other type of companies. De Massis et al. (2015) investigated how family firm managers can resolve this paradox and unlock the innovation potential of the organisations in which they work. They came up with the model of Family-Driven Innovation, which is a fit between the characteristics of a given family firm and the components of its innovation strategy.

The Family-Driven Innovation framework builds on contingency theory that indicates that there is no best way to organize innovation activities, because those processes are contingent, with other word dependent, on the internal and external situation. De Massis et al. (2015, p. 9.) defines Family-Driven Innovation model as “...an internally consistent set of strategic innovation decisions that allow family firms to resolve their innovation paradox by ensuring a close fit between these decisions and the characteristics of the family firm.” According to this model, three contingency factors describe the characteristics of family firms and capture their heterogeneity. These factors are the where, how, and what of family firms which could lead to heterogeneous innovation decisions. Also, innovation highly depends on the fit between the contingencies of heterogeneity of innovation decisions and the contingencies of heterogeneity of family firms. If there is a misfit between innovation decisions and family firm characteristics, it is unlikely that the company could create a competitive advantage through innovation. Finally, it should be stressed that if innovation decisions match the characteristics of the family firm, then FDI is possible and can lead to the creation of competitive advantage through innovation (De Massis et al., 2015).

Li – Daspit (2016) devoted their paper to better understanding of the heterogeneity of family firm innovation, because family business studies provide inconsistent findings with regard to the relationship between family involvement and firm innovation. They developed a typology of family firm innovation strategies, positing that the risk orientation, innovation goal, and knowledge diversity of family firms vary depending on i) the degree of family involvement in governance, and ii) the type of socio-emotional wealth (SEW) objective or intentions. According to these characteristics, family firms could implement the following four innovation strategies: i) limited innovator, ii) intended innovator, iii) potential innovator, and iv) active innovator. This classification has practical application possibility for managers of family firms who develop more appropriate innovation strategies.

According to Steeger – Hoffmann (2015) underlying reasons for innovation related differences between family and non-family firms can be divided into three categories:

- resources and capabilities,
- agency issues, and
- innovation strategies.

These concepts were utilised in a comprehensive study investigating a cross sectional sample of 1200 German SMEs. The conclusions of the study demonstrate that self-assessed family firms are less innovative than non-family firms. They also found that the level of ownership and management seem to play an important role. In addition, other elements such as the R&D-intensity, internationality, and radicalness explain innovation output to a greater extent. This indicates that family firms are potentially not as different from non-family firms concerning innovation (Steeger – Hoffmann, 2015).

While researchers have very similar point of views regarding R&D expenditures of family and non-family firms, there are contradictory findings of the correlation between

innovation performance and the so-called “familiness”. One of the strongest features of the resource-based point of view of family business was written by Habbershon – Williams (1999). According to Habbershon – Williams the “familiness” is the unique combination of resources which come from the family, from the interaction of family and the business system, and it provides a long-term competitive advantage of family businesses. Chrisman et al. (2003) believes that the familiness is an interaction between competence and resources arising out of family ownership. Pearson et al. (2008) describes it as a phenomenon that generates a competitive advantage and a source of family wealth. The research found that familiness has a positive impact on business, the business viability, the short and long term performance, but it may have negative consequences in some cases. According to Klein (2008) and Milton (2008) if the family business is based on confidence, on the direct communication line, on the selfless devotion of family members and on the long-term interests (such as improving the organization's identity), the familiness becomes a positive characteristic. If the family business is driven by a short-term personal interests the familiness has rather negative impact through apathy, inflexibility, nepotism, because of it reduces the energy levels of the organization. Habbershon et al. (2003) also

warn that the familiness related with the family business resources and capabilities simultaneously can help and restrict the operation of the family business.

Chin et al. (2009) analysed the patenting activity of companies and came up with the conclusion that there is a negative correlation between family influence and innovation performance of the firms. Gudmundson et al. (2003) found that family firms outperform non-family business in launching successful products and services.

Hsu – Chang (2011) view that family firms have some advantage because of their long-term, strategic-orientation that favour innovation. Craig – Dibrell (2006) see higher innovation potential of family firms because of their more flexible decision machining mechanisms. Notwithstanding, several scholars concludes that relatively few large-scale empirical investigation was carried out in this field of business research; therefore it is important to pay more attention to the analysis of innovation orientation of businesses and their innovation performance (O’Boyle et al., 2012).

Several researches were carried out in European countries that used both qualitative and quantitative research methods in order to analyse the complex system of innovation in- and outputs as well as the characteristics of family firms. The following table summarises the vari-

Table 1 Overview of main conclusions of family business research carried out in Europe focusing on innovation performance

<i>Country</i>	<i>Author(s), year</i>	<i>Main conclusions</i>
Austria	Hauck – Prüggl (2015)	Adaptability of the family and harmony between the family members positively influences the succession of the founder and provides opportunities for innovation, while family traditions and authority between generations has a negative impact on innovation.
	Weismeier – Sammer (2014)	Innovation orientation as familiness supports the generation of new business ideas, their exploitation and implementation - based qualitative assessment of a family business in tourism.
Belgium, Netherlands	Classen et al. (2012)	Wide research based innovation activities were revealed in case of non-family businesses.
	Beck et al. (2011)	Market oriented behaviour at multigenerational businesses is lower that set back their innovation performance.
United Kingdom	Laforet (2013)	Market conditions, the sector, business goals and long-term orientation has a positive impact on the innovation activity of family businesses.
Germany	Bergfeld – Weber (2011)	Ten successful family dynasty that supports radical innovation, represents a progressive culture for the maintenance of long-term survival
	Classen et al. (2014)	Family businesses outperform non-family businesses in the implementation of process innovation
	Hillebrand (2018)	The family management involvement impedes the level of innovation in family firms. The intention to cede family control to succeeding generations promotes the level of innovation in family firms.
	Kraiczy (2013)	Large proportion of family members in top managements negatively influences the risk taking of the CEO and the portfolio of new products.
	Steege – Hoffmann (2016)	The authors use different categories: self-assessed family businesses (willing), group them into majority ownership and proprietor led (able), and minority ownership family business (unable) and compared them to their nonfamily counterparts. Based on the sample (1,200 German companies) the researchers find that self-assessed family businesses generate less revenue with new products than nonfamily

Italy	Casprini et al. (2017)	This case study offers some insights into the family firm's distinctive capabilities that allowed it to overcome the barriers to knowledge acquisition and transfer in executing an open innovation strategy. These distinctive capabilities, labelled imprinting and fraternization, are theoretically rooted in two distinctive family firm traits, namely, the existence of non-economic goals.
	Cassia et al. (2012)	Common family values, intentions for reinforcement of the goodwill of the family, open communication between family members and low agent costs support product development processes.
	Cucculelli et al. (2016)	Family management hinders the introduction of new products, but succession could strengthen new product orientation.
	De Massis et al. (2016)	Professional external project leaders outperform those family businesses where project leaders are family members.
	Lazzarotti (2013)	Absorptive capacity of companies is influenced both by family and non-family factors in micro scale businesses.
	Pittino et al. (2013)	Family businesses rely more on research collaboration than non-family businesses.
Spain	Sanchez-Famoso et al. (2014)	Social capital has a positive impact on innovation performance.
Sweden	Grundström et al. (2011)	There is no direct link between innovation orientation of businesses and the structure of management.

Source: authors' compilation

ous approaches applied by scholars in different European countries (Table 1).

Eddleston – Kellermanns (2007) found that family firm performance improved when owner-managers involved other family members in the business and the involvement in management by family members can increase innovative behaviour (Zahra, 2005). Chrisman et al. (2015) states that there is an ongoing discussion in family business research about the “capability-willingness paradox”. This paradox says that family firms have higher capability and lower willingness with regard to their innovation attitude.

Based on the literature review, we can present factors of familiness in the context of innovation capability and willingness paradox (Table 2).

Table 2 Factors of familiness in the context of innovation capability and willingness paradox

<i>Innovation capability</i>	<i>Innovation willingness</i>
• Long-term orientation • Strong family ties • Tacit knowledge of the founder originated from long leadership role • Family wealth and assets	• Objectives and intentions of the owners • Economic and non-economic goals • Motivations • Organisational orientation • Socio-emotional capital

Source: authors' compilation based on Patel – Fiet (2011), Gómez-Mejia et al. (2007), Chrisman et al. (2015)

In conclusion, we can present the key findings of existing research on the topic of family firm's innovation process, which is different from the one of their non-family counterparts in terms of family involvement on innovation inputs, activities, and outputs:

1. *Innovation inputs*: family firms invest less resources in research and innovation activities (De Massis et al., 2015). Based on 108 primary studies, a meta-analysis shows that family firms generally invest less in innovation but achieve higher innovation outcomes (Duran et al., 2016). Even if family firms invest less in research and innovation, due to their longer-term orientation, the impact is higher. This could be because of concentration of wealth increases the sensitivity of owners to uncertainty and affects investment preferences of their firms. This attitude is different from those of other forms of organisations. Furthermore, the level of this investment correlates with the family invested. If it is low, the cautious behaviour of family firms is replaced by a more innovative attitude resulting in higher innovation investments (Gómez-Mejia et al., 2007).
2. *Innovation activities*: innovation activities are handled differently in family versus non-family firms. The reason behind could be the interaction of the two systems, namely the family and the enterprise, which affect the innovation behaviour of family firms (De Massis et al., 2016). Also, family firms organize their innovation processes differently and generally use a functional organisation with high levels of decisional autonomy given to project leaders. On the other hand, non-family firms mainly establish cross-functional teams to carry out these projects, with limited delegation of decisional authority that could have an impact on the speed of implementation of innovation projects.
3. *Innovation outputs*: family involvement affects innovation outputs, however findings of articles in the field are rather controversial. Some studies conclude that family involvement is negatively associated with

the quantity and quality of patents obtained, while others show that family involvement positively affects innovation outputs (Chin et al., 2009; Kellermanns et al., 2008). In addition, family involvement could mean high level of control over the firm. Several years of shared history between the family and the firm leads to socio-emotional endowments. This has strong implications not only on financial, but also non-financial goals, most importantly the continuation of family influence and the perseverance of long-established ties both within and outside the firm. The consequences might include several organisational aspects, such as the organisational culture, norms within the firm, the available routines and capabilities, as well as the network of the firm (Zellweger et al., 2012).

In the context of the theoretical background of our empirical research, we follow Schumpeter's (1934) classification of innovation and we define it as an offering in the format of new or novel product, service, process or an experience with a viable business model adopted by customers.

Management control system and family firm's innovation performance

The definition of management control systems (MCS) has evolved over the years. Early this activity was focus on the provision of more formal, financially quantifiable information to assist managerial decision making. Nowadays MCS embraces a much broader scope of information (external information related to markets, customers, competitors, nonfinancial information related to production processes, predictive information) and MCS is included several decision support mechanisms, formal or informal personal and organizational controls (Chenhall, 2003). "Management control systems provide information that is intended to be useful to managers in performing their jobs and to assist organizations in developing and maintaining viable patterns of behaviour" (Otley, 1999, p. 364.).

Conventionally, MCS are perceived as a passive tool providing information to assist managers. MCS is more active, it can give power to achieve the goals of the owner and manager. Contingency-based research perceives MCS as a passive tool designed to assist manager's decision making. Contingency-based research have focused on the following dimensions: budgeting, formality of communications and systems sophistication, budget slack, post completion audits, ABC/ ABM (Anderson – Young, 1999), non-financial performance measures, economic value analysis (Biddle et al., 1998), sophisticated capital budgeting cost consciousness, competitor focused accounting, strategic interactive controls and diagnostic controls, information which is related to issues concerning customers, product design, time, cost, resources and profitability (Davila, 2000).

In Simon's (1995) framework MCS have four levers: belief, boundary, interactive and diagnostic. The most MCS studies have focused on the interactive and diagnostic levers (Davila, 2000; Bisbe – Otley, 2004). Bisbe – Otley (2004) argued that compared to the belief and boundary levers, the interactive and diagnostic levers place more

attention on the relevance of the way controls are used. Accordingly, given that the current study aims to examine the effect of the MCS on the innovation performance of the firms, the study focuses on the interactive and diagnostic approaches to using controls.

The interactive approach uses the controls as an interaction and communication channel between managers at all hierarchical levels (Simons, 1995). These decision-making activities highlight the changing conditions of organizations. The interactive approach encourages the communication and can facilitate organizational learning and innovation. It can help the management to focus on critical performance variables which are linked to the implementation of organizational strategies (Dodge et al., 2017; Su et al., 2017).

Beside aspects of innovation performance, another interesting avenue of family business research is the analysis of the management control methods and the performance of the family firm. Implementation and application of management control systems and financial planning, cost accounting and economic or financial analysis methods also plays an important role in the performance of the SME firms as key success factors should take to planning, budgeting, analysing, measuring and evaluating useful information for decision making (Cosenz – Noto, 2015). The study by Duhan (2007) found that the information- and planning systems are useful management tools for achieving the strategic objectives of the firm and these technics generate creative innovation and balance between control and flexibility (Simons, 1995). The level of the involvement in management of family members and the consequent trust within the management team, the family firm long-term orientation may influence on the applied methods of management control. (Senftlechner – Hiebl, 2015), so the family nature of firms affects the use of management control systems.

Duréndez et al. (2007) analysed the relationship with the culture of organisation, management control systems and performance of Spanish family and non-family firms and confirmed that family businesses have higher hierarchical values and lower values of adhocracy than non-family businesses and the family businesses use a lesser extent of management control methods. The main reasons may be the following (Jorissen et al., 2005): overlap of the owner and manager relationship and centralised decision-making, the individual authority of the owner, and the strong interaction between the family and the company.

There are large number of studies which have a strong focus on the impact of the management control methods on the innovation performance. Dávila (2000) related positively the use of the management control methods with innovation. Bisbe – Otley (2004) found in Spain that the greater use of the management control methods has greater effect of innovation on the performance of small and medium enterprises. Several studies argue that the use of the management control methods has a positive impact on business performance (Adler et al., 2000; Laitinen, 2008; Duréndez et al., 2016).

Research design and sample information

Our empirical research focused on the investigation of influencing factors of innovation in family firms and

the differences/similarities of innovation performance of the surveyed companies, which included both family and non-family firms. In addition to shed light on the innovation performance of these two type of firms, we also investigated the use of management decision-making tools. This could be seen as a novel and relevant research aspect, because this issue was not explicitly analysed in the literature yet. Our underlying assumption is that if family firms use more extensively management decision tools, e.g. analytical technics such as value analysis, Balanced Scorecard technique, then they could increase the efficiency of their business processes, which might result in higher innovation performance than that of their counterparts.

In order to analyse this topic, we designed and carried out an on-line survey. The sample was compiled by using the Bisnode HBI database. First, we selected all those companies that have a headquarter in Hungary and their size is between 50 and 249 employees and the net income between 10 and 50 million euros and/or a balance sheet total between 10 and 43 million euros. We excluded from our survey those companies in which the state or any municipality has a majority share directly or indirectly. Also, we excluded companies from the financial sectors and the not-for-profit companies. This way we got a Hungarian medium-sized business sample that included 5,904 companies. We sent an email to 3,745 companies (the others didn't have an email address included in the Bisnode database) between 9 and 11 October 2016, and we closed the survey on 15 December 2016.

The rate of responses was rather low (5.21%) even if we sent reminders to companies, we selected into our sample. Still, we got 195 responses altogether that served the basis of our investigation. Taking into account the family control as a dichotomy factor, we classified 65% of our respondent companies as family firms and 35% as non-family firms (Table 3). 75% of the respondents became owner of the company in questions as founder, 17% purchased the company, and 3% purchased the company from family members, while 5% of the respondents inherited the ownership of the company.

Table 3 Company demography of respondents

<i>Descriptive statistics</i> (average)	<i>Family business</i> (N=127)	<i>Non-family business</i> (N=68)
Number of employees (person)	94	114
Age of company (year)	24,6	30
ROI ₂₀₁₅ (%)	8,75	12,03
ROE ₂₀₁₅ (%)	21,35	84,44
ROA ₂₀₁₅ (%)	9,71	13,41

Source: authors' compilation

Even if we tried to focus on medium-sized companies in the survey, 39% of the respondent companies has less than 25 employees, 8% between 26 and 50 employees, 20% between 51 and 100 employees, 32% between 101 and 250 employees. There were 127 family firms in our sample out of which 40% could be considered in the first-generation phase, meaning that the company is fully managed and controlled by the founder. Apart from them, 35% of the respondent companies went through a succession, 19% of the companies were managed by professionals coming from the same company and a mere 6% had professional leadership coming from outside the company in question. In order to make the analysis with the same number of companies in each category, we made a data compression and used the following categories in our investigation:

- companies managed by the founder (40%),
- companies with multi-generation management (35%), and
- family firms with professional management (25%).

Results

Innovation orientation versus ownership structure

First, we aimed to characterise the innovation orientation of the firms in the sample. These are managerial decisions that highly influence innovation performance and growth patterns of companies. For this purpose, we listed 12 items considering the results of the literature research (Miller, 1983; Lumpkin – Dess, 2001; Sandig et al., 2006; Casillas – Moreno, 2010). In order to use the internal orientation as a dependent variable in a later variance analysis, we applied factor analysis. We executed the analysis based on both the principal component analysis and the maximum likelihood method from the compression methods of factor analysis, and finally based on the variance proportion explained we left the solution valid according to the principal component analysis. The variance proportion confirmed the solution based on the Kaiser criterion concerning the number of factors since with the help of the three factors the variance proportion accepted in social sciences can be available that is 60%. Relating to the given factor analysis the cumulative variance of the three factors is greater than 69% which highly exceeds the expected minimum value.

In order to interpret the factors unambiguously rotating factors was necessary. Among different rotation procedures, the most clean-cut factors could be received by the Varimax rotation, a version of orthogonal rotation methods which is to maximise the variance explained by the factors, and tries to simplify the factor matrix in a way that it maximises the number of the variables of high factor weights per factor (Table 4).

Table 4 Rotated Component Matrix – business orientation factor model

	Component		
	1	2	3
A new product and/or service was developed in the last 5 years.	.805		
The company is a 'leader' in introducing new products / services, management techniques, operation technologies etc.	.764		
The company takes an 'initiating' role in the given sector; competitors just mainly react to that.	.741	Factor 1: innovation orientation and proactivity	
Research, development and innovation activities are highlighted at the company.	.688		
Management strives to apply new individual processes and production methods.	.666		
Strategic decision making is based on considering more options.	.890		
All financial and non-financial, short and long-term factors are considered.	.868	Factor 2: strategic orientation	
Management has the ability to implement change processes or new strategic directions.	.796		
Business management has a character of having high risk projects.		.863	Factor 3: willingness to take risks
The company operates with risks in order to maximise the advantages of utilizing opportunities.		.856	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalisation.
a. Rotation converged in 5 iterations.

Source: authors' compilation

We continued the analysis of the differences between the family and non-family firms with analysing the correlation between the identified innovation orientation factor and the owner background. Concerning innovation orientation and proactive attitude we couldn't prove significant difference between family and non-family firms based on the sample. By innovation orientation we mean introduction of new products and services, relevant research and development activities, while a company was considered proactive if it took some "initiating role" and their management were striving for application of new production methods and processes.

Our research results are in accordance with those Swedish ones of Grundström et al. (2011) saying that innovation orientation is independent of management structure.

Innovation orientation in relationship with the management structure

The connection of innovation orientation and proactivity identified among the factors of internal operation is also worth being analysed from the point of view of family business' management. F-statistics run after the variables' normality test and the homogeneity of variance resulted as follows in Table 5.

Table 5 ANOVA (family management – innovation orientation)

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig
Innovation orientation and proactivity	Between Groups	,092	2	,046	,072	,930
	Within Groups	78,965	124	,637		
	Total	79,057	126			

Source: authors' compilation

The null hypothesis of F-test can't be rejected considering the significance levels, thus the category averages do not differ significantly from each other, so based on the family business' management type there is not a difference concerning innovation orientation and proactivity, strategic orientation and willingness to take risks. This result slightly contradicts to the concept stating that family firms lead by later generations, the innovation orientation and willingness to take risks would decrease (Kellermans et al., 2008). Based on our sample, we can say that family firms managed by descendants of the founder could equally innovation-oriented, proactive and risk taker than the founder. This is good news and reflects high motivation of the generation currently leading of the surveyed firms and potentially a successful succession process.

Management control methods in relationship with the ownership, and the innovations

Due to the jungle of concepts and various interpretations in the area of professionalism it is a crucial question to make a statement in case of an own interpretation. In our primary research, we mean professionalism by using principles and professional tools in decision-making (Kelly et al., 2000). We excluded firms with less than 25 employees from the analysis because they do not mostly show a character of having a formalised structure, so we analysed the answers of 113 respondents. We analysed organisational frames related to professional management as well as methods, strategic and operative decision support procedures. Companies in the shortlisted sample perform differently considering individual organisational issues, solutions, areas of professionalism. 60% of the firms have strategic and business plans in written format, and less than 60% of the firms operate accounting, controlling, internal audit and enterprise resource planning systems. As for formalised training system and corporate social responsibility institutionalisation is of even a lower level.

Concerning planning, strategic planning in the first place we stated in our research that what type of strategies relating to the business' sustainable operation are outlined at the firms in the sample with more than 25 employees. Out of 113 firms with 25+ employees only 68 answered this block of the survey. Among them there are 51 family firms and 17 non-family firms. The majority of the respondents have strategies in connection with location development and environment protection, innovation strategy and corporate social responsibility strategy appear in a substantially less proportion in strategic management.

The next segment in the concept of professionalism to be analysed is the application of strategic management instruments. Here we analysed the type and the number of the instruments applied. Family firms can be characterised by a higher strategic instrument intensity than the non-family ones; while the number of the strategic decision support tools applied by family firms is 3.15 on average, and 2.54 in case of non-family firms. Comparing the values with the results of an Austrian research in 2013 analysing this problem in a sample of 432 firms, we can get a clearer picture since in neighbouring Austria the number of the strategic tools applied by non-family firms is 5.37 on average, in case of firms under family influence 3.55 on average. This means that Hungarian firms are lagging behind the SMEs in neighbouring Austria in terms of frequency of use of strategic tools. In our survey, we took into consideration the international research antecedents (Hiebl et al., 2013; Cadez – Guilding, 2008) of the topic. The most popular strategic tools are strategic planning and competitor analysis, more than the half of the firms in question use them. Only one third of the firms use SWOT analysis, strategic pricing, customer profitability analysis and value analysis. Other methods such as target costing, strategic cost management, lifecycle costing, benchmarking, Balanced Scorecard, show lower application frequency in the sample.

The intensity of operative decision support tool application is only slightly exceeding the extension of the strategic tool application, whereas family firms exceed the non-family ones (3.39 and 2.56) in the intensity of method application. If we compare these figures with the results of the Austrian research of 2013 mentioned earlier (Hiebl et al., 2013) where the number of operative management accounting tools by non-family firms is 6.03 on average, in case of firms under family influence 4.78 on average. Therefore, we can come to a conclusion that Hungarian SMEs are far behind concerning the level of application of operative management accounting tools in daily operation of the surveyed companies. Among the operative management control methods, the traditional methods have a definite advantage like total cost calculation, liquidity planning, budgeting, plan-fact analysis, break-even analysis. However, the crosstab analysis worked out gives a very weak correlation between the character of the methods and the owner background (Cramer $V=0.121$). Forecasting helping the future-oriented management is typical for less than the third of the respondents, in equal ratio for family and non-family firms.

If we execute the analysis of the correlation between the ownership structure of the business and the number

of the decision support tools (including both strategic and operative) applied with the help of variance analysis, we can state that there is no significant difference between the category averages ($F=1.573$; sign: 0.212). Based on the means plot figure we can come to a conclusion that family firms in the sample have more extended methodology than the non-family ones. As for the number and the character of the applied tools (both strategic and operative decision support) respondents vary whether it is a family-owned business or not, although the difference of the tool intensity is not significant according to the F-test.

Table 6 shows the average number of management control methods applied in case of different family management categories.

Table 6 Means of management control methods in different family business management configurations

<i>Management control methods</i>	
First generation	4,7
Multigenerational	7,9
Professional	7,0

Source: authors' compilation

If we narrow down the analysis to the generation composition and we examine the effect of letting the descendants in concerning the application of professional tools, then the F-test ($F=4,395$; Sig.: 0,041) highlights the correlation between the dependent (total number of strategic and operative tools) and independent (the generation composition of the family business' management) variables. Based on this result, it can be stated that family firms lead by descendants exceed family firms with the 1st generation management concerning the number of decision support tools applied. Also, we could cautiously say that generation change can result in more professionalism.

In the survey we looked at a broad variety of innovation activities companies potentially could carry out. In addition to the most frequent types of innovations such as product, service, process and marketing innovation (Burns, 2013), we had a broader understanding of innovation and included in the survey, e.g. logistic, sales and media innovation. This interpretation of innovation is based on the Oslo Manual (OECD/Eurostat, 2005). The Figure 1 below sums up the appearance frequency of the 12 individual innovation types in our sample.

Figure 1 Frequency of the different innovation types in the family firms in the sample (N=108)



Source: authors' compilation

Concerning the results obtained we highlight that the most frequently reported innovation is related to workplace organisation (54%), followed by service innovations (50%) and product innovations (48%). Concerning succession, innovations taking place in management and organisation methods are definitely important (Kraus et al., 2012), some 33% i.e. one third of family firms reported an innovation of this type.

We also classified the respondent firms into categories of low, medium and highly innovative firms, based on the frequency of different types of innovation they carried out in the past three years. Unfortunately, close to half (44%) of the surveyed companies didn't provide answers on their innovation activity, still it is interesting to see that the majority (47%) of the remaining firms could be considered as "medium-innovation performers" introducing 4-7 types of innovations out of 12 potential ones. We classified 29% of the companies as "low-innovation performers" and only 24% of respondents introduced at least 8 types of innovation as listed in the Oslo manual. This results indicate that SMEs could do a lot more to increase their innovation activities and reflects well the overall low innovation performance of Hungarian firms in the European Innovation Scoreboard. In the latest report, Hungary is classified as a "moderate innovator" country where only 15.5% of SMEs innovate in-house, while the share of SMEs with product and process innovations is even lower (13.7%) (EIS, 2018).

Furthermore, to measure innovation performance we formulated the so-called *Innov_activity(2012-2015)* variable in the following way: we fixed the individual innovation output elements as separate variables in SPSS making them dummy. We combined the 12 variables mentioned expressing innovation performance in a new variable (*SZUM_INNOV*) and by standardising this variable we formulated the index *Innov_activity(2012-2015)*. During the correlation analysis we stated that the family firms' innovation activity shows medium positive correlation ($r=0.225$; 0.255 and 0.363) with all the two types of professionalism.

We used the Pearson's correlation coefficient and bivariate linear regression analysis in order to test the correlation between the application of management decision tools as independent variable and the innovation performance as dependent variable. We found medium correlation ($r=0.356$) between application of management decision tools and the innovation performance. Both the F-test ($F=15.522$, Sign: 0.000) and the t-test (Sign: 0.000) proved that variety applied management decision tools positively influences the innovation performance of investigated companies.

Relationship between innovation orientation and innovation performance

We analysed the correlation between innovation orientation of the surveyed companies and their innovation activity with Pearson's correlation coefficient and partial correlation coefficient. In the case of innovation activity, we controlled the size of company and age of company. As a result, we could observe a medium high correlation through the Pearson correlation coefficient ($r=0.417$, Sign: 0.000), whereas the partial correlation coefficient indicates weaker, still medium high correlation between the variables.

We can draw the following conclusions from the F- and t-test of our bivariate linear regression model where we defined innovation orientation as independent variable and innovation activity as dependent variable:

- the determinant correlation coefficient ($r^2=0.154$) indicates weak correlation between the dependent and independent variable,
- both the significance level of F-test (Sign: 0.000) and t-test proves the existence of correlation between investigated variables,
- including strategic orientation in addition to the innovation orientation variable into the regression model then the determinant coefficient increases ($r^2=0.312$) and improves the explanatory value of the model.

Finally, we can conclude based on the results of the t-test that both the innovation and strategic orientation positively influences the innovation activities of firms.

Summary and conclusions

In the literature review, we identified a research gap and designed an empirical investigation with the objective to enrich the knowledge concerning innovation performance of family firms. We set the following main goals:

- to compare family and non-family firms on a Hungarian sample based on their professionalisation and innovations performance,
- to analyse family firms of different management types concerning professionalisation and innovations performance, and
- to map the relationship between succession, professionalism and performance according to indicators based on authentic, reliable financial and accounting data.

We couldn't prove in our empirical investigation that there is a significant difference between family and non-family firms with regard to innovation orientation and proactive attitude, and willingness to take risks. However, we could say that family firms have a much stronger strategic, i.e. longer-term orientation than non-family firms. Also, family firms demonstrate a higher innovation performance than their non-family counterparts. Interestingly, they also have more written innovation strategies than non-family owned companies (44% vs. 35% respectively). The most frequently reported innovations were i) a new/novel work organisation or decision method (54%), ii) a new service introduced (50%), and iii) new product introduced on the market (48%).

Nevertheless, there are significant differences between the two groups of companies in the exploitation of strategic and operative management decisions methods. Our survey results proved that non-family firms employ more sophisticated system of this kind of tools.

Concerning innovation performance, the research justified with statistical tools that there is a correlation between the level of applying professional organisational solutions (i.e. strategic planning, controlling, internal audit, managerial accounting, enterprise resource planning,

managerial training system, external consulting organisation) and innovation performance. A moderately strong positive correlation could be found between the corporate governance practice of the family firms in the sample and the number of the decision support tools applied, so emphasising professionalism is not in vain among family firms. Certainly, analysis of cause and effect relations as a further research question could be a base for a future investigation. However, certain manifests of professionalism correlate with performance based on F statistics as follows:

- firms creating site development strategy exceeded those not having a site development strategy in the area of growth indicators namely asset expansion, profitability indicators such as ROA and ROI, and innovation performance,
- the innovation performance of those having innovation strategy exceeded those not having an innovation strategy,
- the innovation performance of those having a business plan for 1-3 years exceeded the innovation activity of those not having a plan, and they performed better in growth pace based on the averages of asset increase,
- those creating a social responsibility strategy performed better in innovation performance,
- from the applied decision support methods, kaizen costing (concerning income increase and innovation performance) and activity-based costing (concerning asset increase) have an effect on performance.

Among the limitations of our research could be mentioned that the results of the online questionnaires are not based on a representative sample, so the findings available for the whole sample could be analysed further on a larger representative sample of family firms. Therefore, we can see the above discussed findings, statements as valid only for the firms in the sample. Actors of several sectors and national economy branches took part in both quantitative data collection, so it would be worth analysing the sector characters in the future. A single data collection may show distortions; hence it would be worth doing some longitudinal and panel data analyses among family firms. In our research the analysis of innovation performance was focused exclusively on the output side, because there was no data collected concerning research and development expenditures and personnel. In the future it would be worth expanding the analysis towards these fields too, in order to get a more comprehensive picture.

References

- Adler, R. – Everett, A. M. – Waldron, M. (2000): Advanced management accounting techniques in manufacturing: Utilization, benefits, and barriers to implementation. *Accounting Forum*, 24(2), pp. 131-150.
- Anderson, S. W. – Young, S. M. (1999): The impact of contextual and process factors on the evaluation of activity-based costing systems. *Accounting Organizations and Society*, 24(7), pp. 525-559.
- Beck, L. – Janssens, W. – Lommelen, T. – Sluismans, R. (2010): Research on innovation capacity antecedents: distinguishing between family and non-family businesses. Available: https://www.researchgate.net/publication/228781684_Research_on_innovation_capacity_antecedents_distinguishing_between_family_and_non-family_businesses [Accessed on 28 October 2017]
- Beck, L. – Janssens, W. – Debruyne, M. – Lommelen, T. (2011): A study of the relationships between generation, market orientation, and innovation in family firm. *Family Business Review*, 24(3), pp. 252-272. <https://doi.org/10.1177/0894486511409210>
- Bergfeld, M. – Weber, F. (2011): Dynasties of Innovation: Highly Performing German Family Firms and the Owners' Role for Innovation. *International Journal of Entrepreneurship and Innovation Management*, 13(1), pp. 80-94. <https://doi.org/10.1504/IJEIM.2011.038449>
- Biddle, G. C. – Bowen, R. M. – Wallace, J. S. (1998): Economic value added: some empirical EVAidence. *Managerial Finance*, 24(11), pp.60-71, <https://doi.org/10.1108/03074359810765714>
- Bisbe, J. – Otley, D. (2004): The effects of the interactive use of management control systems on product innovation. *Accounting, Organizations and Society*, 29(8), pp. 709-737. [doi:10.1016/j.aos.2003.10.010](https://doi.org/10.1016/j.aos.2003.10.010)
- Burns, P. (2013): Corporate entrepreneurship. Innovation and strategy in large organizations. Third Edition. New York: Palgrave-Macmillan
- Cabrera-Suárez, K. – Saá-Pérez, P. D. – García-Almeida, D. (2001): The succession process from a resource- and knowledge-based view of the family firm. *Family Business Review*, 14 (1), pp. 37-47. <https://doi.org/10.1111/j.1741-6248.2001.00037.x>
- Cadez, S. – Guilding, C. (2008): An exploratory investigation of an integrated contingency model of strategic management accounting. *Accounting, Organizations and Society*, 33(7-8), pp. 836-863. <https://doi.org/10.1016/J.AOS.2008.01.003>
- Casillas, J. C. – Moreno, A. M. (2010): The relationship between entrepreneurial orientation and growth: The moderating role of family involvement. *Entrepreneurship & Regional Development*, 22(3-4), pp. 265-291. <https://doi.org/10.1080/08985621003726135>
- Casprini, E. – De Massis, A. – Di Minin, A. – Fratini, F. – Piccaluga, A. (2017): How family firms execute open innovation strategies: the Loccioni case. *Journal of Knowledge Management*, 21(6), pp.1459-1485. <https://doi.org/10.1108/JKM-11-2016-0515>
- Cassia, L. – De Massis, A. – Pizzurno, E. (2012): Strategic innovation and new product development in family firms. An empirically grounded theoretical framework. *International Journal of Entrepreneurial Behavior & Research*, 18(2), pp. 198-232. <https://doi.org/10.1108/13552551211204229>
- Chenhall, R. H. (2003): Management control systems design within its organizational context: findings from contingency-based research and directions for future. *Accounting, Organizations and Society*, 28(2-3), pp. 127-168. [https://doi.org/10.1016/S0361-3682\(01\)00027-7](https://doi.org/10.1016/S0361-3682(01)00027-7)

- Chin, C.-L. – Chen, Y.-J. – Kleinman, G. – Lee, P. (2009): Corporate ownership structure and innovation: Evidence from Taiwan's electronics industry. *Journal of Accounting, Auditing & Finance*, 24(1), pp. 145–174.
- Chrisman, J. J. – Chua, J. H. – Steier, L. P. (2003): An introduction to theories of family business. *Journal of Business Venturing*, 18(1), pp. 441–448.
- Chrisman, J. J. – Chua, J. H. – Sharma, P. (2005): Trends and directions in the development of a strategic management theory of the family firm. *Entrepreneurship Theory and Practice*, 29(3), pp. 555–576. <https://doi.org/10.1111/j.1540-6520.2005.00098.x>
- Chrisman, J. J. – Kellermanns, F. W. – Kam, C. C. – Kartono, L. (2010): Intellectual Foundations of Current Research in Family Business: An Identification and Review of 25 Influential Articles. *Family Business Review*, 23 (1), pp. 9–26. <https://doi.org/10.1177/0894486509357920>
- Chrisman, J. J. – Chua, J. H. – De Massis, A. – Frattini, F. – Wright, M. (2015): The ability and willingness paradox in family firm innovation. *Journal of Product Innovation Management*, 32(3), pp. 310–318. <https://doi.org/10.1111/jpim.12207>
- Classen, N. – Carree, M. – Van Gils, A. – Peters, B. (2014): Innovation in family and non-family SMEs: An exploratory analysis. *Small Business Economics*, 42(3), pp. 595–609. <https://doi.org/10.1007/s11187-013-9490-z>
- Classen, N. – Van Gils, A. – Bammens, Y. – Carree, M. (2012): Accessing resources from innovation partners: The search breadth of family SMEs. *Journal of Small Business Management*, 50(2), pp. 191–215. <https://doi.org/10.1111/j.1540-627X.2012.00350.x>
- Cosenz, F. – Noto, L. (2015): Combining system dynamics modelling and management control systems to support strategic learning processes in SMEs: a Dynamic Performance Management approach. *Journal of Management Control*, 26(2–3), pp. 225–248. <https://doi.org/10.1007/s00187-015-0208-z>
- Craig, J. – Dibrell, C. (2006): The Natural Environment, Innovation, and Firm Performance: A Comparative Study. *Family Business Review*, 19(4), pp. 275–288. <https://doi.org/10.1111/j.1741-6248.2006.00075.x>
- Cucculelli, M. – Le Breton-Miller, I. – Miller, D. (2016): Product innovation, firm renewal and family governance. *Journal of Family Business Strategy*, 7(2), pp. 90–104. <https://doi.org/10.1016/j.jfbs.2016.02.001>
- Davila, T. (2000): An empirical study on the drivers of management control systems' design in new product development. *Accounting, Organizations and Society*, 25(4/5), pp. 383–409.
- De Massis, A. – Di Minin, A. – Frattini, F. (2015): Family-driven innovation: resolving the paradox in family firms. *California Management Review*, 58(1), pp. 5–19. <https://doi.org/10.1525/cmr.2015.58.1.5>
- De Massis, A. – Kotlar, J. – Frattini, F. – Chrisman, J. J. – Nordqvist, M. (2016): Family governance at work: Organizing for new product development in family SMEs. *Family Business Review*, 29(2), pp. 189–213. <https://doi.org/10.1177/0894486515622722>
- Debicki, B. J. – Matherne, C. F. – Kellermanns, F. W. – Chrisman, J. J. (2009): Family business research in the new millennium: An overview of the who, the where, the what, and the why. *Family Business Review*, 22 (2), pp. 151–166. <https://doi.org/10.1177/0894486509333598>
- Dodge, R. – Dwyer, J. – Witzeman, S. – Neylon, S. – Taylor, S. (2017): The Role of Leadership in Innovation. *Research-Technology Management*, 60(3), pp. 2–29. <https://doi.org/10.1080/08956308.2017.1301000>
- Duhan, S. (2007): A capabilities based toolkit for strategic information systems planning in SMEs. *International Journal of Information Management*, 27(5), pp. 352–367. <https://doi.org/10.1016/j.ijinfomgt.2007.03.001>
- Duran, P. – Kammerlander, N. – Van Essen, M. – Zellweger, T. (2016): Doing more with less: Innovation input and output in family firms. *Academy of Management Journal*, 59(4), pp. 1224–1264. <https://doi.org/10.5465/amj.2014.0424>
- Durendez, A. – García Pérez de Lema, D. – Madrid Guijarro, A. (2007): Advantages of professionally managed family firms in Spain. Advantages of professionally managed family firms in Spain. In: V. Gupta – N. Levenburg – L. Moore – J. Motwani – T. Schwarz (eds.): *Culturally-sensitive models of family business in Latin Europe: A compendium using the globe paradigm*. Hyderabad, India: ICAFI University Press
- Durendez, A. – Ruiz-Palomo, D. – Garcia-Perez-de-Lema, D. – Diéguez-Soto, J. (2016): Management control systems and performance in small and medium family firms/Sistemas de control de gestión y rendimiento en pymes familiares. *European Journal of Family Business*, 6(1), pp. 10–20. <https://doi.org/10.1016/j.ejfb.2016.05.001>
- EC (2009): Overview of family-business-relevant issues. Research, Networks, Policy Measures and Existing Studies. Final Report. <http://ec.europa.eu/docsroom/documents/10388/attachments/1/translations/en/renditions/native> (Date of access: August 15, 2018)
- Eddleston, K. A. – Kellermanns, F. W. (2007): Destructive and productive family relationships: a stewardship theory perspective. *Journal of Business Venturing*, 22(4), pp. 545–565. [10.1016/j.jbusvent.2006.06.004](https://doi.org/10.1016/j.jbusvent.2006.06.004)
- EIS (2018): European Innovation Scoreboard, 2018. Brussels: European Commission. http://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards/index_en.htm (Date of access: 10 September, 2018)
- Fagerberg, J. (2005): Innovation: A guide to the literature. In: Fagerberg, J. – Mowery, D. C. – Nelson, R. R. (eds.): *The Oxford Handbook of Innovation*. Oxford: Oxford University Press, pp. 1–26.
- Gersick, K. E. – Davis, J. A. – Hampton, M. M. – Lansberg, I. (1997): *Generation to generation: Life cycles of the family business*. Boston, MA: Harvard Business School Press
- Gómez-Mejía, L. R. – Haynes, K. T. – Núñez-Nickel, M. – Jacobson, K. J. – Moyano-Fuentes, J. (2007): Socioemotional wealth and business risks in family controlled firms: Evidence from Spanish olive oil mills. *Administrative Science Quarterly*, 52(1), pp. 106–137. <https://doi.org/10.2189/asqu.52.1.106>

- Grundström, C. – Öberg, C. – Öhrwall Rönnbäck, A. (2011): View and management of innovativeness upon succession in family-owned SMEs. *International Journal of Innovation Management*, 15(3), pp. 617–640. <https://doi.org/10.1142/S136391961100326X>
- Gudmundson, D. – Tower, C. B. – Hartman, E. A. (2003): Innovation in small businesses: Culture and ownership structure do matter. *Journal of Developmental Entrepreneurship*, 8(1), pp. 1–17.
- Habbershon, T. G. – Williams, M. L. (1999): A resource-based framework for assessing the strategic advantages of family firms. *Family Business Review*, 12(1), pp. 1–25. <https://doi.org/10.1111/j.1741-6248.1999.00001.x>
- Habbershon, T. G. – Williams, M. – MacMillan, I. C. (2003): A unified systems perspective of family firm performance. *Journal of Business Venturing*, 18, pp. 451–465. [https://doi.org/10.1016/S0883-9026\(03\)00053-3](https://doi.org/10.1016/S0883-9026(03)00053-3)
- Handler, W. C. (1989): Methodological issues and considerations in studying family businesses. *Family Business Review*, 2(3), pp. 257–276. <https://doi.org/10.1111/j.1741-6248.1989.00257.x>
- Hauck, J. – Prügl, R. (2015): Innovation activities during intra-family leadership succession in family firms: An empirical study from a socioemotional wealth perspective. *Journal of Family Business Strategy*, 6(3), pp. 104–118. <https://doi.org/10.1016/j.jfbs.2014.11.002>
- Hiebl, M. R. W. – Feldbauer-Durstmüller, B. – Duller, C. (2013): The changing role of management accounting in the transition from a family business to a non-family business. *Journal of Accounting & Organizational Change*, 9(2), pp. 119–154. <https://doi.org/10.1007/s00187-017-0254-9>
- Hillebrand, S. (2018): Innovation in family firms – a generational perspective. *Journal of Family Business Management*, 7(1), pp. 44–92. <https://doi.org/10.1108/JFBM-04-2018-0011>
- Hsu, L. – Mm C. – Chang, H.-C. (2011): The role of behavioral strategic controls in family firm innovation. *Industry & Innovation*, 18(7), pp. 709–727. <https://doi.org/10.1080/13662716.2011.604474>
- Jorissen, A. – Laveren, E. – Martens, R. – Reheul, A. M. (2005): Real versus sample-based differences in comparative family business research. *Family Business Review*, 18(3), pp. 229–246.
- Kellermans, F. W. – Eddleston, K. A. – Barnett, T. – Pearson, A. (2008): An exploratory study of family member characteristics and involvement: effects on entrepreneurial behavior in the family firm. *Family Business Review*, 21(1), pp. 1–14. <https://doi.org/10.1111/j.1741-6248.2007.00107.x>
- Kelly, L. M. – Athanassiou, N. – Crittenden W. F. (2000): Founder centrality and strategic behavior in the family-owned firm. *Entrepreneurship Theory and Practice*, 25(2), pp. 27–42. <https://doi.org/10.1111/j.1741-6248.2004.00013.x>
- Klein, S. B. (2008): Commentary and extension: moderating the outcome of identity confirmation in family firms. *Entrepreneurship Theory and Practice*, 32(6), pp. 1083–1088.
- Klein, S. B. (2000): Family Businesses in Germany: Significance and Structure. *Family Business Review*, 13(3), pp. 157–182. <https://doi.org/10.1111/j.1741-6248.2000.00157.x>
- Kraicz, N. (2013): Innovations in Small and Medium-Sized Family Firms – An analysis of Innovation-Related Top Management Team Behaviors and Family Firm-Specific Characteristics. Wiesbaden: Springer Fachmedien
- Kraus, S. – Pohjola, M. – Koponen, A. (2012): Innovation in family firms: An empirical analysis linking organizational and managerial innovation to corporate success. *Review of Managerial Science*, 6(3), pp. 265–286. <https://doi.org/10.1007/s11846-011-0065-6>
- Laforet, S. (2013): Innovation characteristics of young and old family-owned businesses. *Journal of Small Business and Enterprise Development*, 20(1), pp. 204–224. <https://doi.org/10.1108/14626001311298493>
- Laitinen, E. K. (2008): Value Drivers in Finnish Family-Owned Firms: Profitability, Growth and Risk. *International Journal of Accounting and Finance*, 1(1), pp. 1–41.
- Lazzarotti, V. (2013): Photovoltaic-technology adoption: Emerging peculiarities in an Italian micro-family firm. *International Journal of Entrepreneurship and Innovation Management*, 17(1-3), pp. 28–53. <https://doi.org/10.1504/IJEIM.2013.055247>
- Li, Z. – Daspit, J. J. (2016): Understanding family firm innovation heterogeneity: A typology of family governance and socioemotional wealth intentions. *Journal of Family Business Management*, 6(2), pp. 103–121. <https://doi.org/10.1108/JFBM-02-2015-0010>
- Llach, J. – Nordqvist, M. (2010): Innovation in family and non-family businesses: a resource perspective. *International Journal of Entrepreneurial Venturing*, 2(3-4), pp. 381–399. <https://doi.org/10.1504/IJEV.2010.037119>
- Lumpkin, G. T. – Dess, G. G. (2001): Linking two dimensions of entrepreneurial orientation to firm performance: The moderating role of environment and industry life cycle. *Journal of Business Venturing*, 16(5), pp. 429–451. [https://doi.org/10.1016/S0883-9026\(00\)00048-3](https://doi.org/10.1016/S0883-9026(00)00048-3)
- Markó, Cs. – Csizmadia, P. – Heidrich, B. (2016): Succession in the Family Business: Need to Transfer the ‘Socio-Emotional Wealth’ (SEW). *Vezetéstudomány/Budapest Management Review*, 47 (11), pp. 16–28. [10.14267/VEZTUD.2016.11.03](https://doi.org/10.14267/VEZTUD.2016.11.03)
- Mandl, I. (2008): Overview of Family Business Relevant Issues. Final Report. Vienna: Austrian Institute for SME Research. <https://ec.europa.eu/docsroom/documents/10389/attachments/1/translations/en/renditions/native> (Date of access: 15August 2018)
- Miller, D. (1983): The correlates of entrepreneurship in three types of firms. *Management Science*, 29(7), pp. 770–791. [10.1287/mnsc.29.7.770](https://doi.org/10.1287/mnsc.29.7.770)
- Milton, L. P. (2008): Unleashing the relationship power of family firms: identity confirmation as a catalyst for performance. *Entrepreneurship Theory and Practice*, 32(6), pp. 1063–1081.
- Noszkay, E. (2017): Tapasztalatok a családi vállalkozások átörökítésének dilemmái kapcsán. *Vezetéstudomány/Budapest Management Review*, 48 (6-7), pp. 64–72. <https://doi.org/10.14267/VEZTUD.2017.06.08>

O'Boyle, E. – Pollack, J. M. – Rutherford, M. W. (2012): Exploring the relation between family involvement and firms' financial performance: A meta-analysis of main and moderator effects. *Journal of Business Venturing*, 27(1), pp. 1-18. <https://doi.org/10.1016/j.jbusvent.2011.09.002>

OECD/Eurostat (2005): Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data. 3rd Edition. The Measurement of Scientific and Technological Activities. Paris: OECD Publishing. <https://doi.org/10.1787/9789264013100-en>

Otley, D. (1999): Performance management: a framework for management control systems research. *Management Accounting Research*, 10(4), pp. 363-382. <https://doi.org/10.1006/mare.1999.0115>

Patel, P. C. – Fiet, J. O. (2011): Knowledge combination and the potential advantages of family firms in searching for opportunities. *Entrepreneurship Theory and Practice*, 35(6), pp. 1179-1197. <https://doi.org/10.1111/j.1540-6520.2011.00497.x>

Pearson, A.W. – Carr, J. C. – Shaw, J. C. (2008): Toward a theory of familiness: a social capital perspective, *Entrepreneurship Theory and Practice*, 32(6), pp. 949-969.

Pittino, D. – Visintin, F. – Bau', M. – Mazzurana, P. (2013): Collaborative technology strategies and innovation in family firms. *International Journal of Entrepreneurship & Innovation Management*, 17(1-3), pp. 8-27. <https://doi.org/10.1504/IJEIM.2013.055226>

Poza, E. (2007): Family business. Third Edition. Mason, OH: South-Western, Cengage Learning

Sanchez-Famoso, V. – Maseda, A. – Iturralde, T. (2014): The role of internal social capital in organisational innovation. An empirical study of family firms. *European Management Journal*, 32(6), pp. 950-962. <https://doi.org/10.1016/j.emj.2014.04.006>

Sandig, A. G. – Labadie, G. J. – Saris, W. – Mayordomo, X. M. (2006): Internal factors of family business performance: an integrated theoretical model. In: Poutziouris, P. Z. (ed.): *Handbook of Research on Family Business*. Northampton: Edward Elgar, pp. 145-167.

Schumpeter, J. (1934): Capitalism, socialism, and democracy. New York: Harper and Row

Senfilechner, D. – Hiebl, M. R. W. (2015): Management accounting and management control in family businesses. *Journal of Accounting & Organizational Change*, 11(4), pp. 573-606.

Simons, R. (1995): Levers of control. How managers use innovative control systems to drive strategic renewal. Boston, MA: Harvard Business School Press

Steege, J. H. – Hoffmann, M. (2015): Innovation and Family Firms: Departing From R&D Mediations. WiSo-HH Working Paper Series, Working Paper No. 13. Hamburg: Universität Hamburg June 2015.

Steege, J. H. – Hoffmann, M. (2016): Innovation and family firms: ability and willingness and German SMEs. *Journal of Family Business Management*, 6(3), pp. 251-269. doi.org/10.1108/JFBM-09-2015-0036

Su, S. – Baird, K. – Schoch, H. (2017): Management control systems: The role of interactive and diagnostic approaches to using controls from an organizational life cycle perspective. *Journal of Accounting & Organizational Change*, 13(1), pp. 2-24, <https://doi.org/10.1108/JAOC-03-2015-0032>

Tidd, J. – Bessant, J. (2013): Managing Innovation: Integrating Technological, Market and Organizational Change. Fifth Edition. Chichester: Wiley

Weismeier-Sammer, D. (2014): The role of familiness for family business innovativeness. *International Journal of Entrepreneurial Venturing*, 6(2), pp. 101-117. [10.1504/IJEV.2014.062747](https://doi.org/10.1504/IJEV.2014.062747)

Zahra, S. A. (2005): Entrepreneurial Risk Taking in Family Firms. *Family Business Review*, 18(1), pp. 23-40. <https://doi.org/10.1111/j.1741-6248.2005.00028.x>

Zellweger, T. M. – Kellermanns, F. W. – Chrisman, J. J. – Chua, J. H. (2012): Family control and family firm valuations by family CEOs: The importance of intentions for transgenerational control. *Organization Science*, 23(2), pp. 851-868. [10.1287/orsc.1110.0665](https://doi.org/10.1287/orsc.1110.0665)

A CIKKEK MAGYAR NYELVŰ ÖSSZEFOGLALÓI

Jáki Erika – Molnár Endre Mihály – Kádár Béla

A magyar startup ökoszisztéma jellemzői és kihívásai 2

A cikk szerzői a magyar startup ökoszisztémát vizsgálják mind a keresleti, mind a kínálati oldalról. Ehhez kérdőíves megkereséssel fordultak a startupokhoz és befektetőkhez. A kérdőív a magyar startup vállalkozók olyan tulajdonságaira kérdezett rá, mint a nem, életkor, iskolai végzettség, korábbi vállalkozói tapasztalat és a startup létrehozásának motivációja. Ezen felül a finanszírozást, elhelyezkedést, célpiacon, foglalkoztatást és működési nehézségeket is vizsgálták a szerzők. A kérdőív rákérdezett továbbá a startup vállalkozók és az ökoszisztéma további tagjainak, mint a kockázati tőkebefektetők, inkubátor házak, akcelérátorok, nagyvállalatok és co-working irodák véleményére a hazai startup ökoszisztéma különböző jellemzőiről. Véleményük szerint a legfontosabb tulajdonságok az együttműködés az ökoszisztéma szereplői között, a nemzetközi kapcsolatok és a startup vállalkozók azon lehetősége, hogy újrakezdhesék egy elbukott startup vállalkozás után. Továbbá jelenleg a hazai ökoszisztéma legerősebb jellemzőjének a társasági eseményeket tartották (mint a találkozók és a networking), a legproblematisabbnak pedig a startup elbukása utáni újrakezdés lehetőségét és a vállalkozóktól megkövetelt adminisztrációs terhek nagyságát.

Katona Viktória Nóra

A jutalomalapú közösségi finanszírozás szerepe és helyzete a technológiai innovációs projektek pénzalapjaiban – Vállalkozásfinanszírozási szakértők nézőpontjából 13

A cikk egy doktori kutatás részeredményeinek összefoglalója, amely a technológia jellegű innovációs projektek közösségi finanszírozásának helyét és szerepét vizsgálja a vállalkozásfinanszírozás és innovációmenedzsment szemszögéből. A szerző bemutatja a jutalomalapú közösségi finanszírozási modellt, annak helyét és szerepét a hagyományosan ismert vállalkozásfinanszírozási lehetőségek viszonylatában, a szakirodalmi ajánlások, valamint a gyakorló szakemberek tapasztalatai szerint. A témában magyar és európai vállalkozásfejlesztési ökoszisztémák 17 szakértőjével (kockázati tőkebefektetőkkel, üzleti angyalokkal, inkubátor és akcelérátor vezetőikkel, szenior elemzőkkel és mentorokkal) készített interjúk eredményeit, valamint a jutalomalapú közösségi finanszírozás alkalmazásával kapcsolatos ajánlásokat és kockázatokat mutatja be, a termékfejlesztés különböző fázisait és a vállalkozás pénzügyi helyzetét figyelembe véve.

Vajda Éva

Az észlelt igazságosság mint döntő tényező a teljesítménymenedzsment-rendszerekben 25

A tudományos szakfolyóiratokban utóbbi években megjelent kutatások csak indirekt módon foglalkoznak a jelenlegi teljesítménymenedzsment (TM) gyakorlatok helyzetével és átfogó értékelésével. A kutatási eredmények és a nagyvállalati tendenciák vizsgálatával a cikk célja, hogy szűkítse a gyakorlat és a kutatás közötti rést, és gyakorlati ajánlásokat tegyen a TM-rendszerek tervezésének és kialakításának mikéntjére. A cikk bemutat egy, a TM-rendszerek hatékonyságának értékelésére szolgáló átfogó modellt, és kiemeli az igazságosság fontosságát, mint a modell egyik legfontosabb, de eddig kevés kutatási és gyakorlati figyelmet kapott dimenzióját. Ismerteti a vállalatok által a közelmúltban bevezetett, új TM-rendszerekkel kapcsolatos szekunder kutatás eredményeit, az új kutatási területeket, valamint a változások mögött húzódó fő okokat. Az irodalmi áttekintés alapján a cikk a TM-rendszerek hatékonyságának értékelésére szolgáló átfogó modellen belül a megfigyelhető trendek jellemzői alapján a „versengő”, és a „kooperatív” megközelítéseket azonosítja. A cikk két fő következtetésre jut. Az első szerint nem beszélhetünk a TM jelentős változásáról, de vannak olyan jelek, hogy a hangsúly a „versengő” megközelítésről a „kooperatív” megközelítésre tevődik át, amely a vállalatok helyzetének megváltozásával magyarázható, és amely azt hangsúlyozza, hogy a szervezeteknek a TM-et saját helyzetükhöz kell igazítaniuk. A másik következtetés szerint az igazságosság észlelése, mint a munkavállalók TM-re adott reakciója, a hatékonyság szempontjából kulcsfontosságú kritérium, és a rendszer sikerét vagy kudarcát jelentheti.

Mounia Utzeri

A nemek közötti egyenlőség sémáinak sötét oldala a menedzsmentben – Mély merülés egy német autógyártó gyakorlatába 38

A vállalati programok széles skálája, a nemek közötti egyenlőség előmozdítása, a megkülönböztetés elleni küzdelem és a nemek közötti egyenlőség kérdéseinek fókuszása érdekében tett erőfeszítések ellenére az erőfeszítések csak szerény eredményeket hoztak, különösen a menedzsmentben (Catalyst, 2018).

Mi az oka ennek és mit lehetne tenni?

A nemek közötti egyenlőség beavatkozásainak vizsgálata egy férfias szervezetben; és a férfiak és a nők nemek közötti egyenlőséggel kapcsolatos felfogásainak elemzése a

menedzsmentben, ez a cikk arra törekszik, hogy mélyebb betekintést nyújtson a nemek közötti egyenlőség változásának a szervezetben tapasztalt mechanizmusaihoz.

2012 és 2015 között egy németországi autópárizi vállalat központjában készült egy dokumentumelemzést és félig strukturált interjúkat tartalmazó kvalitatív esettanulmány, ami Ely és Meyerson (2000), valamint Rao és Kelleher (2005) által kidolgozott analitikai keretrendszer innovatív kombinációjára támaszkodik.

A tanulmány a formális és rendszerszintű nemi politika szervezetben lévő korlátait mutatja be, érintetlenül hagyva a mélyen beágyazott informális értékeket.

A megkérdezett női vezetők általában nem jelentkeznék ezekre a programokra. A férfi vezetők nemcsak a vállalati cselekedetekkel, hanem a nemek közötti kvótákkal szemben is nehezítésüknek adtak hangot. Mind a férfi, mind a női vezetők szilárdan hisznek a meritokratikus rendszerben, és magától értetődőnek tartják szervezetük nemi sorrendjét.

Balogh Jeremiás Máté – Ménesi Kristóf

A nemzetközi olajkereskedelelem komparatív előnyeinek elemzése – az Öböl-menti országok esete 48

Bár korábban már számos tanulmány foglalkozott a közel-keleti térség versenyképességével, az olajkereskedelelem versenyképességének az elemzése a régióban még kevésbé kutatott területnek számít. A tanulmány az Öböl-menti országok (Öböl Menti Együttműködési Tanácsa) olajiparának általános tendenciáit és kereskedelmi versenyképességét értékeli, a 2000 és 2015 közötti időszakot vizsgálva, a főbb olajipari termékeknek a világpiacra irányuló kereskedelmét elemezve. Az eredmények alapján megállapítható, hogy a vizsgált hat arab Öböl-menti országból csak négy (Kuvait, Szaúd-Arábia, Egyesült Arab Emírségek, Katar) rendelkezik versenyelőnnyel legalább

egy vizsgált olajipari termék esetén. Általánosságban elmondható, hogy az Öböl-menti országokban az olajkereskedelelem komparatív versenyelőnyének a csökkenése volt tapasztalható a vizsgált időszakban a gazdasági válság, a jelentős olajár-ingadozások, regionális instabilitás és politikai okoknak (szíriai konfliktus) köszönhetően.

Németh Krisztina – Dőry Tibor

Családi vállalkozások innovációs teljesítményét befolyásoló tényezők – egy empirikus felmérés tapasztalatai 58

A családi vállalkozások innovációs teljesítményének a vizsgálata a családi vállalkozások kutatásának eddig kevésbé feltárt területének tekinthető. A családi vállalkozások általános üzleti teljesítményét és innovációs tevékenységük eredményét vizsgáló kutatások szerint a családi vállalkozások kevesebb innovációt valósítanak meg annak ellenére, hogy elvileg képesek lennének jobb eredmény elérésére is. De Massis és szerzőtársai (2015) azt vizsgálták, hogy a családi vállalkozások vezetői miként oldják fel ezt a paradoxont és hasznosítják a vállalkozások innovációs potenciálját.

A témakörben lezajlott, a családi és nem családi vállalkozások innovációs hajlandóságát összehasonlító, nemzetközi kutatási eredményekre építő felmérésben azt vizsgálták a szerzők, hogy milyen hasonlóságok és különbségek vannak a Magyarországon működő – elsősorban kis- és közepes méretű – családi vállalkozások innovációs teljesítménye között. A cikk újdonságát a kis- és középvállalkozások, elsősorban családi cégek által alkalmazott különböző típusú döntéstámogatási módszerek és az innovációs teljesítménye közötti összefüggések vizsgálata jelenti. Az empirikus vizsgálat eredményei alapján elmondható, hogy a családi vállalkozások több innovációt vezetnek be, mint társaik és a döntéstámogatási módszerek pozitívan befolyásolják a vizsgált cégek innovációs teljesítményét.

AUTHORS OF THIS ISSUE

Dr. Jáki, Erika, associate professor, Corvinus University of Budapest; **Molnár, Endre Mihály**, PhD candidate, Corvinus University of Budapest; **Kádár, Béla**, credit risk analyst, K&H Bank (part of KBC group); **Katona, Viktória Nóra**, PhD candidate, Corvinus University of Budapest; **Vajda, Éva**, assistant lecturer, Corvinus University of Budapest; **Mounia Utzeri**, PhD candidate, Corvinus University of Budapest; **Dr. Balogh, Jeremiás Máté**, assistant professor, Corvinus University of Budapest; **Ménesi, Kristóf**, financial analyst, The Royal Embassy of Saudi Arabia; **Dr. Németh, Krisztina**, associate professor, Budapest Business School; **Dr. Dóry, Tibor**, associate professor, University of Széchenyi István

TARTALOMJEGYZÉK

JÁKI ERIKA – MOLNÁR ENDRE MIHÁLY – KÁDÁR BÉLA

A magyar startup ökoszisztéma jellemzői és kihívásai 2.

KATONA VIKTÓRIA NÓRA

A jutalomalapú közösségi finanszírozás szerepe és helyzete a technológiai innovációs projektek pénzalapjaiban – Vállalkozásfinanszírozási szakértők nézőpontjából 13.

VAJDA ÉVA

Az észlelt igazságosság mint döntő tényező a teljesítménymenedzsment-rendszerekben 25.

MOUNIA UTZERI

A nemek közötti egyenlőség sémáinak sötét oldala a menedzsmentben – Mély merülés egy német autógyártó gyakorlatába 38.

BALOGH JEREMIÁS MÁTÉ – MÉNESI KRISTÓF

A nemzetközi olajkereskedelem komparatív előnyeinek elemzése – az Öböl-menti országok esete 48.

NÉMETH KRISZTINA – DÓRY TIBOR

Családi vállalkozások innovációs teljesítményét befolyásoló tényezők – egy empirikus felmérés tapasztalatai 58.