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Conference of the Doctoral School of Business and Management and the Doctoral School of Economics, Business and Informatics at the Corvinus University of Budapest

CONFERENCE PROCEEDINGS

Edited by

Dóra Dankó, Kitti Dióssy, Viola Horváth,
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Nóra Fazekas

Learning-in-crisis: Learning paths of Hungarian schools in the Covid-19 pandemic

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Abstract

The research investigates the organizational dynamics of learning-in-crisis (LiC) in Hungarian public education institutions in the light of the Covid-19 pandemic. Firstly, the author introduces the concept and the different theoretical approaches of crisis learning and its literature in the public sector, drawing a model for analysis. When we look at the current case of distance digital education, the postmodern approach to crisis learning is an adequate lens to apply due to the nature of organizational learning. It helps to understand the processes that lead to interpreting the situation as a crisis. What is the subject of crisis exactly? Why is it perceived as a crisis? We can also understand the chosen way of learning that takes place in a school as a result of the crisis, as it is fundamentally influenced by two factors: the extent of the impact and the perceived potential relevance of the rare event. The preliminary results of qualitative empirical research are presented, where the actions and learning processes of five different schools are laid out. The research shows that the learnings are indeed different in the face of an identical external impact.

Keywords: Learning-in-crisis, organizational learning, Covid-19, school management

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1. Introduction

Public education is one of the most affected fields by the coronavirus over the world. Most of the schools and the teachers had only days to start distance education, which, self-reportedly, most of them were not ready for. They started using tools they had never heard of before, setting up a knowledge-sharing community of more than 70,000 members on Facebook over one weekend. They taught each other on online platforms and in the local school communities to cope with the new situation for their students.

This external shock induced an ongoing, but suddenly extremely fundamental learning process in the area of digital competencies. In my research, I am investigating how the coronavirus crisis induced learning has, through the necessity of online education, impacted the digital organizational learning of schools. In this study, I present the theoretical background of the research and the results of the initial analysis of the interview and observation data I gathered.

2. Theoretical background

A great amount of academic literature about the connections of organizational learning and crisis management were written around the great financial crisis of 2008, also inspired by other disruptive events, like previous business scandals (e.g., the Enron scandal), environmental disasters, epidemic or social and technological crises (Moynihan, 2008; Moynihan, 2009; Lampel et al., 2009; Smith & Elliott, 2007; Elliott, 2009; Birkland, 2009; Starbuck, 2009; Beck and Plowman, 2009; Wang, 2008; Deverell, 2009). In addition to crisis learning, there are other related concepts that help better understanding these phenomena, including dynamic capabilities, ambidexterity and absorptive capacity (Antonacopolou & Sheaffer, 2014), or organizational resilience (Smith & Elliott, 2007).

A crisis is a state of an organization when the current situation challenges the organization's basic assumptions and goals, threatens its operation, and even survival. Crisis brings time pressure without any tried and tested coping mechanisms available in a very ambiguous environment (Antonacopolou & Sheaffer, 2014). While crisis is defined similarly across the literature, the con-

cept of learning and its connection to crisis has different conceptual interpretations. A modernist approach to learning can be viewed as the identification and the embedding of practices and behaviors (Moynihan, 2008, p. 352). In connection to crises, we can talk about learning as crisis-induced learning (“lesson-drawing processes” triggered by crisis) (Deverell, 2009, p. 180), or can be categorized as intercrisis (“learning from one crisis to prepare for another”) or intracrisis (“learning that seeks to improve response during a single crisis episode”) learning (Moynihan, 2009, p. 189). This approach perceives crisis as a change, as an external impact affecting the organizational equilibrium. In a postmodernist view, learning can be understood as the movement from the known to the unknown (Antonacopolou & Sheaffer, 2014). This view describes learning within the crisis. Antonacopolou and Sheaffer defy the separating approach and promote a dynamic view of learning. This approach embraces crisis and sees it as a natural event of continuous change. Thus, learning from a crisis or a failure is not as clear-cut as assumed. Authors even suggest that “understanding the dynamics of learning and crisis may reveal why critical incidents may be perceived as crises in the first place” (p. 6).

When we look at the current case of distance digital education, the latter concept can offer special insights into the phenomenon. It helps to understand the processes that lead to interpreting the situation as a crisis. In this approach, a deficiency of digital competencies was already known within the Hungarian education system. The instant need for distance education only erupted the digital crisis within schools because they were not ready for it (at least most of them).

Both learning blocking and fostering aspects of crisis have been observed in empirical studies (Deverell, 2009). Both sides of this academic discourse highlight the value of learning in and from a crisis. According to Christianson and colleagues (2009), rare events trigger learning in three ways: 1) rare events act as audits of existing response repertoires, 2) disrupt and foster the reorganization organizing routines, 3) redirect organizational identity. Similarly, it is suggested that crisis experience is helpful in new crisis encounters (Moynihan, 2008) by improving understanding of latent, previously hidden flaws (Robin et al., 2019); consequently, it “broadens the scope of action and builds confidence in experimenting with new ways of thinking, acting, and learning” (Antonacopolou & Sheaffer, 2014, p. 16). Crisis also creates a learning space

that cultivates networks and trans-sectorial partnerships (Robin et al., 2019) and the involvement of external experts (Broekema et al., 2018), enabling the procurement of significant outside-organization knowledge and the creation of knowledge synergies.

There are several factors that hinder or block learning (Moynihan, 2008, p. 351):

- The high consequentiality of crises makes trial and error learning prohibitive.
- Crises require inter-organizational rather than organizational learning.
- There is a lack of relevant experience, heuristics, SOPs, or technologies to draw on.
- The scope of learning required is greater than for routine situations.
- The ambiguity of previous experience gives rise to faulty lesson drawing.
- Crises narrow focus and limit information processing.
- There is rigidity of response: actors recycle old solutions to new problems.
- Political dynamics give rise to bargaining and suboptimal decisions.
- Crises provoke defensive postures and denial of the problem, responsibility, or error.
- Crises provoke opportunism as actors focus on their positive role.

Besides learning and not learning in crisis, we can also talk about unlearning in a crisis situation. First, prior routines have to be unlearned to give way for practices adequate in the crisis situation. Then, however, a great part of these new practices, knowledge, network relationships, etc., get unlearned as well once the crisis is over (Robin et al., 2019).

According to the model of Lampel and colleagues (2009) in Table 1, learning that takes place in a school as a result of the crisis is fundamentally influenced by two factors: the extent of the impact and the perceived potential relevance of the phenomenon. Transformative learning, which we can view as double-loop learning, can occur when both levels are high. A current example of

this is that the day-to-day operation of a school is completely transformed by the need to provide education online (degree of impact), but it also recognizes a lack of digital competencies and knowledge about digital tools supporting school operation as a development point independently from the crisis itself (perceived relevance).

Table 1
Types of learning in crisis

		POTENTIAL IMPACT	
POTENTIAL RELEVANCE		High	Low
High		Transformative	Reinterpretative
Low		Focusing	Transitory

Source: Lampel et al. (2009, p. 839), own editing

We could assume a high level of both factors, considering the present circumstances. However, we may find that in some schools, the degree of perceived relevance is not evident. On the one hand, as the level of digital competence in several schools is variable or low, and its development is not a strategic goal, the situation is assessed as a temporary emergency in which ICT tools have to be used. The other reason seems to stem from the situation of students and parents. As for many, due to the socio-economic background of many families, the use of digital tools and online platforms is scarce and superficial, and the depth of digital knowledge is significantly lower; there is no real need to improve digitalization more widely in education or cooperation among the school staff. Thus, if learning is stimulated by the large-scale impact of the crisis, then it happens in a focused way: to solve a particular problem that arises at a specific time and place. The emergence of intra-crisis learning is thus limited, and intercrisis learning is unlikely.

The perceived impact of the crisis may be lower in schools where significant knowledge and experience have already been accumulated in digital education. This can help to learn, but due to the presence of the needed competencies, only the re-examination of educational and organizational practice occurs (reinterpretation), or only point-like, transitory learning takes place

without systematic transformation.

Generally, public organizations and institutions, as schools and the education system, experience long periods of stability or incremental change. When these get interrupted by a crisis, it creates opportunities for major change (Broekema, 2017). The nature of change itself, however, must be explored.

3. Methods

The preliminary results presented in this study are part of a research project, where the connected research question is as follows: How has the coronavirus induced crisis learning, through the necessity of online education, impacted the organizational learning of digital competencies of schools? In this analysis, I will focus on 1) the nature of crisis the schools perceived, 2) the type of crisis learning characterizing the participating schools, and 3) the main learning patterns emerging from their experiences.

The sampling of the schools was intensity-based with stratified purposeful sampling (Miles & Huberman, 1994). The filtering criterion for sampling was that the chosen schools had to come from the network of KÖVI (Hungarian-Netherlands School of Educational Management), I was in cooperation. Apart from the convenience of approachability, this choice is reasonable, as the connection with KÖVI can be accounted as an attribute of continuous and conscious organizational or managerial learning. Furthermore, the school management had to be engaged, and open to share the data of the development project, to provide additional information, and to grant access to its online platforms, as well as the opportunity for on-site observation. The intensity criteria demanded schools to be able to show some examples of involvement in organizational digitalization initiatives in the past two years that have been perceived by the school community as beneficial or innovative. For stratifying criteria, I have chosen the varying attribute of the maintaining institution (EMMI, ITM, church). Because of Hungarian education policies, schools with different maintainers have different grades of professional, ideological, and financial freedom, which might impact schools' digital innovativeness and their means to it. Although the type of institution maintaining is not in the focus of the research, it provides a potentially relevant additional dimension to the research.

The data collection was carried out in individual and focus group interviews. The sampling of interview participants happened purposively, covering colleagues in diverse positions, experience, age, and subject background. Teachers participating in the focus group interviews also needed to come with different levels of digital competencies to avoid painting biased or wishful pictures about the organizations. Individual interviews in the research served the understanding the managerial perceptions; these involved school principals and vice-principals extended by administrative staff representatives. I also prepared field notes that are essential elements of accurate qualitative research. Notes mostly include a description of the setting, participants, interviews, and critical reflection.

4. Results

To frame my research, first, I had to create my definition of the crisis impacting the learning of the organization: The crisis is an outcome of the Covid-19 pandemic, causing schools to close and operate on online and alternative platforms and ways, they did not have practices and know-how in place for. In table 2, I introduce the schools' basic characteristics, and I summarize their unique connection to the subject of the crisis. Analyzing the gathered data, it became clear that the perception and definition of the crisis situation was a very important factor of the organizational learning processes in the crisis situation. The crisis itself namely was perceived differently in all the participating schools, even though there were common operative challenges in the learning process.

Table 2
Description of the participating schools and their subject of crisis

Name	S1	S2	S3	S4
Maintainer	EMMI	EMMI	EMMI	church
Level	primary	primary	primary	primary through secondary
Size	big	small	medium	big
Place	county capital	agglomeration of county capital	midsize town	county capital
Organizational learning capacity	high	middle	high (polarized)	high

Source: own editing

The common ground for the schools' learning was 1) all teachers had to master the skills and learn the platforms, applications and software enabling online distance education, and this skill and knowledge was usually missing. 2) Schools had to build an organization-wide system for learning and cooperation; these were only rarely and only partially in place. What we could see in the mechanisms of learning that it happened 1) among the teachers within the school, teaching and mentoring each other, and 2) outside the school, teachers often turning to their children for help or to online Facebook communities.

Figure 1
Different learning paths of the participating schools



Source: own editing based on Lampel et al. (2009, p. 839)

We can see different approaches to the subject of the crisis, however, based on what the schools brought with themselves from the past in their operations and in their culture. What differentiated the learning paths (Figure 1) along the potential relevance was whether the school had a digitalization strategy in place and whether the school had any other distracting organizational challenge that captured the attention of the school management more than the online transformation. For example, S1 and S4 perceived high relevance of distance education as both schools supported digital development: S1, as a talent nurturing institution with a focus on natural sciences, saw its duty in keeping up with this development. S4 was planning to start a class with a specialization on IT skill development and digitalized pedagogical methods; they even have a vice principal dedicated to this strategic development.

In S2, there were no clear strategic goals. Thus, it was hard to connect the opportunity of the crisis to any development paths. The school's philosophy also disfavors certain digital solutions, arguing that they exclude certain students and families, and they have to provide education equally to all. Low relevance was also perceived due to a lack of knowledge about possibilities, missing knowledge or competencies in the management team and in the teacher community: "they did not know, what they did not know". In the case of S3 and S5 the level of perceived relevance was lower due to other challenges: S3 suffers from a transformation of becoming a more and more segregated and low performing school from a previously high-performing institution, demanding complete cultural change, that hits the teacher community very hard, causing grief-like symptoms in the organization, deflecting the attention from digitalization. In S5, the social backgrounds of students tend to be quite low. Even in business-as-usual periods, large-scale dropout is a real threat teachers must fight every day. In digital education, the goal was to keep their students in the system, to handle their lack of sufficient tools and internet access, even though the teachers themselves were ready for more complex digital tasks. Assessing perceived potential impact, we could see S1 and S4 rather celebrating the changes they saw the learnings of the distance education period can bring in the regular practices of education and organizational operation. These organizations realized the positive outcomes they could leverage on, and they managed to locate areas of shortcomings in digital education they will have to address later. In S4, the perceived impact might be smaller, as the school is quite well equipped. It has already used digital methodologies well both in

pedagogy and in collaboration. The scale of change, therefore, is more limited. Also, the school resides on deep religious and community values that put the role of digitalization in the background in the regular learning environment. In the case of the S₃ and S₄, significant change at organization level is not expected, as digitally competent teachers have worked innovatively before. However, room for further improvement is scarce due to the lack of financial possibilities and the social background of the students and their families. In the case of S₂, the impact is minimal, as they were only focusing on managing the situation at hand. Now, they do not intend to transform practices, but plan to go back to previous methods only complemented with some new tools. It is also because the regulations of EMMI and the school district are taken very seriously, and strictly by the school management, they find it risky to experiment and innovate within these boundaries. In all government-maintained institutions (all but S₄), the impact is expected to be small, as the budget for digital investments and especially for maintenance is extremely low in comparison to the needs of the schools.

5. Discussion and recommendations

Summarizing the patterns of the learning-in-crisis processes that could be explored in the short terms the following statements can be made:

- Attention and organizational context: the strategic focus is key to steer development actions; however, the external crisis might be overshadowed by inner crisis situations paralyzing the organization to manage transformative learning.
- Infrastructure and systems are key elements in digital competence; thus, social and financial backgrounds matter and represent indirect influencing factors for an organization's digital learning ability.
- External orientation and objective understanding of own knowledge are essential for learning engagement. Schools that had a higher level of learning organizational capacity gained more from the crisis situation as well.
- Transformative and double loop learnings are few due to learning hindering effects of a crisis, as lack of inter-organizational learning and previous expertise, rigidity of response, limited focus and defensive postures varying in the different participating schools.

The results of this research show that the same crisis can be interpreted very differently in various organizational and management contexts. Accordingly, crisis and learning management has to focus on the understanding of the organization as a cumulation of previous experiences and present values. This understanding can help us determine what direction an organization can take within the matrix (Table 1) what pressure points there are to eliminate or handle to steer the organization towards transformative learning.

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Recalculating - the effect of the COVID-19 epidemic on the career planning of tourism students

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Abstract

Attracting and retaining qualified employees has been a challenge in the tourism sector even before the pandemic. The shortage of workers with a quality education is partly due to the fact that young people with a degree in tourism choose to work in other industries after graduation. Our aim is to explore the perception of tourism as a profession of tourism students by examining the aspects influencing career choices before and after the epidemic. Focus group interviews were used to map students' attitudes toward tourism. The results suggest that students who consider the profession to fit their personality are more likely to build their careers in this sector, while those who have had mainly negative experiences in a crisis situation have a different perspective on their future.

Keywords: career planning, tourism industry image, Covid-19, person-industry congeniality, tourism education

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1. Introduction

In just a few months, overtourism has been replaced by “null tourism” in the global tourism market. As a result of the pandemic, the vulnerability of catering jobs has come to light and deep-seated problems have also come to the fore (Gössling et al., 2021). The tourism and hospitality industry has reached a critical juncture even before the epidemic, as the challenge of attracting and retaining “quality” and skilled employees is a global challenge (Richardson, 2009). The lack of staff with quality education is partly due to the fact that hospitality students typically turn to other industries after graduation (Wen et al., 2019). Without the positive attitude of employees towards work, it is impossible to achieve guest satisfaction and loyalty, but this remains a challenge as long as the disadvantages of working in the tourism sector outweigh its benefits. According to some approaches, the impact of the COVID-19 pandemic on the tourism workforce is an amplification of the already existing and well-known challenges of this group, rather than new effects, meaning the high levels of fluctuation, uncertainty, low wages and most often poor working conditions (Baum et al., 2020). The aim of the following research paper is first to explore the perceived image of the professions related to tourism that students have. Second, the goal is to map the factors influencing career choice including the importance of industry-person fit. The study focuses on students’ postgraduate career plans, where focus group interviews were conducted with the participation of undergraduate students to map students’ attitudes toward the tourism industry. The main research question covers the extent to which the Covid-19 pandemic has affected students’ perceptions of working in tourism and their career goals in the sector. Examining the effects of the Covid-19 epidemic may be particularly important in the future to be able to estimate the modifying power of an emerging crisis in terms of the development of the industry picture and the intention to leave the field. To be able to find the answers to this question, first, factors influencing the career choice decisions of tourism students need to be identified for future strategies and research questions.

2. Theoretical background

The perceived attractiveness of building a career in the tourism industry

The employees of the future are already choosing not only a job but also a career based on what university training they are applying for. When they complete the training, they decide again whether they will stay on the course, i.e. whether they see a perspective or what makes the industry attractive, and whether they plan to build a career in that sector. According to the theory of career planning, individuals can make good career decisions if they are aware of the career paths they can choose from and if they have a realistic picture of how to achieve their set career goals (Hansen, 1976). Conscious work or career planning requires students to understand the specifics of the job market, build a network, gain self-knowledge, and set specific career goals (Jackson, 2015; King, 2004). It can be difficult for new entrants if they do not have the necessary information, without which students will not be able to make full career choices. Interestingly, students also see high levels of stress when they see too many opportunities and do not trust enough in their own decision-making ability (Wang – Tsai, 2014) to embark on the path that best fits their personality without help (Pauw, 2009).

Motivational factors in choosing a career path

According to Wan et al. (2014), the factors that best influence the decision of future tourism and catering workers are a) an interesting job, b) an opportunity for advancement, c) a secure future, d) a good salary, e) social usefulness; and f) social prestige. Another study in Ghana revealed that industry-person fit, social benefits, and opportunities for professional development played a crucial role in the career choice of tourism students (Armoo – Neequaye, 2014). In order to acquire and retain a skilled workforce, therefore, attention must be paid to the factors that influence graduates' career decisions and career intentions. While some research shows the positive benefits of working in tourism; such as the exciting, enjoyable nature of work, perceived career opportunities and interesting tasks, the opportunity to care for others, starting one's own business, developing skills, training opportunities, all this in a rapidly changing sector (Barron et al., 2007). In contrast, other studies confirm that students mostly believe that these needs are not being met in the hospi-

tality and tourism industry (Amissah et al., 2020). Although the tourism sector offers an extremely wide range of career paths for students (Burns, 1993), students do not feel that the opportunities inherent in the industry provide them with the factors they consider important (Richardson, 2009). One of the most important factors for those working in tourism when planning a career is the existence of a personality-industry fit, passion and calling (Birtch et al., 2021), which means that they feel they can make effective use of their skills and abilities in their jobs (Kusluvan– Kusluvan, 2000; Zhou, 2000).

Factors facilitating and affecting decision - making

The need for independent and conscious career management is critical not only for those entering the labor market soon, but also for those in the early stages of their degree. Often, students do not have the right career management skills (Bridgstock, 2009), so they may not be prepared to make a career and confident career choice. Career choice is a complex phenomenon and is subject to a number of external influences (Jackson, 2015) that can help but also complicate the decision-making process. Lee et al (2019) identified 5 groups that best influence students' career choices: counselors, teachers, professional mentors / partners, parents, and social media. It is important that educators have existing professional experience and enthusiasm for the industry, which plays a key role in shaping students' attitudes (Fraser, 2020; Jackson, 2015). Internships and / or work experience can also make students committed, but they can also create negative experiences and attitudes among students about the industry (Brown et al., 2014). A new generation of talent seeks authenticity and transparency, and employee experience is crucial to them. They tend to favor organizations where their values are the same, they can be self-identical, and they can achieve their career goals (Chițu, 2020). Role models and mentors play a key role in students' lives and can effectively influence young people by showing them through practical examples what skills they need to work, as well as providing personalized support and advice (Counsell, 1996). These actions reduce uncertainty and anxiety about career decisions (Chuang, 2010). Overall, the combined application of these influencing factors can have a positive effect on students' attitudes towards working in the tourism and hospitality industry (Fraser, 2020).

The effect of a crisis on turnover intention in tourism

The significant decline in the number of jobs associated with tourism due to COVID-19, and mass layoffs, can trigger anxiety and negative emotional reactions in career starters, which is expected to reduce the attractiveness of the hospitality and tourism professions (Birtch et al., 2021). The image of the industry is also negatively affected by the fact that several companies have made unfair decisions in dealing with the crisis. This results in decreased levels of trust among employees towards employers (Agarwal, 2021). The hospitality industry and tourism organizations will therefore need to focus in the future on restoring trust, which will ensure a continuous supply of future workers in the industry (Yu et al., 2021). Job insecurity and burnout cause turnover intent and may even make employees think about changing careers (Bajrami et al., 2021). On one other hand, younger employees may be motivated to take on more responsible jobs and perform challenging tasks. Companies may therefore benefit from recruiting new entrants, as younger employees are more likely to adapt to rapid changes in the industry (Bajrami et al., 2021). Wu (2013) however concluded that recent tourism graduates are likely to choose jobs in other industries where they are offered a more competitive salary and benefits.

In conclusion, the following qualitative research aims to find answer to the following research questions: (1) what motivates students to choose the tourism industry and how do they see being employed in the sector, (2) to what extent did the Covid-19 pandemic change their career plans, and (3) what factors facilitate their career decisions. In depth focus group interviews helped in revealing the characteristics and needs that students look to fulfill when looking for employment in the sector. Using focus group interviews allowed the researchers' access to the phenomena of high turnover intentions of tourism students as well.

3. Method

We selected a focus group interview method to map students' career planning decisions. The participants were third-year and graduate students of the Corvinus University of Budapest, and applicants of a tourism focused mentor program called protégé. which started in September 2020. During the research, two interviews were conducted, with a total of 12 participants, in November

2021, with personal participation. To get a broader answer to the research questions, students came from different universities, juniors and seniors both. Summary demographics are provided in Appendix 1. Given the exploratory nature of the research, we used semi-structured interview questions. The topics covered in the interview were defined on the basis of the literature, concerning the perceived attractiveness of employment in tourism, the motivational factors relevant to career planning, and the impact of the Covid-19 on career decisions (Appendix 2). The results of the research were structured using a thematic analysis procedure. Thematic analysis allows for an in-depth description of the entire data set and a clear model (Braun – Clarke, 2019). The two focus group discussions lasted 90-120 minutes. Interviews were recorded with the consent of the interviewees. All participants were assured of confidentiality and anonymity. During the analysis, codes were generated according to the topics, and then categories were fine-tuned by outlining a thematic diagram (Appendix 3).

4. Results

According to the interviews, students initially had a good opinion about working in the tourism and hospitality sector. Students applied for tourism courses because they saw a kind of self-fulfillment in the career opportunities offered by the sector. However, as a result of gaining more insight into the negatives of the sector, their commitment to the area decreased. In terms of motivating factors for employment, students look for opportunities for development and learning, they want a job where they have career prospects. Interestingly, personality-industry fit and employee experience are priorities to them. As a result of the Covid pandemic, students became uncertain about their future, but that did not make them leave the industry yet. Many of the students see new opportunities in the situation, so if they receive positive impulses, they will enter the world of the labor market as enthusiastic new employees. In addition, young people want to stand on more than one foot, so tourism is likely to be seen as a side career path. In terms of education, students said they did not get what they expected. They want more practical lessons and the professional experience and professional credibility of the educators is important to them. The supportive role of professionals is also key, whether it is their participation in education, internships or personal mentoring. In conclusion, the career decisions of tourism and hospitality students are influenced to a

greater extent by the positive impulses gained from the professions' representatives, rather than the career planning uncertainty which was caused by the Covid-19 pandemic.

5. Discussion and recommendations

In summary, the perception of students studying tourism about tourism as a profession is mainly negative. So much so, that they do not feel socially valued either working in the sector. In terms of career choices, flexibility, future career prospects, development opportunities and personal-industry fit are paramount for them. The latter factor has a positive effect on their career plans, as it was already an important consideration when choosing the university. The Covid-19 epidemic did not create an intention to leave the industry in students who are committed to the industry, while it left uncertain ones still unsure. Our research confirms that student recruitment strategies, such as personality tests, should be used to act as a filter and help provide career guidance to students (Teng, 2008). If students are able to learn about the career opportunities and circumstances available to them and gain self-knowledge, they will develop a realistic self-image, which can help them decide which area of the tourism industry fit their personality (Setiyorini et al., 2015). University-business collaborations also have a number of benefits, so educators need to strengthen and develop joint projects with tourism businesses. Dual training programs are often described as a solution, although the success of such programs requires a global change of approach. Quality control and screening of professional partners is key. Moreover, these trainings should not hinder students' studies or work-life balance, the lack of which can lead to burnout during their early lives. In terms of future research opportunities, the qualitative research presented in this study can serve as a basis for future quantitative research. A model based on the results of a questionnaire can help understand what factors influence the attractiveness of tourism-related professions for tourism students. In addition, the study of the impact of work experience and the study of the positive influence of mentoring programs and student organizations can bring interesting results. The study was limited by the low number of students starting their careers participating in the focus group interviews, which may have a distorting effect on industry perceptions. However, it is important to note that the crisis is not yet over, which leaves room for further research to monitor change.

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Annex

Appendix 1: Demographics of interview participants

Number	Gender	Age	University	Year	Experience in the tourism industry	Mentor program participation
1	F	22	Debrecen	3	yes	yes
2	F	22	BCE	2	no	no
3	M	22	BCE	3	yes	no
4	F	20	BCE Székesfehérvár - dual	3	yes	no
5	F	20	BCE Székesfehérvár - dual	3	yes	no
6	F	21	BCE	2	yes	no
7	F	22	Kodolányi	2	yes	yes
8	F	23	Kodolányi	4	yes	yes
9	F	21	Kodolányi	1	yes	yes
10	F	21	BCE Székesfehérvár	2	yes	yes
11	F	24	METU	fresh graduate	yes	yes
12	F	29	BCE (postgraduate program)	1	yes	yes

Source: own editing

Appendix 2: Focus Group Interview Topics

Topic 1: Demographics and introduction of participants

Topic 2: Attractiveness of working in tourism

Topic 3: The importance of motivational elements in career choice

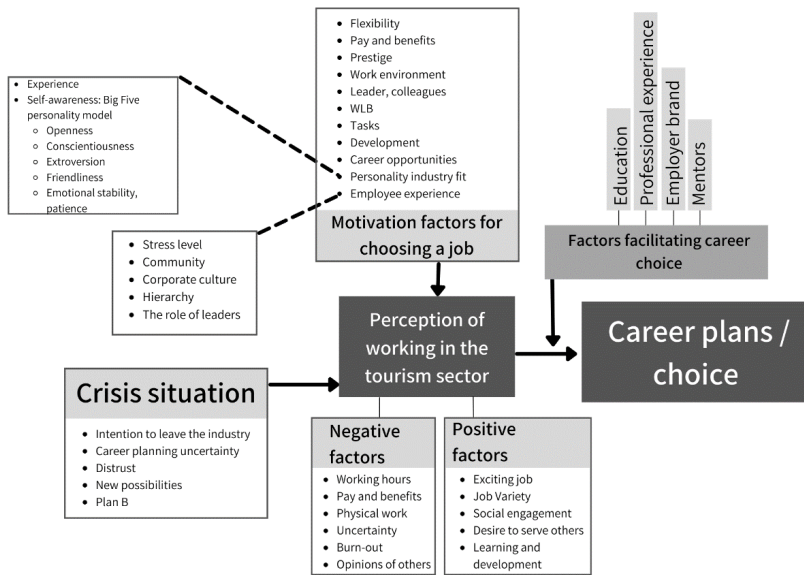
Topic 4: The role of industry-personality matching

Topic 5: Impact of COVID-19 on career plans

Topic 6: Assessing tourism education

Topic 7: Additional comments and opinions requested by the participants, solutions for the industry image, career start

Appendix 3: Results - thematic code map



Source: own editing

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The Effects of Digitalization on Economic Growth in Selected Central and Eastern European Countries

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Abstract

In today's globalized world, the economic significance of digital technology has become self-revealing. Digitalization has become even more pervasive following the Covid-19 pandemic outbreak. Hence, the main objective of this study is to examine the economic effects of digitalization in selected Central and East European Countries (CEEs) in recent years (2016-2020). The study has utilized quantitative research techniques based on the data obtained from the World Development Indicators (WDI) and Digital Economy and Society Index (DESI) for the period under investigation. In doing so, endogenous growth theories were used to adopt the appropriate econometric model, in which economic growth was treated as an outcome variable, while digitalization, trade openness, remittances and financial development were predictors. The panel data revealed that variations in economic growth were observed within countries than between countries, whereas digitalization, financial development and trade openness exhibited significant difference between the countries than within a country. Regression results from both pooled OLS and between estimator models revealed that the effect of digitalization on economic growth over time is not significant although the result must be taken with some degree of caution. After applying the Hausman test for model selection, we have used the fixed effect model or the random effect model for estimation. Considering the fixed effect model or dummy variable regression, in which digitalization, trade openness, remittance, the 2020-year dummy and the interaction variable between the 2020-year dummy and digitalization after the outbreak of the Covid 19 pandemic (i.e., year 2020) were significant.

Keywords: Digitalization, Economic Growth, COVID-19, CEEs

1. Introduction

Over the last couple of decades, the term “digitalization” has become one of the most trending discussion topics in the academic and policy circles as a result of which enormous literature is produced in view of exploring the ways in which digitalization affects various aspects of human life. In 2019, Google scholar found 221,000 hits for digitalization (Gorenšek & Kohont, 2018), which rose to 603,000 hits in 2022. This is basically attributed, with the intensification of globalization, to the advancement in the information and communication technology (ICTs) that is transforming the economic, political and social domains of human life. This process of change and restructuring of socio-economic life around digital communication and media infrastructures is broadly known as digitalization (Bloomberg, 2018).

While an attempt to precisely define “digitalization” as a concept is difficult, scholars agree that the concept consists of two essential elements. The first is “digitization” which basically refers to the process of converting of ‘analog’ data such as images, video, text etc. into ‘digital’ format; while the second implies the acceptance and increase of the use of digital technology (Gorenšek & Kohont, 2018). This significant increase in the utilization of digital technologies that range from computers, smart phones, to internet of things, cloud computing to big data analytics is argued to be the key driver of crucial decisions regarding economic development that massively affects social progress (Gorenšek & Kohont, 2018; Muro et al., 2017); Muro et al., 2017). In the economic arena, increasing digitalization is understood as a change of business model that provides new revenue and value-producing opportunities (Bloomberg, 2018).

With the outbreak of the COVID-19 pandemic and the resultant “new normal” situation, digital technologies have become even more relevant as they become the hallmark of economic activities amidst “lock-down” and “social distancing” in many countries of the world. As the number of internet users surpassed the 50% mark by the end of 2019 (Katz & Callorda, 2020), the direct selling of products and provision of services between business and customer (b2c) has increased globally from 20% to 58% in 2021 (ITU, 2021).

Nonetheless, it has to be noted that the prevailing digital divide across different regions of the world makes the actual and potential benefits of digitalization uneven. According to OECD report (2020), the Eastern and Central Europe is one of the regions that exhibit lower levels of digitalization, especially compared to its western Europe, with a Digital Ecosystem Development Index of 52.9 with the growth rate 6.89 between 2004 and 2018. Similarly, the European Commission report, on digitalization of its member countries on DESI (Digital Economy and Society Index), has revealed that only three countries of CEE, i.e. Estonia (59.4), Slovenia (52.8) and Lithuania (51.8) have better levels of digitalization with the scores a little above the EU average (50.7) (DESI, 2021). The digital gap is also wide among countries of the region such as Romania with DESI score of 32.9 is ranked 27, the lowest both in CEE and EU. This is further manifested in the fact that the share of the ICT in the GDP of eastern and central European countries has not substantially changed between 2010 and 2019, where increase in the share of ICT in Bulgaria's GDP from 4.8% to 6.6% is the found to be the highest (Eurostat, 2022).

Yet, it is argued that digital infrastructure continues to be central in the economic endeavors not just to lessening the pandemic's impact but also to cope up the compelling challenges in face of accelerated digital transformation. Recent empirical studies have identified how CEE countries could enhance their digital readiness (Naudé et al., 2019); while others have confirmed that the digitization of the economy and human capital improved welfare despite variation among countries of CEE (Grigorescu et al., 2021). However, several studies that are meant to address the direct effect of digitalization on economy have hitherto focused on very few and specific indicators such as mobile phone penetration and broadband internet subscriptions as indicators of digitalization which misses out advanced digital tools and systems such as big data analytics, artificial intelligence (AI) and internet of things (IoT) (Katz & Callorda, 2020; Gruber et al., 2013). The indicators of digitalization are well captured in the DESI comprehensive index, which this study has counted on. It is against this background that this study is designed to analyze the economic contribution of digital technologies in the CEEs at regional and country levels in the context of COVID-19 pandemic (2016 to 2020) by making use of the recent comprehensive index of digitalization. Hence, the main research question of this study is: How digitalization affects the economic growth in the panel of selected countries?

2. Digitalization and Economic Growth Nexus:

Theoretical Framework and the Model

As alluded to, digitalization has gained enormous momentum over the last few decades, and it has revolutionized the way people, consumers and businesses behave, work and communicate globally. This pattern is attributed to the advent of Information and Communication Technologies (ICT) particularly internet and mobile phone technologies that create new products and processes, new market channels and organizational complexities, along with technological advancement. In this regard, a wide range of literature suggest that digitalization drives technological innovation that spurs economic growth, thus, underline the compelling necessity about accelerating digitalization effects across all areas of people's lives and sectors of the economy (ITU, 2021; Gruber et al., 2013). Therefore, digitalization could be understood as a significant factor that may drive economic transformation, via positive externalities in the following manners.

Digitalization, *inter alia*, satisfies the demand for digital products such as communications equipment, computers, and software, cloud computing, mobile web services, smart devices, robotics, and social media. It could also enhance growth through increasing productivity and investments in the ICT using sectors. For instance, a 10% increase in mobile broadband penetration in the Europe region would yield an increase in 2.1% in GDP per capita (ITU, 2021). More recently, the outbreak of the pandemic has further accelerated digital transformation with the increasing tendency towards distributed models of employment and delivery of services and products via digital tools and mechanisms.

Besides, digitalization contributes to economic growth through human capital development obtained through training, education and better health care (Czernich et al., 2011; Gruber et al., 2014; Koutroumpis, 2009). It can also reduce the transaction costs of using data that directly affects how entrepreneurs, policymakers and professionals make decisions (ITU, 2021). Moreover, a study conducted by Li et al. (2020) has revealed that digital technologies are relevant to collect and process accurate consumption information, thus, en-

abling product development with the 5 R's strategy, i.e., reduce, repair, reuse, recycle, and remanufacture, which, in turn, could support eco-product design and promote product optimization thereby reducing negative environmental effects.

Building upon the aforementioned studies, the conceptual framework and nexus between the digitalization and economic growth can be analyzed by using endogenous growth models (Hosan et al., 2022). Endogenous growth theories imply that investment in human capital, innovation, and knowledge have positive externalities and spillover effects in a technology-based economy, leading to economic development (Romer, 1990). Using a simplified Cobb-Douglas production function, the output is defined as:

$$Y_{it} = A_{it} L_{it}^{\alpha} K_{it}^{\beta} \dots\dots\dots (1)$$

Where **K**, **L**, and **Y** respectively refer to physical capital, labor, and output of an economy, **A** indicates the total factor productivity, α and β are the output elasticities of labor and physical capital, respectively. Besides, **i** indicates country, and **t** indicates time in a panel data analysis.

To make advantage of feasible, economical, and affordable technologies and to push the technology frontier (measured by the total factor productivity **A**) upward, the role of digitalization in the production processes is critical (Goldfarb & Tucker, 2019). In this process, digitalization plays a key role in accomplishing economic development (Myovella et al., 2020). Numerous prior studies revealed that economic growth is affected by technological progress, digitalization, financial development, trade openness, remittance, and many other economic, social & political factors (Hosan et al., 2022; Myovella et al., 2020) the digital economy, and ensuring energy efficiency. To date, the linkage between demographic dividend, digital innovation, energy intensity, and sustainable economic growth has not been examined in detail. As such, the focus of this study is to investigate the dynamic linkages among these variables in thirty emerging economies employing advanced econometric methods utilizing panel estimations for the period of 1995–2018. Long-run results suggest that demographic dividend and digitalization stimulate sustainable economic growth in all quantiles. Moreover, energy intensity and economic sustainability are negatively associated with sustainable economic growth, while urban-

ization, capital formation, and industrialization are positively related. The policy implications of this study suggest that realizing the opportunities of the demographic dividend and the use of digital innovation in the energy sector will boost economic performance in the digital economy era. Furthermore, the findings lay the basis for policymakers to formulate policies better to accomplish the Sustainable Development Goals (SDGs). In this study, digitalization is taken as the main variables of interest, whereas gross capital formation, labor, financial development, trade openness, remittances are considered as control variables.

As indicated above, digitalization drives technological innovation and process reengineering to help a country’s industrial and economic growth by functioning as a catalyst for large-scale job generation through digital platforms (Pisu et al., 2021). These effects have positive externalities that contribute to overall economic growth (Afonasova et al., 2019). Similarly, financial development increases the financial services and activities in the country during the process of saving or transforming money, which in turn enhances the production process in the country (Omri et al., 2015). A country’s trade openness which shows its comparative dependency on foreign trade and is measured as a ratio of values of the total volume of trade to its gross domestic product (Keho, 2017) might also stimulate the index of technology because trade spurs technological diffusion and transfer of knowledge and skills, leading to an efficient allocation of resources and increase in factor productivity and is instrumental to the economic growth of a country (Islam, 2021). In addition, foreign remittances inflow is the source of capital providing investment to establish and run small- and medium-sized businesses; helps to increase the per capita income and boost economic activities in a given country (Meyer & Shera, 2017).

Technology can, thus, be endogenously determined by digitalization (**Dgtlz**), financial development (**FD**), trade openness (**TO**), remittance (**REM**), etc. in the extended Cobb-Douglas production function. Therefore, replacing A_{it} with these variables, equation (1) can be redefined as follows to assess the connection between the digitalization, and economic growth:

$$Y_{it} = f(Dgtlz_{it}, L_{it}, K_{it}, FD_{it}, Rem_{it}, TO_{it}) \dots\dots\dots (2)$$

Finally, all variables used in this study, except Y_{it} , were converted to their logarithmic form by taking the natural log of each variable to maintain the simplicity of estimations, minimize the problem of heteroscedasticity, and obtain more accurate and reliable results than a simple linear approach. Thus, the panel model was re-expressed in its log-log form as:

$$Y_{git} = \beta_0 + \beta_1 \ln Dgtlz_{it} + \beta_2 \ln L_{it} + \beta_3 \ln K_{it} + \beta_4 \ln REM_{it} + \beta_5 \ln FD_{it} + \beta_6 \ln TO_{it} + \beta_7 d_{17} + \beta_8 d_{18} + \beta_9 d_{19} + \beta_{10} d_{20} + \beta_{11} d_{20} \ln Dgtlz_{it} + u_{it} \dots \dots \dots (3)$$

β_0 indicates the intercept of the model, β_1 is the coefficient of digitalization, and the coefficients β_2 , β_3 , β_4 , β_5 , β_6 , β_7 and, β_8 represent **labor**, **Capital**, **REM**, **FD**, and **TO** respectively. In the model, u_{it} is the residual term. The variable d_{20} is dummy variable equal to one if the observation comes from 2020 and zero if it comes from other periods. The intercept 2020 is $\beta_0 + \beta_{10}$. The level of economic growth in 2020 is $\beta_{10} + \beta_{11}$ and how the Covid-19 has influenced the level of economic growth in the year 2020 versus the other four years. Therefore, β_{11} measures how the economic growth from another year of digitalization has changed over the 5-year period.

The study relied on secondary data that covers the period of 5 years (2016 to 2020). In so doing, the panel data of eleven Central and Eastern European (CEE) countries (i.e., Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic and Slovenia) were extracted from the World Bank database and Digital Economy and Society Index (DESI) reports. The OECD (Organization for Economic Cooperation and Development) definition was used for delimitation criteria with regard to the members constituting CEE. However, Albania is excluded from the study due to unavailability data on digitalization, and, therefore, the data analysis herein and the results may not be extrapolated to this country.

3. Results and Discussions

Table 1 below presents descriptive statistics for CEE countries. Overall, all the CEE countries had a negative growth rate in terms of GDP in 2020. This was due to the global pandemic Covid-19 crisis which led to macroeconomic imbalances in these economies. The mean GDP growth rate is 2.2%. The maximum growth rate is 7.3% in registered in Romania in 2017 and the minimum is -8.1% recorded in Croatia in the year 2020, which may be explained by the fact

that the country is more linked to the global economy and, hence, it was deeply hit by the crisis in 2020 following the outbreak of pandemic. The numbers for trade openness is the highest (190.7%) in the Slovak republic in 2018 and the lowest is recorded in Romania in 2020, that is 78%. The degree of digitalization in Estonia, which is 61.1 is almost twice higher compared to Romania's digitalization in 2016. Similar situations have also happened in terms of financial development. The amount of financial development recorded in Estonia the year 2016 is thrice higher than that of Romania in 2019. It has often been observed that the diffusion of digitalization and financial development have generally been very high in Estonia, especially in the last five years.

Table 1: Panel Data Summary of Variables and Measurement (Total Observations = 55, i.e., 11 countries multiplied by 5 years)

Variable	Description	Variation	Mean	Std.dev.	Min
Economic growth	GDP growth (annual %) in constant 2015 US\$	Overall	2.22	3.42	-8.10
		Between		0.79	1.05
		Within		3.34	-6.93
Digitalization	Digitalization index measures four dimensions of digital technology namely: human capital, connectivity, integration of digital technology and digital public services	Overall	44.64	7.03	32.00
		Between		6.78	34.58
		Within		2.61	38.94
Financial development	Domestic credit to private sector (% of GDP)	Overall	47.28	11.61	24.74
		Between		11.78	26.22
		Within		2.51	42.51
Trade openness	Total trade (Import plus export) as a percentage of gross domestic product	Overall	133.12	29.30	78.98
		Between		30.00	84.42
		Within		5.01	119.26
Capital	Gross capital formation as % of GDP	Overall	22.48	3.24	13.47

Source: Own Computation, 2022.

N.B.: WDI indicates the world development indicators, whereas DESI is the Digital Economy and Society Index.

An attempt was also made in the study to analyze the variation among panel countries and within each country for the period under investigation. The overall variation (over time and countries (i.e.,) can be decomposed into the

between variation (variation between countries) and the within variation (variation within countries over time). The within variation () reflects the time-series or within-country information reflected in the changes within countries across time, whereas the between group variation () measures variation of the means across countries. Using the standard deviation, as in Table 1 above, we can observe that there is more variation for the growth rate within countries (3.34) than between countries (0.79). Digitalization has about the reverse variation between countries (6.78) and within countries (2.61), which is consistent with previous studies that confirmed digitalization and its effect varies greatly in the CEE countries (Brodny and Tutak, 2021; Grigorescu et al., 2021).

3.1. Econometric Model Estimation Results

We attempted to investigate the pair-wise correlation among the studied variables before performing the regression analysis, and we found that there was no perfect correlation among them. Some variables were positively correlated, and others were negatively correlated. But this doesn't imply that digitalization or other independent variables didn't affect economic growth in the selected CEE countries as correlation doesn't necessarily imply causation.

We used the pooled OLS, the between estimator, and the first difference estimator models to estimate the coefficients after ensuring that there was no perfect collinearity among variables in the data, as shown in table 2.

Table 2: Effects of Digitalization on Economic Growth

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Pooled OLS	Between Estimator	First Difference Estimator	Dummy Variable Regression	Fixed Effect	Random Effect
lnDgtlz	1.218	15.296	14.282	-8.278	-8.278	0.765
	0.458	0.271	0.182	0.094*	0.094*	0.751
lnK	-1.17	-3.279	4.833	-0.798	-0.798	-2.121
	0.277	0.328	0.329	0.713	0.713	0.149
lnL	-0.784	4.174	-8.211	25.474	25.474	-0.393
	0.863	0.658	0.84	0.185	0.185	0.955
lnREm	-1.202	-0.975	-1.158	-4.935	-4.935	-1.561
	0.001***	0.206	0.639	0***	0***	0.002***

lnFD	-1.733 0.007***	0.078 0.963	-21.352 0.019**	0.645 0.819	0.645 0.819	-1.842 0.053*
lnTO	-1.508 0.088*	-2.503 0.296	35.726 0.002***	9.793 0.079*	9.793 0.079*	-1.495 0.276
d ₁₇	1.483 0.002**	.	.	0.993 0.061*	0.993 0.061*	1.511 0***
d ₁₈	0.99 0.039**	.	.	0.591 0.408	0.591 0.408	1.068 0.015**
d ₁₉	0.51 0.304	.	.	0.778 0.398	0.778 0.398	0.593 0.237
d ₂₀	-19.634 0.028**	.	.	-29.545 0.001***	-29.545 0.001***	-21.513 0.006***
d ₂₀ lnDgtlz	3.181 0.168	-66.279 0.298	11.378 0.488	5.678 0.008***	5.678 0.008*	3.663 0.072*
Constant	20.482 0.187	-0.349 0.991	-1.772 0.029**	-118.102 0.169	-118.102 0.169	24.101 0.31
R-squared	0.928	0.8949	0.753	0.965	0.9648	0.9496
F-test	44.953	1.30	13.369	73.194	73.19	$\chi^2(11) = 682.71$

*** p<.01, ** p<.05, * p<.1

Source: Own Computation, 2022.

However, these models, particularly pooled OLS, fail to account for the nature of panel data (Hsiao, 2014). Thus, we resorted to other suggested models for estimation, such as dummy variable regression, fixed effect, and random effect models. Because the coefficients of the variables of the dummy variable regression and fixed effects model are the same, we used the fixed effect model for estimation.

As Table 2 (above) shows, columns 5 and 6 present the results of the Fixed Effect and Random Effect models. The Hausman test is used to decide whether to use the fixed effects (FE) or random effects (RE) estimator. In the Hausman test, the null hypothesis, which says there is no correlation between individual specific effects and independent variables, and FE and RE coefficients are not significantly different from each other is rejected at 10% ($\chi^2(12) = 18.66$ with a Prob > $\chi^2 = 0.0971$). This provides empirical support for using fixed effect model over random effect model for estimation as fixed effect estimator is consistent (Wooldridge, 2010). This indicates that some correlation between individual specific effects and independent variables was observed.

In the table, the results for digitalization, remittance, the 2020-year dummy and the interaction variable between the 2020-year dummy and digitalization show a reverse effect on the economic downturn. The coefficient of digitalization indicates that for each additional percentage increase in digitalization, the growth downturn was lower by 0.5%. Thus, digitalization seems to play an important role as a fundamental infrastructure that affects almost all sectors. On the other hand, trade openness had a positive coefficient suggesting that the more liberalized the economies were the more it inversely contributed to their economic slowdown. The coefficients on time dummies and financial development were not significant. In the pooled OLS and fixed effect models, the coefficients show positive contributions to economic growth. However, in the third model the coefficients are negative. The effects of labor-force and capital on economic growth is insignificant in all models.

4. Conclusion

Digitalization has happened to be in increasingly relevant research topic recently especially following the outbreak of the COVID-19 that elevated the importance of digital technology amidst the so-called “new normal” characterized by lock-down and social distancing. However, the actual and potential effects of digitalization are uneven due to the prevailing digital divide across different regions of the world makes. It is within this context that this study is meant to investigate the effects of digitalization on economic growth in 11 countries of Central and Eastern Europe based on a panel data obtained from the WDI and DESI. In so doing, an attempt has also been made to carefully examine the statistical significance of digitalization within each country and variation among countries for the period under study.

In the final analysis, it is found that variations in economic growth were observed within countries than between countries, whereas digitalization, financial development and trade openness exhibited significant difference between the countries than within a country. Regression results from both pooled OLS and between estimator models revealed that the effect of digitalization on economic growth over time is not significant although the result must be taken with some degree of caution. After applying the Hausman test for model selection, we have used the fixed effect model or the random effect model for estimation. Considering the fixed effect model or dummy variable regression,

digitalization, trade openness, remittance, the 2020-year dummy and the interaction variable between the 2020-year dummy and digitalization after the outbreak of the COVID-19 pandemic (i.e., year 2020) were significant. Yet, we recommend that future studies consider long-term data of digitization and including other variables to systematically capture its effects on GDP growth beyond current macroeconomic shocks.

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Máté Bencze

Capture the moment – showcasing collaboration

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Abstract

This study presents how to capture networking and collaboration in a community space using the methodology of videography. In addition, this research method allows presenting an artistic vision, matching science and visual art. According to Sherry and Schouten (2002) one of the more compelling advantages of video presentation is the ability to engage the audience with a multi-sensory set of materials that ideally make it easier to gain not only a cognitive knowledge about something, but also a more emotional and “resonant” knowledge of the experience of something (Belk, 1998).

We filmed four days in Vászoly, in Balaton-uplands, in the first coliving in Hungary named PortusHome Coworking & Coliving. This space is an office with an apartment where people regardless of their job can work in an open setting or a small office. They can use the shared facilities, engage with other people and even might be able participate in events (Orel, Mayerhoffer, Fraticova, Pilkova, Starnawska & Horvath 2021). We participated in the Re-charge coliving camp and interviewed the owner, the community manager, the participants, and the locals providing the community-building programmes. Our goal was to explore the methods of tribal community building as much as possible and observe the collaboration between the participants. The result of several days of filming is a depiction of an intangible phenomenon.

Keywords: collaboration, coliving, neotribalism, videography

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1. Introduction

The worldwide spread of the coronavirus affected our working environment also. As a result, many employers switched to remote working, even in some industries where it would have been previously unthinkable. In order to cover increased workforce needs, the coworking spaces provide part of the solution. These spaces are shared workplaces utilized by different sorts of professionals. Practically conceived as office-renting facilities where workers hire a desk and a wi-fi connection, coworking spaces offer a solution to the problem of isolation that these workers can experience when they work from home and enable them to work side-by-side with professional peers (Gandini, 2015). Modern coworking spaces first appeared in the early 2000s, with their numbers almost doubling on an annual basis ever since. It had been projected that by the end of 2024, the number of coworking spaces will surpass 42,000, with an estimated 5 million individuals using their local coworking hub daily (Di Risio, 2020). Clearly, these projections will need to be adjusted in light of the presentday pandemic.

This is a trend that is moving towards to coliving, where people with the same knowledge and interests not only work, but also live together. Coliving is a for-profit, intentional, purpose-driven, privately managed and delivered shared housing, emerging as a 'commercial response to the specific needs of young professionals sharing mainly in large cities' (Heath, Davies, Edwards, & Scicluna, 2018). Coworking and also coliving spaces increase productivity, boost creativity, provide individuals with greater flexibility, and enhance networking opportunities. Due to their open or semi-open workspace design and the availability of a vast array of mediation mechanisms, coworking environments tend to foster both formal and informal encounters between regular users. Furthermore, human interaction positively contributes to an individual's well-being, helping him or her to balance work-life obligations. (Kwiatowski, 2012; Gordan, 2018).

The main characteristic features of these spaces (in addition to ensuring a sophisticated working environment) is giving the opportunity to make connections, build a network and be part of a community, more precisely, become a tribal member. This research aimed to examine how the space design and the expertise of the management of a coliving space supports the interactions be-

tween the members. What are the main mediation technics which facilitates building a community and its transformation into a post-modern neotribe? Especially when participants only stay one week on the coliving. What types of relationships are formed, friendships or business partnerships, or do the participants have no purpose of making relationships and are they just for leisure and recreation purposes?

2. Theoretical background

The central idea of coliving is to create conditions where life reaches fulfillment through the realisation of professional or entrepreneurial ambition and which maximize the chances of work-related and economic success. Simultaneously, colivings seek to make life 'liveable' and attractive in relation to often intense and demanding work (Musilek 2020). It is important to note that these spaces are not homogenous. There are currently different types of coliving spaces in the market, such as single versus branded co-living, small versus big scaled coliving, as well as different themes and designed coliving (Wang et. al. 2019). The rural coliving offers a short-term apartment renting that focuses mainly on recreation and relaxation. In contrast, urban coliving is more of an opportunity for business connectivity and a rental of long-term accommodation. In order to interact the users with each other, it is essential to have a community manager in the space. Community managers are not only responsible for handling administrative tasks and handling complaints, they are also responsible for organizing events, so that these events create opportunities for networking, socializing and a feeling of community to breed. (Wang et al. 2019; Fix and Lesniak 2017).

It is important to emphasize that the resulting community is not a simple fellowship but rather a post-modern neotribe. Communities are based on tribalism, but the two concepts should not be confused. Neo-tribes are "characterized by fluidity, occasional gatherings and dispersal" (Maffesoli 1996). The tribes are held together by the ritual manifestations of the members, they are made up of the symbols they interpret, and they are capable of forming a specific subculture. According to Cova and Cova (2002) the characteristic feature of postmodern neo-tribalism is that it expresses belonging to several groups at the same time, thus tribalism does not give personality characteristics, but rather expresses common experiences. Because today consumers are looking

not only for products and services which enable them to be freer, but also for products, services, employees and physical surroundings which can link them to others, to a tribe.

Therefore the main task of the community manager is to bring common interest to the surface and facilitate the sharing of symbols, which can lead to the formation of a neotribe and this relationship facilitates collaboration easily between them. The primary purpose of the research was to examine collaborations in the space. Accordingly it is required to clarify the phenomena of collaboration. Collaboration differs from cooperation in two main ways. First, cooperation is motivated by the benefits each party expects to receive from combining ideas, information, and resources. Therefore, while cooperative behavior may be enjoyable in its own right, it is primarily extrinsically motivated. Second, because cooperative behavior ultimately involves the pursuit of self-interest, it requires periodic or even continual assessment by each party of the amount of trust and commitment of the other party. In collaborative relationships, on the other hand, each party is as committed to the other's interests as it is to its own, and this commitment reduces the need for the continual assessment of trust and its implications for how rewards will be divided. Because it is the relationship itself that is valued, collaborators can focus on its intrinsic aspects confident - that any future returns will be equitably allocated. Thus, a collaborative relationship is built on intrinsic motivation and caring trust (von Krogh, 1998) In the course of my research I also examined the steps of creating intrinsic motivation and caring trust.

The specificity of coworking and coliving spaces are collaborative mechanisms emerge not only between the users but also the spaces and the environment. From a broader perspective, coworking and coliving spaces can help stimulate local economies as they offer support to small businesses, establish a network for the purchase and sale of services, keep highly skilled talent in the area, and open access to business resources that can be accessible both to users as well as for the surrounding communities (Kwiatowski, 2012; Gordan, 2018).

3. Methods

The methodology of my research is a relatively new scientific approach. Videography is a way of representing and theorising phenomena in social, cultural and spatio-temporal contexts; a way of isolating 'difference, dialogue, place and time' (Cubitt, 1991). Over the past 30 years, these films have evolved from 'talking-head' interviews and didactic films with 'voice-of-God' narration to more observational, active and experimental films. This evolution has resulted from both trying to make these films more effective research rather than pedagogic vehicles and from trying to engage the audience and stimulate two-way active exchanges rather than passive viewership – an ever-present danger with films. (Belk et.al. 2017) For me personally this method is an opportunity to present an artistic vision, and try to match science and visual art. Belk et. al. (2017) reveals that videography has assumed increasing importance as a medium of scholarship within the domains of consumer research and marketing. Philosophically anchored by the traditions of visual anthropology, sociology, arts and aesthetics as well as visual culture, it represents a different perspective on phenomena from that traditionally associated with marketing or business. Kozinets and Belk (2006) have described six different types of videography, i.e., (1) videotaped interview, (2) observational videography, (3) autovideography, (4) collaborative videography, (5) retrospective videography, and (6) impressionistic videography. However, they are quick to state that these six formats are neither mutually exclusive, nor exhaustive. This videographic research can be considered a combination of the above three archetypes because videotaped interview, observational videography, and collaborative videography elements both appear in it.

Along with a professional documentary cinematographer, we filmed four days in Vászoly, in Balaton-uplands, in the first coliving in Hungary named PortusHome Coworking & Coliving in January 2022. In addition, the management set up a one-week program (Re-charge) which focused on networking and relaxation. According to Portushome Impact Report, Re-charge program is one of the flagships of PortusHome, designed for location independent entrepreneurs and home office employees who want a little peace of mind and recharge, but would also like to combine this with efficient working days. During the day everyone is working in a beautiful environment in a modern coworking place, from Sunday to Friday. After work the participants are clos-

ing the day with a special, recharging experience every day. These programmes were as follows: nordic walking tour, cooking workshop, fragrance journey, filling out a year compass book, and a community breakfast. We interviewed the owner of Portushome, the community manager, the participants, and the local service providers who arranged the community-building programmes.

Table 1 Management and participants relation to collaboration

Role	Employment	Collaborative approach
Founder and owner of Portushome	remote worker (engineer)	I would like to create a small microcosm here where like-minded people from all over the world gather to share their experiences, best practices on entrepreneurship, career, work-life balance and good life in general.
Community manager and marketing specialist of Portushome	employee (marketing & business development strategist)	Some people connect very quickly with others, some people need some time. The key elements of community management are to understand what is the different speed of the different people and create this frame in this whole atmosphere and environment where the participants can naturally connect to each other.
Service provider	Co-founder of an SME (chef)	Somebody talks about how he cooks and during the making process, we share our knowledge.
Participant	extended worker (software developer)	I was also planning to open a coworking space. That is why I am here and I would like to meet similar people and make relationships.
Participant	freelancer (UX & marketing specialist)	I want to recharge here and during the pandemic, it was tough to meet new people and connect them, so it is an excellent opportunity.
Participant	bank employee (corporate finance division)	I was wondering where I am after two years of closure and I would like to get new impulses.
Participant	employee (IT project manager)	I think these kind of people, including me, always search for new opportunities. Maybe you do not have a goal or an intention, but who knows? Maybe there is. You are open to that possibility and anything can happen.

Participant	employee of an NPO (events industry sales manager)	There will be a chance to collaborate with some of the people here. Unfortunately, I did not arrive at the exact idea to collaborate. However, always lovely to meet new people and find the meeting points.
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Source: own research

We also analysed the role of the community manager, asking her to check in before each event and record on her cell phone what she expects from the programme what she is doing to get participants to interact with each other.

4. Results

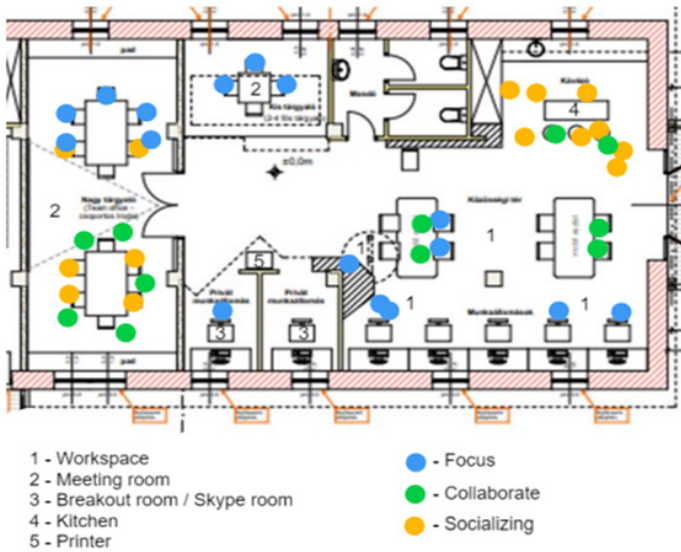
The participants got to know each other by the end of the first day. After their arrival, the community manager guided them around and in the evening, they introduced themselves. On the first full day during the working hours, everyone worked on their project, but in the nordic walking tour, they were mixed in a group of 2-3 people where the common interests were revealed, mainly job-related, business or family topics were discussed. In the evening, the community manager organized a board and card game event, where half of the participants attended. Some were still working. Some were relaxing in the apartment.

The second day they communicated a lot more during the working hours, asking for each other's help, having a coffee together, and having lunch together. In the early afternoon, preparations began for the cooking workshop. The event was also attended by outsider participants from the neighbourhood, who easily fitted in. During the cooking, everyone focused on the food preparation. The joint dinner created the place to become better acquainted. Commensality, defined as "eating at the same table" or the act of eating together which has a long lineage of research and has been regarded as one of the milestones of human civilization helping to form bonds both within and beyond immediate family groups. Eating together is regarded as interactional, as an act of communication between participants; (Giacoman, 2016:463) Material element that contributes to more intimacy is the sitting together at the same table eating the same food, which not only increases trust around the edibility of the meal, but it also engenders social relationships thanks to the sustained encounter between participants.

The ritual of the meal reduces anxieties about encounter of social differences (Wise, 2011) and it is instrumental to the creation of a space of safety (Wise and Noble, 2016).

The following action map can be drawn on the third day's working hours based on our video analysis. Users have come outside of the Re-charge programme. Their interactions are also on the action map.

Figure 1 Action map



Source: own research

The blue-coloured symbols show the focused work. The green-coloured symbols show collaborative interactions, business workshops, or business conversations. The yellow symbols illustrate eating, drinking coffee, or small talk. It should be noted that the apartments are not displayed, but in addition to relaxing, the participants often worked there if they did not want to participate in the program or worked with sensitive data.

The fragrance journey was a spiritual adventure in the afternoon, where the participants created their essential oils. Unfortunately, the organizer of the programme did not even allow us to make footage not to disturb the spiritual part of the workshop; therefore, only after the event could we talk to the participants. However, they seemed transfigured, balanced, spirited and felt victorious.

On the fourth day, all workstations were busy. As a result, there were fewer socializing and collaborative interactions. After lunch, the programme was to fill out a year planner book. In this event, the focus shifts from community to individual planning, thus conditioning participants the Re-charge coliving camp coming to an end soon. The community breakfast of the last day was already about saying goodbye.

However, the participants had all the circumstances to collaborate, this did not happen entirely because it was not the primary goal of them (there were exceptions, e.g. the bank officer had a business consultancy concerning finance and financing matters). Instead they were focusing on recreation, and to re-charge, also they were trying to work on their projects, away from workplace away from a home office. This attitude also stems from the fact that most employees were not entrepreneurs or start-uppers. Therefore, the design of the space provided an ideal opportunity to concentrate on work; the organized events gave a chance to build friendships throughout the week. However, for them, the most crucial aspect was to be around people in the same life period when a decision has to be made to be an employee or an entrepreneur, self-employed person, or freelancer.

5. Discussion and recommendations

Seen from the community manager's perspective Re-charge coliving-camp was successful, the post-modern neotribe was created due to the programs and her facilitation techniques, and last but not least, the open-minded attitude of the participants became visible. This tribalism leads to a higher level of consumer engagement, which results in them becoming part of the company completing specific value-creating work processes. As a result, the Portus-tribe started to develop day after day. An example of sharing the symbols was that one of the participants named its essential oil to Portus-drops. The

Portus tribe's evolution also reflects that social media group have been active ever since, and all the participants stated that they will return, working or relaxing and communicating this lifestyle to their colleagues and friends as well. The management organized programs that are present in our everyday lives, but we have no time to spare during the rush hour. These events also help the participants to find directions for their path and find themselves without leaving society altogether but paying attention to themselves and each other.

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Réka Kertész

The Revolutionary Digitalization of Taxation in Hungary

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Reviewer: Dr. László Péter Lakatos

Abstract

In my research, I deal with the revolutionary digitalization of the Hungarian tax system, which poses new challenges to the tax office, taxpayers and their support service providers.

The topicality of my choice of topic is given by the fact that version 3.0 of National Tax and Customs Office's (NTCA) latest „miracle weapon”, the Online Invoice System, was introduced during my research period, and it was announced that a draft VAT return will be offered to taxpayers. They are the culmination of a decade-long process.

The 21st century has brought new challenges with the development of science and technology, which have fundamentally reshaped our lives, economies and taxation. And the new challenges have also brought about new expressions in our everyday lives. In connection with the digitalization of accounting, taxation and bookkeeping, this process can best be illustrated by performing previously paper-based bookkeeping, invoicing, filling in tax returns, and tax audits using software or automation.

The Hungarian tax authority has been dictating an extraordinary pace of digital innovation in the last decade, which has accelerated even more in recent years, and since July 2018, a real digital revolution has begun in the Hungarian tax system. This is because in recent years the tax authority has fundamentally changed its relationship with taxpayers by fulfilling the obligation to provide immediate information. The immediate analysis of this incoming data has made the selection process for audits more efficient. As a research question, I examine what digitalization systems the Hungarian tax authority has introduced in Hungarian taxation, for what purposes they have done so, and whether they have achieved or are expected to achieve their objectives. I study especially the latest digitalisation development of the Hungarian tax authority, the Online Invoice System, and I review why the public mentions it as NTCA's latest „miracle weapon”. I also examine what further digitalisation efforts are expected in taxation in Hungary in the future.

Keywords: Online Invoice System, „miracle weapon”, digitalization, NTCA

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1. Introduction

The Hungarian tax authority has been dictating an extraordinary pace of digital innovation in the last decade, which has accelerated even more in recent years, and since July 2018, a real digital revolution has begun in the Hungarian tax system. According to the interpretive dictionary published by the Hungarian Academy of Sciences, the revolution is a radical turn, a transformation in economic life, technology, science, literature or art. This definition characterizes National Tax and Customs Office’s (NTCA) digital aspirations in the transformation of taxation, as the tax authority has fundamentally changed its relationship with taxpayers in recent years by meeting the obligation of providing immediate data. The immediate analysis of this incoming data has made the selection process for audits more efficient, and the transformation has made it possible to provide services on the part of the tax authorities that reduce the administrative burden on companies.

As a research question, I examine what digitalization systems the Hungarian tax authority has introduced in Hungarian taxation, for what purposes they have done so, and whether they have achieved or are expected to achieve their objectives. I study especially the latest digitalisation development of the Hungarian tax authority, the Online Invoice System, and I review why the public mentions it as NTCA’s latest „miracle weapon”. I also examine what further digitalisation efforts are expected in taxation in Hungary in the future.

My aim with research is to summarize and present the digitization process of the Hungarian tax system in English. In connection with the results of my research, my expectation and assumption is that the introduction of digitization systems will whiten the economy, encouraging taxpayer compliance, reducing administrative burdens and benefits to increase government revenue.

2. Theoretical background

A tax system can be optimal if it distorts the decisions of economic operators the least, if it is fair, and the administrative costs of tax collection are low. The theoretical literature considers taxes on capital income to be the most damaging because they distort savings and investment decisions the most, thus preventing capital accumulation and slowing economic growth. The second tax with the most negative effect on economic growth and employment is the labor tax. If a worker's net wage decreases as a result of a tax increase, they will only be able to maintain their previous level of consumption with more work, resulting in a reduction in their leisure time. According to the literature, the least restrictive taxes on economic growth are taxes on consumption, which also include value added tax. This can be explained by the fact that they do not distort savings and investment decisions and involve lower administrative costs. (Scharle - Benczúr - Kátay - Váradi, 2010; European Commission, 2011; OECD, 2010; Csomós - P. Kiss, 2014)

The Hungarian government took the path of the theoretical literature in spring of 2010, when it began a comprehensive overhaul of the tax system for economic growth. The focus of the reform was on macroeconomic changes in personal and corporate taxes, consumption taxes and the tax burden. The new direction of the tax system shifted the tax burden from income taxes to consumption taxes. As a result, the tax burden on employees and businesses has been reduced, and an increase in revenue from sales tax has created a source of revenue for income taxes. (Szilovics, 2014)

3. Methods

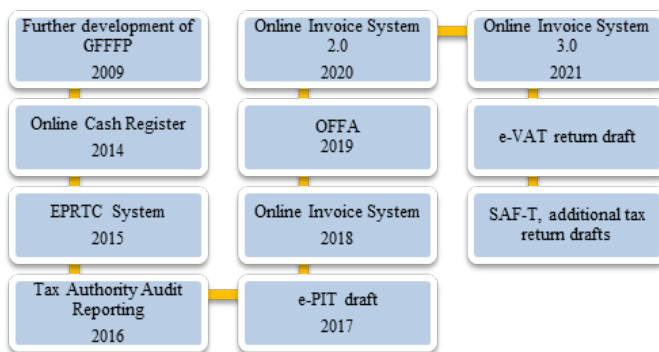
I use the methodology of literature review and source analysis to answer the research questions. Some of the literature used for the paper are book excerpts, journals and publications, and some are articles collected from the internet. When selecting the literature, I first selected the journals related to Hungarian taxation. Due to the novelty of the topic, however, there have been limited articles on it in these journals. Therefore, I also reviewed the content published on the internet. During this review I primarily processed the work written and published by tax professionals. The keywords I was searching for on the internet were 'Online Invoice System', 'digitalization' and 'NTCA'. The

data used to illustrate the results were derived from studies collected and published by the European Commission, as reliable data on this topic is not published by another organization.

4. Results

Due to the structural transformation of the Hungarian tax system, the efficient and simple collection of sales taxes and the exercise of greater control over the processes have become more important. The tax authorities have been using software since the early 2000s to support audits, but data from taxpayers was unstructured, so much of the time spent on tax audits was spent converting incoming data into a uniform, analytical software-readable format. In order to speed up this process and make controls more efficient, the tax authority has introduced digital systems that provide data in an appropriate format, unified structure and in real-time. In addition, the digitization systems introduced are further aimed at curbing the black economy, encouraging compliance and reducing administrative burdens. Most of the introduced digital systems are closely related to VAT tax, however, with the preparation of the e-personal income tax (PIT) draft, a revolutionary innovation was also made in connection with the PIT. In the further parts of my research, I describe the process of digitization of Hungarian taxation presented in Figure 1. (Andersen, 2021; NAV, 2012; Kalocsai - Garami, 2018)

Figure 1.: The process of digitization of taxation in Hungary



Source: own editing

Further development of General Form Filling Framework Program (GFFFP) - as of 2009; GFFFP includes various forms that must be downloaded and updated separately.

Online Cash Register – from September 2014: it was an important first step in the fight against the black economy. The purpose of the introduction was to increase VAT revenues, curb sales without invoices, and support the tax authority's audit and selection process. (Salamon - Beke - Teski, 2021; Sárvári, 2019)

The Electronic Road Traffic Control System (EPRTCS) – from 2015: it is against fictitious export sales, transport documents and also tax fraud. This marked another important step in the digitization efforts of the tax office, helping NTCA's audit work, making economic processes more transparent and broadening the range of compliant taxpayers. (EKAER, 2021)

Tax Authority Audit Report – from 2016: this feature can help to standardize audits, allowing data to be provided in a fast and consistent manner for invoices issued by the taxpayer's billing program. This information can only be provided in the context of a tax audit. This also paved the way for the introduction of the Online Invoicing System. (NAV, 2015)

E-Personal Income Tax (e-PIT) draft – from 2017: the NTCA automatically prepares a draft electronic PIT return online for all individuals without prior request. This was an important step towards digitalisation, as it reduced the administrative burden for individuals to complete their tax returns. (Harkai, 2017)

Online Form Application (OFFA) – from 2019: the tax authority intends to use this service and the data already in its register to help taxpayers meet their obligations. An important advantage of OFFA is that the process is entirely online and performs real-time error checking and sends feedback to the user after submission.

In the following, I would like to highlight the Online Invoicing System among the introduced digitization systems. In the field of digitization, the Hungarian tax authority focuses on the value added tax, as it is one of the largest and most significant types of tax in Hungary today.

The immediate antecedents of the Online Invoice System introduction are as follows:

- Preparation of an itemized domestic VAT summary report from 2013 as part of the VAT return. Above certain VAT limits, invoices had to be reported separately ex-post. This was a significant administrative burden.
- As of October 2014, the NTCA was required to report who, from when, which billing program to use.
- From 2016, tax audit data had to be reported to the tax authority. This will help standardize controls and also prepare billing programs for the introduction of an online invoicing system.

The first news about billing programs and NTCA connectivity came out in December 2016. At that time, it was still possible to hear that in 2017 the billing programs would have to be connected to the tax office. Finally, the launch of the system was postponed to July 1, 2018. Arming the system has brought about a revolutionary digitalisation of taxation and has been a major breakthrough for both the tax authorities and taxpayers. Despite the extended preparations, the introduction brought significant changes and challenges for the NTCA, billing programs, and businesses alike.

Norbert Izer, Secretary of State for Taxation at the Ministry of Finance, stated the following about the purpose of introducing the Online Invoice System: “The triple goal system of the Online Invoice System is also exemplary internationally. On the one hand, it helps to curb VAT fraud, on the other hand, it encourages businesses to adopt digital solutions, and on the third hand, once the tax office receives data on virtually all invoices online, the authority will be able to prepare a draft VAT return for domestic businesses.” (Index, 2020) This target system is complemented by more efficient risk identification and management by making significant account traffic available to NTCA. (Online Számla, 2021)

In the following, I would like to present the introduction of the Online Invoice System. The first version was introduced on July 1, 2018.

- From then, the data provision of the issuer and the recipient are separated.
- Real-time, immediate, itemized reporting of transactions between domestic taxpayers from the seller's side.
- The reporting obligation applies to invoices with a VAT term of HUF 100,000 or more.
- Recording of a manual invoice within 1 or 5 calendar days. This meant double recording, as the invoice had to be issued manually and then the data had to be entered manually into the system.
- Introduction of an Online Invoicing Program: help entrepreneurs meet their online billing obligations for free. (Czöndör, 2018; Sinkáné, 2018)

The second version was introduced on July 1, 2020. The innovations of this were as follows.

- The amount limit will be abolished, invoices with a VAT period of HUF 100,000 must also be declared.
- The obligation to provide information is extended to cover reverse charge and tax-free transactions.
- The deadline is modified for manual invoicing is 1 or 4 calendar days.
- Data records of incoming invoices have become fully searchable and downloadable: they can play a major role in the invoice processing process.
- Online Invoicing program mobile application development: administrative burden is reduced. (Czöndör, 2020a; NAV, 2020; Nagy, 2020)

The third version was introduced on January 4, 2021.

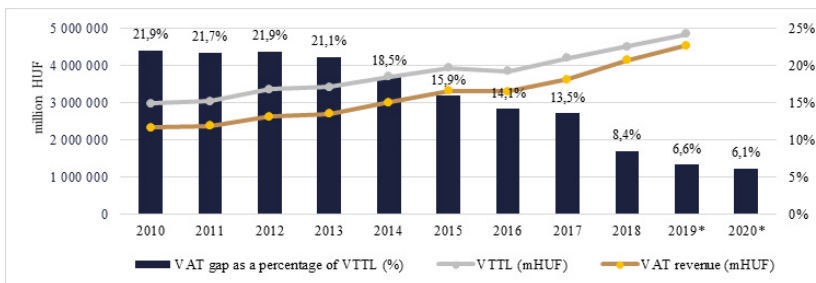
- From then, the obligation to provide information extended to invoices issued to non-taxable persons and to invoices issued to foreign VAT entities. This completes the invoice data service.
- In the case of a private customer, according to the VAT law, the content of the invoice and the data supply are separated in this case. While

the name and address of the buyer must be indicated on the invoice, the provision of data does not cover this data in order to protect the rights of the individual.

- Electronic invoice has been supported: it must be marked as an electronic invoice, you will receive a hash code that ensures the authenticity of the electronic invoice and the unalterability of its data duration. Archiving can also be performed with it, but the tax authority undertakes no obligation to store them.
- The system has reached its limits in the current legal environment. (Czöndör, 2020b; NAV, 2021)

Finally, I present the results and experiences of the operation of the Online Invoice System and examine whether it has achieved its initial objectives. The most important goal was to whiten the economy and reduce VAT fraud, the result of which I would like to show by analyzing the so-called VAT gap. The VAT rate published by the European Commission represents the difference between the expected and actual VAT receipts. Expected tax revenue is defined as VAT Total Tax Liability (VTTL), which is calculated by the European Commission on the basis of final consumption liabilities and macroeconomic indicators. Figure 2. illustrates the size of the expected, ie total and actual VAT revenue, and the value of the resulting VAT gap as a percentage of the total VAT liability between 2010 and 2020. (European Commission, 2020)

Figure 2.: Expected and actual VAT revenue and VAT margin as a percentage of VTTL in Hungary between 2010 and 2020



(Source: own editing based on studies by the the European Commission on VAT)

Based on the available data, we can say that the system has lived up to its promise almost immediately. Thanks to the introduction of the Online Invoice System, there was an outstanding improvement in 2018 in the VAT gap as a percentage of expected VAT Total Tax Liability. Among the European Union member states, the indicator decreased the most in Hungary this year by 5.1 percentage points, reducing the VAT gap to 8.4%. This is when the indicator fell below the EU average for the first time. And based on forecasts, a further decline is expected. Based on the presented data, the Online Invoice System deserved the title of NTCA's latest miracle weapon, and it can be stated that it fulfilled its hopes and achieved its most important goal - even exceeding the plans - which was to whiten the economy and curb VAT fraud.

The second goal of the introduction of the Online Invoice System was to encourage taxpayers to introduce digitization systems. It has become more successful, thanks in part to tax advisors and accountants offering electronic solutions to their clients and of course, the emergence of the coronavirus epidemic also contributed to this. Instead of manual invoicing the invoicing program (2.0) and the support for electronic invoicing (3.0) open new doors for taxpayers. (Online számla 3.0, 2020)

Another goal of the tax authority is to help taxpayers with an e-VAT draft return after version 3.0, when they can see all invoices. Its introduction was originally planned for the second half of 2021 by NTCA. However, it is likely that it will take more time to finalize the improvements and implement the system, so there is no public target date yet.

The objectives are complemented by the fact that data analysis can make risk identification, management and tax control more efficient. This data received through the Online Invoice System and other systems can be done with big data analysis. Applying this makes inspections more efficient, reducing the time and number of inspections. In essence, the number of tax audits decreased from one-third from 2015 to 2019, and tax fines imposed during tax audits increased significantly. In addition, the control strategy of the tax authority has changed and supportive customer management has come to the fore. In the case of compliant taxpayers, the sending of information letters was introduced in order to persuade the taxpayer to correct the mistakes, to pay the arrears, and to behave appropriately. In addition to its efficiency, it is an extremely fast and inexpensive way to collect taxes. (Andersen, 2021; Kalocsai - Garami, 2018)

So in summary we can say that, in the 3 years since its launch, the Online Invoice System has achieved almost all of its goals, contributing to the whitening of the economy, encouraging taxpayers to comply with the law and introducing digital solutions in their businesses. It also helped make controls more effective and targeted by analyzing the big data available.

In the near future, the tax authority plans to introduce a so-called Standard Audit File for Tax (SAF-T), which may facilitate the recommendation of additional draft returns in the future. The Standard Audit File for Tax data format recommendation was developed by the OECD in 2005. The purpose of SAF-T is to reduce the time spent on the tax audit process. In addition to tax audits, this can also help the work of accountants and auditors and contribute to the recommendation of further draft returns. (RSM, 2021; AzÜzlet.hu, 2019; Nyirati, 2020)

5. Discussion and recommendations

In my research I dealt with the revolutionary digitization of Hungarian taxation. From 2010 onwards, the tax burden in Hungary shifted from taxes on labor and capital income to taxes on consumption. In addition, the tax authorities aimed to whiten the economy, encourage taxpayers to comply with the law and introduce digital systems, and reduce administrative burdens. To this end, NAV has introduced digitalisation innovations, dictating an extraordinary pace. The GFFFP was further developed, the Online Cash Register, the EPRTC system, the provision of tax authority audit data were introduced, a draft e-tax return for individuals was proposed and OFFA was made available. The process of innovation has recently accelerated, and since the introduction of the Online Invoicing System in July 2018, a real digitalisation revolution has begun in Hungarian taxation. This system replaced the obligation to declare an invoice issued retrospectively and introduced real-time, immediate reporting, which now applies to all invoices issued by domestic taxpayers, without a threshold.

Overall, all the systems introduced so far have achieved their goal, and the change brought about by digitalisation has been truly revolutionary in Hungary: it has contributed to the whitening of the economy, encouraged tax compliance and introduced digital systems, reduced administrative burdens and made tax control more efficient. In addition to the increase in state revenues, taxpayers' morale has also increased, which also promotes the creation of more equal and fairer competition in Hungary, which has outstanding social benefits.

I hope that with my summary article I was able to provide a comprehensive picture of the past, present and future of the digitalisation of Hungarian taxation.

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Kristóf Menyhért

The Life and Work of Luca Pacioli

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Reviewer: Prof. Dr. János Lukács

Abstract

Why is Luca Pacioli called „the father of accounting”? Did he really invent the double-entry system of bookkeeping? Why can Luca Pacioli’s impact on the development of accounting be viewed as revolutionary? These are only some of the questions this research intends to answer. The aim of the research is to organize, summarize and compare the different – primary and secondary – sources that can be found on the subject in order to provide a clear understanding of the life and work of Luca Pacioli and his effect on the different kind of disciplines, especially on the field of accounting. The main goal of this research was to fill a gap as there had not been any significant writings or theses in Hungarian that would analyze this specific subject comprehensively and thoroughly. As a result of organizing, summarizing and comparing the different available sources it becomes unequivocal why Luca Pacioli’s impact is so significant and why it would be essential for both pupils and masters of accounting in Hungary and all around the world to know and honor his legacy.

The original research which was written in Hungarian and which this paper is based on was published as a ‘TDK’ paper in 2020 and later as an ‘OTDK’ paper which won its author 1st prize in the 2021 ‘OTDK’ conference in Hungary in the category of economic history. The paper was later published in a study titled ‘Litera Oeconomiae III.’ in 2021.

Keywords: Luca Pacioli, Pacioli, accounting, double-entry bookkeeping, double-entry, the history of accounting

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1. Introduction

Luca Pacioli's name is known all over the world: he is respected by mathematicians, architects, painters and chess masters for Pacioli's influence on their craft. Practitioners of the accounting profession refer to him as the "father of accounting" or the "father of double-entry bookkeeping". Many foreign researchers deal with him as a topic of their research – mainly in English, German, Italian, Spanish and Japanese. In Hungary and probably in most of Central-Europe, however, the name of Pacioli is unfortunately much less known or almost unknown – unfortunately even among accounting practitioners.

As a result, only a handful of people of our region know about Pacioli, and therefore we could even say that the profession seems to have forgotten its roots. There is no flag under which the profession can unite, which makes it even more difficult for young people in our region to grasp the profession's essence which could contribute to the phenomenon that the arguably not-too popular profession seems to be even more distant for some.

This paper is a shorter, summarized version of the original paper with the same title and topic, but unlike the original paper it focuses mostly on Pacioli's work and professional achievements and less on his life.

2. Theoretical background

This difference in Pacioli's reputation and recognition in Hungary and Central Europe compared to the rest of the world can be traced back to two main reasons. On one hand, the topic is not part of the mandatory curriculum in the education system, and on the other hand there is no truly comprehensive dissertation or other scholarly literature in Hungarian or other Central European languages.

The main goal of both the original research and this summarized version is filling a gap regarding this specific topic, especially among Hungarian and Central European researches – by organizing, summarizing and comparing the different available sources – and at the same time answering the following question: What is the significance of Luca Pacioli in terms of the development of accounting and was he really the father of double-entry bookkeeping? Which is arguably a relevant question regardless of what language we speak and what region of the world we live in.

I think that it is an obligation of a profession to know its roots and its historical figures, especially if a historical figure of a profession did as much for the development of the profession as Luca Pacioli. This obligation is something this paper is intended to meet, at least to some extent.

3. Methods

Most of the source literature used for this paper was gathered from the internet and many of them were provided by Dr. János Barancsuk and Prof. Dr. János Lukács from their personal collections of books and papers and also their own works. The first part of the research which focused on the life of Luca Pacioli was mostly based on Argante Ciocci's work titled *Luca Pacioli – La Vita e le Opere*. I compared the statements written in this work to other papers and biographies I could find in order to provide the most authentic description of the life of the Franciscan monk. As for the second, main part of the paper regarding the work of Pacioli I mostly used and compared McCarthy's and Sangster's papers and presentations but also the works of Pacioli himself, mainly the *Summa* and its chapter on double-entry bookkeeping. Regarding Pacioli's contribution to the development of double-entry bookkeeping – whether he actually invented the method or merely gathered all information on the topic and why his contribution is considered to be so significant – I found it especially difficult to draw a final conclusion as there were many viewpoints regarding this issue.

4. Results

Luca Bartolomeo de Pacioli (who can be seen on a portrait of his – Figure 1) was born in 1447, in the Republic of Florence in a small town called San Sepolcro. He was a true Renaissance personality and humanist: a mathematician, an accountant, a typographer, a calligrapher, a linguist and a chess master, just to mention a few of his field of interest. He was also a school and university lecturer. He held lectures at the University of Perugia, University of Florence, University of Bologna and at the University of Rome as well, the latter of which was a result of the invitation of Pope Leo X himself. He was also really well-connected, as he knew the most influential people of his age in Italy, and he was adviser to princes and popes.

Pacioli was a student of another famous renaissance personality, Piero della Francesca, and he later became a close friend and instructor of Leonardo da Vinci. Pacioli was also a Franciscan monk who lived by the creed “pax et bonum”. As a Franciscan monk he was also a pilgrim: he visited at least 10 major Italian cities taking thousands of kilometers, mostly on foot. Luca Pacioli was also author of at least 10 books, the two most famous of which are *Summa de arithmetica* (Venice, 1494) and *De divina proportione* (Venice, 1508). He lived quite a long life compared to the average lifespan of his time, as he died at the age of 70 in 1517, in his hometown San Sepolcro. (Ciocci, 2017)

Figure 1: A portrait of Luca Pacioli



Source: de' Barbari, 1495

One of Pacioli's most significant and well-known works is *Summa de arithmetica, geometria, proportioni et proportionalita* (in English: *Summary of Arithmetic, Geometry, Proportions and Proportionality*). The work was published in Venice in 1494 which made this book one of the first printed books in human history. Its size was 615 pages which would be 1500 pages in today's measures. It consisted of two volumes, the first of which was about arithmetic, algebra and commerce – including the chapter called *De computis* on double-entry bookkeeping – and the second volume on geometry and trigonometry.

To summarize Summa's significance we could highlight first of all that it collected, captured and conserved the classic achievements of both the Greeks and the Romans that could be gathered by Pacioli. Another significant factor is that it was written in the common language of Italy, which was of course Italian which made it possible for the „average person” to read and understand its content, as Latin, the more common language used for books up until that time, was the language of the higher classes of society.

Summa is one of the most significant writings in the history of the development of economics, mathematics, and the arts and its chapter on double-entry bookkeeping called *De computis* is the ultimate work in the history of accounting. Though there are some arguments on what the target audience of Summa and especially *De computis* was, the most viable answer is that it was mostly merchants and their children. (McCarthy – Sangster – Stoner, 2008)

The *De computis* (unlike the rest of Summa) does not identify any external sources, so there has been a lively debate among researchers about its possible sources. That's why it is debated whether Pacioli actually is the father of accounting at all. The situation is not clear. Some argue that the entire work was written by Pacioli, collecting, recording, systematizing, and further developing his early practice. According to others, the primary source of Summa is the curriculum of contemporary *abbaco* schools which would be roughly equivalent to today's vocational high schools. Pacioli studied at a young age and later taught in such schools, so this is a very likely assumption. Still others claim that the primary source for the chapter is a few-page manuscript of a merchant from Ragusa, Bendetto Cotrugli, written in 1458 (i.e. before Summa) about double-entry bookkeeping. It is possible that Pacioli had read this manuscript and was influenced by it, but it is a much shorter and less complex writing than Pacioli's work so it could not have been its only source.

What can we say about this debate? That probably all of the above all true at the same time, as all of it can be possible at the same time, nothing contradicts that. (Sangster, 2012, Barancsuk, 2016)

Before *De computis* presents „the Venetian way of double-entry bookkeeping” through examples, general and specific descriptions, Pacioli names the 3 main rules for successful businesses. If there's no business, we can't even talk about bookkeeping, so it's understandable that Pacioli starts his work with this aspect.

The three rules are as follows:

- the entrepreneur must have a financial security, which is the basis of trust,
- have a good accountant who keeps up-to-date accounts,
- have order in the internal accounts, the means of which is double-entry bookkeeping.

The basis of the whole enterprise can therefore be described by the proverb of the time: „Where there is no order, there is a mess.”

Of course, De computis also gives a specific description of how to perform day-to-day accounting tasks. When starting a business, an inventory (inventario) must be made which means that the various elements, items of the business must be counted from the smallest to the most valuable (cash, jewelry, other assets). This represents the financial security that was discussed earlier. The transaction then is first recorded in the reminder (memoriale): we outline the most important information, especially the financial value of the transaction, as if we were really just writing in a diary. The transaction in the reminder is then transferred to the journal (giornale) by converting it to debit and credit values.

All items from the journal are then entered in the general ledger (quaderno), in the corresponding general ledger line and general ledger account – debit-type items on the left-hand side of the general ledger and credit-type items on the right-hand side of the general ledger. Each economic transaction always affect both sides of the general ledger (hence the name double-entry bookkeeping) and the two pages always have to be in balance. According to Pacioli no closing is required, it is only recommended and only at the end of the year or when the books are physically full. The closing procedure consists of 4 steps which I would not discuss here. (Pacioli, 1994; Lauwers – Willekens, 1994)

Finally, I would like to describe the broader context of Luca Pacioli's work on double-entry bookkeeping, presenting the development of accounting before *Summa*, highlighting the 15th century influences, what changed and why the "Venetian way of bookkeeping" was recorded by the Franciscan monk for posterity, and also showcasing the main details about how accounting developed after Pacioli.

Bookkeeping is a method that is roughly the same age as civilization itself. Up until the 15th century, the simplest accounting was characterized solely by monetary transactions, which method is called single-entry bookkeeping that focuses on cash and cash flow. During the 15th century, with the development of long-distance trade, the emergence of frequent and high-value transactions (for example huge and high-value ship cargo), the development of banks and banking transactions, and the resulting increase in risks, the need for accurate information gradually and significantly increased. Venice was right in the middle of the „global” trade routes during this century, for Venetian merchant each shipload was counted as a separate business, so it was natural that they wanted to know all the information about this business: who would expect the next shipment, how much tax is to be payed to the next cargo to the warehouse, etc.

The principles Pacioli laid down were essential and up-to-date up until the 19th century. Then during the 19th century two main branches of accounting came to existence, mostly because of the appearance of big corporations and the separation of ownership and management functions: financial accounting which is the field of accounting concerned with the summary, analysis and reporting of financial transactions related to a business to the public, and management accounting which is concerned with the identification, measurement, analysis, and interpretation of accounting information for managers. And of course today there are even more modernized ways of accounting that developed because of global trends in business: globalization, internationalization, digitalization etc. These are indeed new trends, but their roots originate from Luca Pacioli's work, *Summa* and its chapter *De computis*. Although his work was written for people, especially merchants, of his age, his influence can still be felt even today and will be relevant in the future as well, whatever the future holds for the accounting profession. (Lauwers – Willekens, 1994; Barancsuk, 2016; Ciocci, 2017)

5. Discussion and recommendations

Even if Pacioli didn't invent "the Venetian way of accounting", he was the first to write and record a scholarly dissertation on it. Whether he invented double-entry bookkeeping or just recorded it, he developed the roots of the profession, and therefore we can rightly call him the father of accounting". And what is probably the most important conclusion that we can draw from getting to know Pacioli's life and work is that Luca Pacioli is a good example of diligence, human versatility, resourcefulness and precision. He can be a role model for practitioners and students of the accounting profession and every other related professions as well, and all of us can be and should be grateful to him for his legacy.

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The Hungarian bank market structure – An empirical analysis

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Abstract

This paper analyzes the market structure of the Hungarian bank market. In the years of socialism state-owned companies dominated the market, they were financed by the Hungarian National Bank. After the regime change the two-tier banking system has developed, and foreign companies appeared. An interesting question is how close the market is to a state of perfect competition. The Panzar and Rosse method offers different theorems about the value of the sum of elasticities of gross revenue with respect to input price for competitive and monopolistic markets to be able to determine the market structure. In the case of a neoclassical monopolist or collusive oligopolist, the elasticity is nonpositive. It is equal to unity in the case of competitive price-taking insurance in the long-run competitive equilibrium. With a static and a dynamic panel model we estimate the elasticity of total revenues with respect to changes in input prices so that we can determine the market structure based on the Panzar and Rosse methodology. We test the input price elasticity according to the balance sheet data of the top 13 companies between 2003 and 2020. Our models show that the Hungarian bank market was monopolistic competition in long run equilibrium. The market structure of a sector is important for modelling phenomena and new regulations effectively, which is relevant for bank and competition supervision in the protection of customers.

Keywords: Panzar and Rosse model, dynamic panel model, monopolistic competition.

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1. Introduction

Financial markets are usually referred as an example of the perfect competition markets. The banking sector also provides various financial services, borrowing, account management etc. So, it can be interesting to determine the market structure of a bank sector to see the level of efficiency. There are many alternative methods available for solving these problems, different concentration indicators, structural and non-structural models. The Panzar and Rosse method is most often used in the bank sector and gives a testable hypothesis about factor price elasticity. This research addresses the question about the market structure of the Hungarian bank sector. The objective of the study is to determine whether the monopoly or the perfect competition case fits better for the factor price elasticity calculated by the balance sheet data between 2003 and 2020.

The history of Hungarian banks and saving banks dates back a long time. The first savings bank was founded in 1839. The first merchant bank started in 1840. In the Austro-Hungarian Monarchy there was a huge dependence of the Habsburg Empire. The golden age of the domestic credit institutes was after 1890. In the world wars most buildings were destroyed, and the activity decreased. The Hungarian National Bank was founded between the two wars (Tomka, 2000). In the socialism because of the nationalization, the banking system become one tier until 1987. After the change of regime more private banks were in the country. Joining to the European Union was also a huge step, new regulations were introduced. Nowadays the fusion of the savings banks and the MKB and Budapest Bank is an important change.

With a static and a dynamic panel model we estimate the elasticity of total revenues with respect to changes in input prices so that we can determine the market structure based on the Panzar and Rosse methodology (Panzar & Rosse, 1987). We test the input price elasticity according to the balance sheet data of the top 13 companies between 2003 and 2020. The analysis shows that the structure of the Hungarian bank market differs significantly from the perfect competition case and the monopoly case in these years. During this time period the bank market was in long-run equilibrium, and the market structure was under a monopolistic competition.

The rest of the paper is organized as follows. Section 2 presents the methodology of the Panzar—Rosse model and the results of studies, that used this method. Section 3 present the static and the dynamic panel data approach and the dataset on the Hungarian bank market that we used for the analysis. Section 4 focuses on the results, and finally Section 5 concludes.

2. Theoretical background

The Panzar—Rosse model (Panzar & Rosse, 1987) gives testable hypothesis of profit maximizing companies in different market structures. The testable expression is the sum of the factor price elasticities of the reduced form revenue equation (denoted by H). It allows to distinguish the monopolistic and competitive market structures. The factor price elasticity is unique in the case of competitive price-taking companies in long-run equilibrium ($H=1$). In the neoclassical monopoly model the elasticity is nonpositive ($H \leq 0$). In this model monopoly market means, that the decision of a company does not depend on the rivals' decisions. For a monopolistic competitor the factor price elasticity is between 0 and 1 ($0 < H < 1$). To test the assumption of the long run equilibrium empirically, return on assets (ROA) can be estimated with the same independent variables used in the estimation of the factor price elasticity. In long-run competitive equilibrium, the sum of the factor price elasticities is zero ($H=0$), because the return rates are not correlated with input prices.

The Panzar and Rosse method is often used in the bank sector in different time periods and different countries. Table 1 summarizes the results of these research. Most cases seem to support the monopolistic competition. Canada in 1982 is an example for perfect competition, and Japan is the case of monopoly, here the companies have large market power. Most of the papers use static panel estimation but the dynamic panel analyses could be a good approach also.

Table 1: Summary of Panzar and Rosse models

Authors	Country	Time period	Conclusion
Shaffer (1983)	New York	1979	Monopolistic Competition
Nathan & Neave (1989)	Canada	1982-84	1982: Perfect Competition 1983: Monopolistic Competition 1984: Monopolistic Competition
Molyneux et al. (1994)	France Germany Italy Spain UK	1986-89	Mon. Comp. Mon. Comp. Monopoly Mon. Comp. Mon. Comp.
Vesala (1995)	Finland	1985-92	Mon. Comp.
Molyneux et al. (1996)	Japan	1986-88	Monopoly
Coccorese (1998)	Italy	1988-1996	Monopolistic Competition
de Bandt & Davis (2000)	France, Germany, Italy	1992-1996	Mon. Comp. Monopoly: small banks in France, Germany
Matousek et al. (2016)	Vietnam	1999-2009	Monopolistic Competition
Drakos & Konstantinou (2005)	Post Socialism countries Hungary	1992-2000	Monopolistic Competition
Weill (2013)	EU countries Hungary	2002-2010	Monopolistic Competition
Andrade (2017)	EU	2004-2011	Monopolistic Competition

Source: own collection

Some paper contains information about Hungary between 1992-2000 and 2002-2010. These models use the fixed effect panel model. According to these articles the Hungarian market was in long run monopolistic competition. We get similar results between 2003 and 2020 with static panel data estimation.

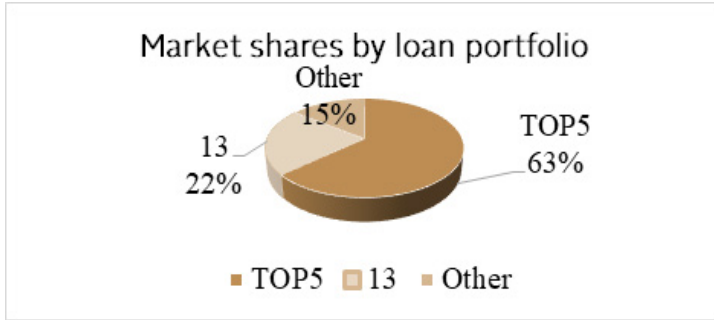
3. Methods

We decided to use static and dynamic panel estimation, as we saw these two approaches are the most commonly used model types in the literature. The static approach means that the model specification does not contain autoregressive, lagged variables. We estimated pooled OLS, fixed effects and random effects model. According to the joint significance of differing group means test, the pooled OLS estimation is not adequate compare to fixed effects model. According to the Hausman test, the Random effects estimation is not consistent, so we also decide in favour of fixed effects model in case of our dataset. The fixed effects model could treat the problem of unobserved effect (endogeneity) by a time-demeaned/within transformation. (Wooldridge, 2012).

The dynamic approach uses the autoregressive specification of dependent variable as explanatory variable. When the lagged value of the dependent variable correlates with the error term, the fixed effects model is not appropriate to solve the problem of endogeneity, the parameters could be biased in that situation. Arellano and Bond (1991) used Generalized Method of Moments (GMM) estimation, in which they use first differences to eliminate individual effect. They solve the endogeneity problem by using all the lagged values of dependent variables as instruments. The method is also called one-step GMM panel estimation.

In our analysis we concentrated on corporations except the mortgage banks, savings banks, and banks that are focused only on corporations. The pie diagram on Figure 1 shows the market share of the loan portfolio. The 5 biggest banks have the 63% of the whole market. In our data analysis we used the data of 13 banks, they cover the 85% of the market. The rest contains different savings banks, new banks that do not have any data from 2003. The current fusion of the savings banks would have made the data collection much more difficult, so because of their relative low market share we simply disregarded them.

Figure 1: Market share



Source: own calculation

We estimated the factor price elasticity according to the data of 13 banks between 2003 and 2020. We build a balanced panel dataset with 13 cross-section observations and 17 time periods. As a source the balance sheet data, financial reports and annual report were used. With the level of collected values (Total Assets, Cash, Loans, Total deposits, Borrowings, Equity, Operating expenses, Net profit, Interest income, Interest expense, Personal expenses, General and administrative expenses, Number of employees, Number of branches) we defined the dependent variable as the interest income, the factor prices (unit price of labour, unit price of business services and unit price of capital) and further control variables (number of branches to total number of branches, loans to total assets, ratio of interbank deposit to total deposit, equity to total assets, and cash to total assets). In the final estimated equation after model selection, we used the factor prices and the interbank deposit and the liquidity ratios.

4. Results

Table 2 contains the results. We estimated the factor price elasticity with a fixed effect and a dynamic GMM model. The dependent variable is the interest income. Taking the logarithm of the variables, the factor price elasticity is the sum of the estimated coefficients of the factor prices. In the dynamic model the lagged value of the interest income is in the model as an independent variable. According to the AR(1) and AR(2) tests the first lag is sufficient. The Sargan over-identification test shows that over-identification can occur in the model because of the large number of instruments, so the results should be treated with reservations.

To test the market structure, we have to test 2 parameter restrictions about it. These are simple linear parameter restrictions, so we could implement an F test and Chi-square test for the sum of coefficients. In the case of monopoly, the elasticity is nonpositive ($H \leq 0$). In this case that means that the revenue function does not depend on the decision of the rivals. It means that, we reject the null hypothesis in the case of the fixed effect model and we can accept it in the case of the dynamic model. In the long run competitive equilibrium, the elasticity is unique ($H=1$). It means that we reject the null hypothesis, so there is no perfect competition. The result of the two tests shows that the insurance market is a monopolistic competition.

Table 2: Estimation of the factor price elasticity with fixed effect and GMM model

Variables	Fixed effect model Y=Interest Income					GMM Model Y=Interest Income				
	Coef- fi- cient	Std. Error	T-ra- tio	P-val- ue		Coef- fi- cient	Std. Error	Z	P-val- ue	
const	9.06	0.44	20.55	0.00	***	-				
l_PL	0.79	0.08	9.87	0.00	***	0.18	0.19	0.94	0.35	
l_PK	-0.16	0.06	-2.84	0.00	***	-0.17	0.06	-2.67	0.01	***
l_PF	-0.08	0.06	-1.52	0.13		0.05	0.02	2.31	0.02	**
inter- bankde- posit	-0.38	0.22	-1.73	0.09	*	0.142	0.23	0.6	0.55	
likvi	1.19	0.46	2.60	0.01	***	-0.07	0.37	-0.2	0.85	
ratio of br	-	-	-	-	-	-14.41	11.75	-1.23	0.22	
loans	-	-	-	-	-	0.23	0.13	1.79	0.07	*
y(-1)	-	-	-	-	-	0.78	0.06	12.62	0.00	***
						Test for AR(1) errors: z = -2.71 [0.0068] Test for AR(2) errors: z = -1.42 [0.1552] Sargan over-identification test: Chi- square(129) = 226.84 [0.0000]				

Test	Hy-po-thesis	F	P-value	De-ci-sion		Test	Hy-po-thesis	X	P-val-ue	De-ci-sion
Test of monopoly	H=0	25.82	0	Reject		Test of monopoly	H=0	0.12	0.72	Accept
Test of perfect competition	H=1	18.19	0	Reject		Test of perfect competition	H=1	30.25	0	Reject

Source: own calculation

This is true if the market is in long run equilibrium. To test this assumption, we estimated the similar equation, but the dependent variable is the return on equity (ROA). In equilibrium the dependent variable should not be correlated with input prices. So we need to test the same hypothesis, we can accept that the input price elasticity is zero, the market is in long run equilibrium.

Table 3: Testing the long run equilibrium with fixed effect and GMM model

Variables	Fixed effect model Y=ROA					GMM Model Y=ROA				
	Coef-fi-cient	Std. Error	T-ratio	P-value		Coef-fi-cient	Std. Error	Z	P-value	
const	-9.87	0.95	-10.40	0.00	***	-	-	-	-	-
l_PL	-0.45	0.14	-3.11	0.00	***	-0.1	0.07	-1.54	0.12	
l_PK	0.51	0.11	4.73	0.00	***	0.27	0.12	2.3	0.02	**
l_PF	-0.11	0.10	-1.03	0.30		-0.02	0.05	-0.41	0.68	
ratio_of_br	92.13	34.49	2.67	0.01	***	32.08	20.47	1.56	0.12	
loans	3.95	0.60	6.59	0.00	***	2.05	0.54	3.79	0.00	***
interbank-deposit~	1.60	0.54	2.98	0.00	***	0.14	0.56	0.26	0.8	
equity	1.96	1.06	1.85	0.07	*	-	-	-	-	-
likvi	-2.31	0.86	-2.71	0.01	***	-0.9	1.44	-0.63	0.53	
ROA(-1)	-	-	-	-	-	0.61	0.09	6.58	0.00	***
						Test for AR(1) errors: z = -1.7 [0.0896] Test for AR(2) errors: z = -0.58[0.5630] Sargan over-identification test: Chi-square(129) = 228.29 [0.0000]				

Test	Hypo-the-sis	F	P-value	De-ci-sion		Test	Hypo-the-sis	X	P-value	Deci-sion
Test of long run equilibrium	H=0	0.05	0.83	Accept		Test of long run equilibrium	H=0	1.18	0.27	Accept

Source: own calculation

5. Discussion and recommendations

We examined the market structure of the Hungarian bank sector with the help of empirical analysis between 2003 and 2020. We estimated input price elasticity by using a static and a dynamic panel model. Based on the Panzar and Rosse methodology we tested the hypothesis of the monopoly and the perfect competition market, we rejected the hypothesis of the perfect competition. The Hungarian bank sector is a monopolistic competition market in long run equilibrium. Similar to the results of previous research in the area. Understanding of the market structure is important for the regulator and the consumers' protection. Systematically Important Financial Institutions have large risk factors in financial markets. This research contributes to the field of understanding these markets in more detail.

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Gábor Varga

Diversity in the application of auditing standards and the possible reasons behind that...

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Reviewer: Prof. Dr. János Lukács

Abstract

Previously I've reviewed how audit work diverges when there's no direct instruction in the International Standards on Auditing (ISA) or in the HAS (Hungarian Auditing Standards) manuals related to certain steps in the auditing processes. But related to the ISA and HAS and in general to Standards is worth reviewing if we can spot any specialty in the application of these Standards that can be linked with any specific characteristic such as gender, age, previous work experience or the size of the firm where he/she performs his/her activity. In some articles authors tried to review if based on the company's size the auditors use more IT tools or IT related techniques, but I would like to examine if we can find any general motives based on demographic or other mentioned criteria's the reason why it diverges from the commonly accepted way of using the Standards, not just in case of IT-related questions. Currently I have an ongoing research on the application of these standards among the active auditors registered in the Hungarian Chamber of Auditors. It's an online questionnaire that can be filled by the auditor in his/her personal account. The questionnaire consists of 26 question covering demographic, work experience questions and questions related to the adherence, application and opinion on auditing standards generally and in case of given processes of the audit work. I'll present some preliminary results. Usually there are many pros and cons related to Standardization. The pros used to be that the work performed can be compared to others based on the standardized steps. One of the cons from smaller companies or auditors working alone is that the prescription of the standards results in a mayor workload that is impossible to carry out (mostly in the documentation phase). Another opinion is that the standards sometimes do not differentiate sufficiently in the necessary documentation steps if we are talking about auditing a big banking institution or a smaller or medium sized enterprise's assessment. So basically, these are the questions what I would like to review during my short study.

Keywords: Auditing Standards, Hungarian auditors, audit work.

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1. Introduction

During my previous investigations I've revised how audit work can diverge from the international and national auditing standards (ISA and HAS), when there's no direct instruction to a given step in the auditing process or for a certain task. But related to these Standards (ISA and HAS) and in general to Standards it can be of value-added to see if there are any specific characteristic such as gender, age, previous work experience or the size of the firm where he/she performs his/her activity and it can be linked with the application of these Standards.

My hypothesis is that depending on the demographic characteristics of the auditor or the size of the audit firm where he or she is employed (or it could also be an individual auditor), the methods used and the depth of the investigations will vary, despite there are Auditing Standards to apply. The deviation from the Standards can take different forms and can be of certain extent. So this time I'll focus on the possible reasons behind that discrepancy. Best practices can overcome the discrepancy between standards and daily practice in audit work, however a bad practice can also cause discrepancies between the standards. To research this question can be useful for the auditing profession in many ways. By knowing the underlying reasons more targeted solutions can be elaborated for the solution of different problems which can also have an effect on audit quality.

Naturally, we cannot forget the accounting standards that are agreed on principles and procedures that define the foundations of financial accounting policies and practices. This way, all involved parties are using and applying it, then the information based on these standards are accurate and relevant to all involved parties. But these standards should be applied in whole during all the processes. This way, financial transparency is also improved. In the U.S., the most widely accepted Standard is the generally accepted accounting principles (GAAP). It's an independent nonprofit organization, the Financial Accounting Standards Board (FASB) is responsible for establishing and interpreting generally accepted accounting principles in the U.S. while Internationally the most widely used Standards are the International Financial Reporting Standards (IFRS), which are set by the International Accounting Standards Board. The usefulness of these accounting standards can be measured in the trans-

parency, easily recognizable events, right measurements and proper display of the events. This way all the involved parties understand the same of the information and comparability is also ensured over time and over countries. In case of the International Standards on Auditing (ISA) are those professional standards that are used for the auditing of financial information. The International Federation of Accountants (IFAC) issues these standards through the International Auditing and Assurance Standards Board (IAASB). The standards cover mainly all areas of auditing, such as responsibilities, audit planning, internal control system, collection of audit evidence, using the work of other experts, audit conclusions and audit reports, and standards for specialized areas or tasks. These set of principles are what auditors follow when reviewing a company's financial records. It helps to ensure the accuracy, consistency, and verifiability of an auditors' actions and reports. We should also mention the Code of Ethics and the INTOSAI, which is the International Organization of Supreme Audit Institutions what is an intergovernmental organization whose members are supreme audit institutions. Nearly every supreme audit institution in the world is a member of INTOSAI.

After this brief introduction of the different standards, we should revise what kind of deviations we can find in the application of the Standards. One could be if there is no direct instruction in the Standards, other can be that if the auditor works alone and not in a group the extent of carried out work could be smaller or lower naturally respecting the minimum requirements. Another obvious difference can be between a big audit company and an individual auditor in the usage of IT tools. A big company can afford a tailor-made audit software meanwhile, a particular auditor can only afford an off the shelf audit software. Beside the IT differences, a bigger company has more elaborated internal procedures and rules involving a large group of persons (audit assistants, audit managers, audit partners, etc.) in the processes meanwhile a particular auditor does not need that kind of detailed regulations, however he/she also needs internal regulations related to basic work process for quality assurance reasons. In the audit evidence gathering there can be also differences due to cultural aspects as well: e.g. in some countries or cultures only the written and signed documents can be accepted as audit evidence and verbal communication or verbally agreed things cannot be accepted. Best practices can also signify a deviation from the Standards based on professional experience, or based on centrally elaborated procedures in a given topic. Some say

that women are more precise and have a less risk-taking attitude. It would be interesting to see are there any gender differences in the audit processes between men and women, e.g. in the planning or in the sample taking phases. So we can see that there can be several motives for that but my aim is to find some characteristics for divergence.

2. Theoretical background

As we have seen before, there can be a lot of possible reasons so during the literature review, I want to show a wide range of articles dealing with the topic. Bame-Aldred et al. 2013 deal with the usage of the internal audit report (function) in the case of the external audit. This study is useful because it synthesizes the literature on EAs' reliance on the IAF and also focuses on four factors that influence EA's reliance decisions like e.g.: "... (...) ... (2) specific IAF factors (e.g., competence and objectivity); ... and (4) the observable effects of EAs' reliance decisions (i.e., the impact on external audit quality indicators)." (p. 252). The results of this study are valuable because the proper measuring of the specific IAF factors by the auditors can depend on e.g. work experience. Other interesting topic in the study is related to audit fees. "The assumption of many of the studies that investigate audit fees and IAF reliance is that audit fees proxy for EA effort." (p. 277). If we use another approach but sticking to this idea, we could say that depending on the type of employer background the auditor performs his/her work depending on the audit fee. Obviously, in most cases a private auditors' audit fee will be lower than a Big four companies'. So the statement is also true because audit fee has correlation with the size of the audit company and also with the audited company. But this topic is rather sensitive throughout the whole auditor society. Some studies compare the audit fees and the audit quality. However I would not like to deal directly with audit quality but we cannot leave aside the fact that it has a relation with my research topic. Pike et al. 2016402-403 article deals with similar issues but from a slightly different angle, because reviews the involvement of the external auditor (EA) in the work plan of the internal audit function (IAF) and the new perspective is how a negative audit discovery affects external auditors' reliance decisions. This topic is also quite linked with my investigation because previous negative auditing experiences can influence the working method of an auditor and it also has to see with audit experience. Based on their results it's worth introducing some questions in the interviews related to their previ-

ous negative auditing experiences because the study showed that “a significant difference in the auditors’ reliance on the IAF and their intention to modify their work based on involvement in the IAF’s work plan.” (p. 167). Their results show that, following a negative audit discovery, there is a positive and significant (path coefficient $\frac{1}{4}$ 0.41) relationship between the external auditors’ Initial Reliance and Subsequent Reliance decisions. (p. 169). So the above-mentioned questions are worth including them in the interviews. A limitation of the study is that it’s not dealing with the different type of internal audit functions. Regarding the (Argento et al. 2018) article which deals with the same topic but in this case in the study involves Swedish auditors belonging to Big 4 companies and also particular ones. The authors used semi-structured interviews for investigating EAs’ opinions, perceptions, feelings, and experiences in connection with sensitive topics such as audit quality. Based on the article in some cases metacommunication also worth to be researched. And what’s worth to mention is that they made a quantitative research in this topic but with a very low response rate. The authors consider for “Future research may consider audit firms other than the Big 4, or a comparison between the Big 4 and the other audit firms, in order to investigate whether there is a difference in the risk propensity concerning the audit quality.” (p. 319) So namely they are also suggesting that e.g. employment characteristics can have impact on the decisions made. The interesting point is the low response rate that I’ve also encountered during my research. The article of Emily E. Griffith, Jacqueline S. Hammersley, Kathryn Kadous 2015. is mainly linked with the ISA no. 520 Standard about analytical procedures. This topic is very interesting and demanding in the audit work. This article has three purposes for a better understanding of key decisions that auditors make and they face with respect to estimates. In the article, they also provide useful information on how they’ve conducted the interviews and how they’ve decoded it, and also the overview of the auditing methods used in practice and the problems encountered. In the study they conclude that: “Our findings indicate that the problems auditors experience with auditing estimates arise from two root causes: (i) audit firms and standards tacitly approve a verification process for auditing estimates, and (ii) audit firms divide knowledge between auditors and specialists such that auditors tend to lack the knowledge they need to be effective at auditing estimates.” (p. 859) So this way the article makes a distinction between the bigger audit firms and the smaller ones. There’s a common perception that a bigger audit companies offer more security in detecting frauds and their

opinions are more appropriate than those who work for smaller audit companies or even alone. Leaving apart the obvious workload of auditing a bigger company based on the Standards and the needed professional skepticism in theory there shouldn't be any different result having the same circumstances for the different auditors on a same company. So the article of Dimitrijevic, Jovkovic, and Milutinovic 2021, is dealing with a very important question for the audit profession namely the scope and limitations of an external auditor in detecting frauds. If there's no fraud discovered then there are no worries for the auditor, but if a fraud is revealed many question arises regarding the work of the auditor, such as: did the auditor executed his work in line with the regulations and standards, was the work performed correctly with the needed skepticism, was everything made to discover all kind of fraudulent events, if it was unavoidable, and so on... The importance of this study is that it deals with a neighboring country and other countries from the Balkan. The authors also reviewed the different kind of balance sheet items that can be manipulated, such as an unreasonable overestimation, underestimation or manipulation of various balance sheet items (income, expense, assets, liabilities, receivables, cash, inventories and cash flows). The study also talks about what are the used methods to avoid and to discover manipulation. But this will remain a constant problem for the audit profession in the process of detecting manipulations as the auditor is not being able to thoroughly examine the entire company's operations but doing it on a sample basis. There's also another study that (Oana Raluca Ivan 2009.) that deals also with a neighboring country.

Audit standards define the process rather than the outcome, while accounting standards define more the outcome, so there's a contradiction or gap between that. If we consider auditing as an economic service than the client also participates that have an effect both on the work and on the quality and this also should be considered. As discussed in the two articles of W. Robert Knechel a, Edward Thomas b, and , Matthew Driskill c 2020. and W. Robert Knechel 2013.) and providing interesting insights. Marsha Puro 1984. long ago already wrote about the lobbying activity of the bigger firms related to the Standards. Also globalization and Standardization can be interesting related to this topic Winton Higgins and Kristina Tamm Hallström 2007. Or it can be also of interest how the SOX changed audit quality compared to the size of the audit firm Matthew Hoag, Mark Myring, and Joe Schroeder 2016., but I treat audit quality bit differently this time. The (Heliodoro and Lopes 2016.) article is also

about an important question which is related with the auditor change and if this has something to do with the qualified audit report in Portugal and they reviewed the period between 2006 to 2012. They've concluded that: "...when a change in auditor occurs, it is clear the first group of hypotheses (from H1 to H4) associated with the existence of qualified reports has a significant influence on such a change." and "it is evident that the greater the value of the asset and the value of the business of the audited company, the greater the pressure on the auditor who concludes that the size of the company affects the change in auditor (H6)." (p. 10.) So not only the qualified audit report can lead to a change also: "It has also been ascertained that the greater the growth in turnover the greater the pressure on the auditor who concludes that the growth of the company influences the change in auditor (H7). (p. 10). I think this is a valuable study done in an EU country about a difficult topic which can also have an effect on the background of the auditor. Basically these are those topics that can be linked with my research.

3. Methods

To get the best result, a mixed method should be used, both quantitative and qualitative methods. Firstly with the quantitative method, we can determine those points of interest that can be later the focus points to examine more in-depth with the qualitative methods like interviews. But based on professional experience and exchange of views with other auditors we can also spot some discrepancies in the application of auditing standards.

Currently, I have an ongoing research on the application of these standards among the active auditors registered in the Hungarian Chamber of Auditors. It is an online questionnaire that can be filled by the auditor in his/her personal account. This means a small effort to the auditor because it can only access his/her personal account through the Ügyfélkapu. The questionnaire consists of 26 questions covering demographic, work experience questions and questions related to the adherence, application and opinion on auditing standards generally and in case of given processes of the audit work. The questions measure the attitude towards the standards on Likert scales. The answering rate was around 8% which could seem very low but compared to the average answering rate of auditors in these kinds of questionnaires' is a quite good result. But we could see also in the case of the Swedish research that they

have encountered a lower response rate. It would be interesting to see what could be the possible reasons of the lower response rates even in two different countries. Actually, the elaboration of the database is in progress.

Regarding the second phase, a representative sample has to be chosen adequately covering the whole auditor population. The interviews should not be longer than 90 minutes, and during the coding process, clarifications should be made if necessary. This way, an in-depth picture can be set on the Hungarian auditor community, their attitude towards auditing standards, and generally how they perform their work based on the standards.

Previously I made a small quantitative research related to the auditors. I gathered the data from the different department web pages of the Hungarian Chamber of Auditors. (www.mkvk.hu). Some simple tests such as the followings: the contingency table in cross-table analysis; the p-value that belongs to the „Pearson chi-square” value in cross-table analysis; an output about one of the measures of association in cross-table analysis; the two-dimensional plot in correspondence analysis was made.

4. Results

Before talking about the results its worth having a look at some facts and some characteristics of the Hungarian Auditing Profession that should be mentioned: Around half of the members are active, and the other part is intermitting its activity. More than half of the active members of the Chamber of Hungarian Auditors being registered in the Capital and Pest County. This fact is also true for the audit firms. The average age of the Auditors is over fifty years. There are more female auditors than males (circa 2/3 female and 1/3 male).

Regarding the previously done quantitative research, a weak correlation was found between the variables. Adding more detailed records to the database such as age categories or similar type of data would enhance the dataset significantly and would make the given results more plausible. So we can conclude that some weak correlation exists between the gender, the department and the place of residence of the auditors. However, we should never forget that in the audit profession, women are overrepresented. This also gives a base to study the usage and adaptation of the auditing standards among the auditors.

By reviewing the different standards and their application we can make some basic assumptions like for obvious reasons, we can differentiate the auditors between International bigger companies and between smaller firms or individual auditors. This basic differentiation helps to highlight the obvious differences between the auditors, such as: workload (individual workload for the auditor is higher but the overall workload of an average audit is smaller due to company size...); Audit team size (number of assistants); Number of clients; Average client size (market share, etc.).

If we take a look at some specific ISA standards like the **no. 505** which deals with External Reinforcements. For bigger audit firms it's easier to deal with the workload or even they can get easier external reinforcements from Authorities or from other Parties than an individual auditor or a smaller audit firm. This can be because of having more respect or it could have other possible reasons. In case of the ISA **no. 610**, "Use of the Work of Internal Auditors," deals in relatively detail with the areas and extent to which the work of the internal audit function can be used, usage of the internal audit report, and the extent to which direct assistance can be used of the auditors for internal assistance. But it's also obvious that a smaller audit firm cannot review so in-depth or in totally compared to a bigger firm with more audit assistants. In the case of International Standard on Auditing **no. 520**, which discusses analytical procedures, we can state again that the bigger audit firms have more resources to deal with the question. It also can be true for the IT tools as bigger audit firms can afford tailor made IT tools which can be far more effective than the off the shelf ones that a particular auditor can buy. Also the available in-house expertise gives an advantage for the bigger audit firms. Moreover, when we resume our findings, we should have some key elements or key considerations not to forget about, so beside the obvious differences there are far more discrepancies that should be studied to get a more in-depth knowledge of the auditing profession and the standards to really improve audit work and as a side effect the audit quality. In the case of the chosen standards should be elected based on usage frequency, reflecting their controversial status, and taking into account the actual needs of the profession which can vary from country to country. The findings of the actual quality control review should be taken into account which can also vary by country. But in any case the data gathering process should be transparent and well documented. Some of the topics are quite sensitive related to audit fee and audit quality and it also differs from country to

country. e.g. in emerging markets or developing countries some topics can be more easily addressed or discussed. This way I think that the enhancement of the audit quality should be a consequence of enhancing the awareness and consciousness in the audit work and application of the standards, not a direct aim. By considering it as a direct aim it can mislead the process of adequately understanding the underlying causes as we declare the quality as something that has to be enhanced, without knowing the causes. In the near future sustainability will become a more important issue that will have also an effect on auditing, this way the auditing profession should already elaborate different practices for their members to be able to deal with the issues to solve. Maybe the auditors will have to give their opinion on some sustainability issues of the companies. There can be also issues of recognition or respect due to size (both the size of the audit firm and the audited company's). But hopefully this kind of issues do not occur in those countries where the auditor profession is well established and recognized. And there can be also issues of perception written vs. oral evidences, which can depend on cultural differences. Sometimes smaller companies or auditors working alone feel that the prescription of the standards results in a mayor workload that is impossible to carry out (mostly in the documentation phase) and other opinion can be that the standards sometimes do not differentiate sufficiently in the necessary documentation steps if we are talking about auditing a big banking institution or a smaller or medium sized enterprise's assessment.

5. Discussion and recommendations

It can also be seen from all of the above mentioned that several standards, e.g. use of the work of internal auditors, financial data provided, use of time series, external confirmations, etc. can be affected in the audit work in the application of the standards and there are also connections between them and there can be many reasons behind a discrepancy in the application of a standard. Those areas are important too in the audit that could cause serious inconsistencies in the audit and in the auditor's opinion. Auditors should feel that the Standards have the same burden for all and to fulfill the requirements a similar effort is needed from every auditor. So this topic can be useful in many ways for the auditing profession. As it can serve for targeted auditors to receive direct advice, training, methodological guidance, elaborate best practices, etc. It can be also useful in the elaboration of targeted learning materials, work-

shops, etc. By researching what aspects of the audit work should be enhanced in the different groups categorized by the demographic factors the solutions can be tailor made. Also the updates or modifications of the Standards can be more effective and can include the actual needs of the auditing profession. Furthermore it can also have an effect on audit quality.

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Dóra Dankó

How transformational leadership contributes to employee well-being? The path through psychological capital

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Reviewer: Dr. Roland Ferenc Szilas

Abstract

Studying leadership from human resource management point of view requires the need to connect leadership theories with employee well-being concepts. A leader or manager has an enormous effect on subordinates' well-being at the workplace. Managers always have to find the balance between performance (how effective the organization is) and morale (how people feel themselves) at the organization. They manage people in order to be able to perform several tasks and achieve previously setted goals. After providing a brief overview about transformational leadership and employee well-being concepts, the idea of psychological capital is discussed in detail. This conceptual paper aims to introduce a quite new concept in organization studies: positive psychological capital. According to the author of this paper psychological aspects have significant effects in leadership and employee well-being theories. Positive psychology and positive organization studies enhance to build psychological capital at the workplace which is considered to be a huge competitive advantage in the future for organizations. Based on the four main components of psychological capital: hope, optimism, self-efficacy and resilience, possible areas for future qualitative research are identified. Following these recommended areas for future research it will be possible to empirically observe how transformational leadership and employee well-being are connected through psychological capital.

Keywords: transformational leadership, employee well-being, psychological capital

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1. Introduction

We live in an uncertain world where adaptability is a key success factor for individuals and organizations as well. Researchers as well as practitioners: entrepreneurs, managers, employees experience vast changes in economic settings. Organizations should strive to adapt to the changing environment which means that managers need to possess certain skills that help them and the organization to succeed. While taking into consideration the performance and effectiveness of the organization a leader must be aware of how employees feel themselves at the workplace. The well-being of the employees of course have repercussions on the organizational performance. I believe that identifying important psychological resources of a manager who seeks to satisfy their subordinates' physical, mental and social needs will contribute to the literature of management by examining leadership skills from a new aspect.

2. Theoretical background

2.1. Leadership

The initial framework of leadership usually consists of the two opposite concepts: transactional and transformational leadership. (Wofford and Goodwin, 1994) Transactional leadership is about exchanging of needs while transformational leadership is more about the development of intellectually stimulating and inspiring business environment where the employees of the organization can transcend their own self-interest for a higher collective purpose. (Howell and Avolio, 1993) Wofford and Goodwin (1994) argues that a leader can be both transactional and transformational.

In order to find the links between leadership and employee well-being transformational leadership has to be discussed in detail as this concept focuses on the human development.

2.1.1. Transformational leadership

Transformational leadership can inevitably influence the operating environment and the decisions made by leaders. According to Tece (2016) transformational leadership makes the organizations more innovative and adaptable. Bernard Bass (1995) expanded the theory of transformational leadership. According to his theory transformational leadership consists of four behavioral components or dimensions: idealized influence, inspirational motivation, in-

tellectual stimulation, and individualized consideration. (Bass and Bass, 2009) These four components are widely discussed in leadership literature and the understanding of these concepts help us to identify their contribution to employee well-being so they are presented in detail:

1. idealized influence

This is part of the charisma of the leader. Behavioral integrity, fairness and follower empowerment is essential in building trust. (Bass and Riggio, 2006) Trust can be built when the information and actions are harmonized. "When a leader's actions are incongruent with message framing, it may cause followers to experience a degree of cognitive dissonance. The resulting dissonance can potentially leave followers feeling disempowered and unmotivated to help meet organizational goals." (Shadraconis, 2013, p.3.) Through idealized influence leaders can trigger followers off to personally identify with the goals, interests, and values of the leader.

2. inspirational motivation

This is the second part of the charisma a leader can develop and possess. Leaders should not just create and articulate a compelling vision effectively but also commit to them. Through a meaningful and common goal a transformational leader can stimulate and inspire followers to achieve it together. „As individuals assist in the achievement of group goals, the more integrated they become as a part of the group (Schien, 2004). This can act as a psychological contract increasing commitment to the organization and transformational leader." (Shadraconis, 2013, p.4.)

3. intellectual stimulation

Intellectual stimulation increases the employees' efforts at innovation by questioning assumptions, reframing known problems, applying new frameworks and perspectives. In order to achieve this openness without fear of criticism is needed. (McCleskey, 2014) As adaptability is a key success factor for organizations as well as for leaders they should encourage feedback and new approaches to current problems or new arising issues. (Bass and Riggio, 2006)

4. individualized consideration

„Transformational leaders serve as mentors and coaches to followers, provide individualized consideration of follower needs, and encourage two-way communication.” (Bass and Bass 2009, in: Shadronis, 2013, p. 6.). Task delegation and follow-ups are becoming methods of developing followers instead of micromanaging them. Meetings are important parts of this communication process especially when personalized communication can be established. This is likely possible through informal meetings, for example when a leader practices „management by walking around”. (Shadronis, 2013)

Providing learning opportunities in a supportive climate are the keys to accomplish the leader’s difficult task to identify and develop the subordinates’ needs while achieving organizational goals. (McCleskey, 2014)

2.2. Employee well-being

Employee well-being has vast literature in business and management and psychology disciplines as well. Several definitions were formulated during the past decades.

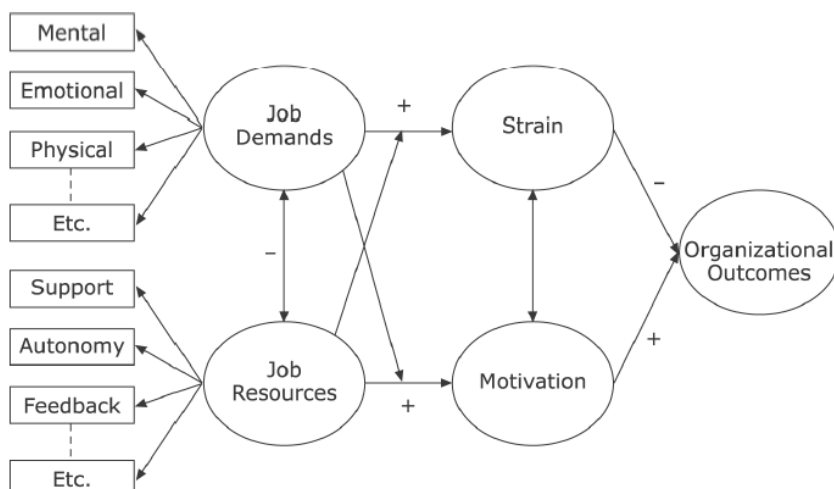
Warr (1987) defined work-related well-being as the overall quality of an employee’s experience and functioning at work. Three types of work-related well-being is identified in the literature: psychological well-being, physical well-being and social well-being. Psychological well-being consists of hedonic and eudaimonic aspects. Hedonic well-being is usually associated with job satisfaction, eudaimonic well-being is the fulfillment of potential and finding meaning and purpose in work. (Grant et al., 2007).

The antecedents of work-related well-being are defined by Warr (1987) as followings: opportunity for control, opportunity for skill use, variety at work, externally generated goals, opportunity for interpersonal contact, environmental clarity, availability of money, physical security and valued social position. These antecedents are presented like vitamins, from some features it is possible to take too much so the employee cannot experience the positive effect on his well-being.

Baker and Demerouti’s (2007) Job demands-resources model is also essential in well-being literature. Workload, emotional demands and work-non-work conflicts have to be analyzed with resources like job autonomy, social support,

development opportunities and feedback. If the demands and resources are not balanced the employee's stress level rises and well-being decreases.

Figure 1: Job demands-resources model



Source: Bakker and Demerouti, 2007 p. 313.

The above presented two models of employee well-being describe several aspects of employee well-being but there are some common things in them: there are components a manager has enormous effect on. The two predominant components that are presented in both models and are relied mostly on manager decisions and leadership styles are the followings:

- how much the employee is supported by the organization/manager in reaching his goals that are aligned with the goals of the organization
- how much control and autonomy an employee has in his work

We can find of course several critics and thoughts about transformational leadership in organizational behavior studies. Szilas (2014) argues that the spiritual dimension of human nature indicates the need for transcendental leadership and if organizations would like to assist in sustainable social, ecological, economic and integral human development then servant leadership is the appropriate leadership style which means that leaders' practices keep self-transcendence (living a truly meaningful life, where happiness can only be found by finding a way to serve others and the community around oneself) as a core value in the organization. "We finally need to do the right things for

the right reasons” (Szilas, 2014, p.35.), and this leadership style promotes this mandate, focusing on individual and societal well-being of the employees.

3. Methods

This conceptual paper aims to summarize a quite new approach to leadership and employee well-being studies. However it has been already known that transformational leadership and employee well-being theories relate in several aspects through their focus on human development, discussing psychological capital as a possible mediating variable in their relation can be considered as a new conceptualization in organization studies. In the next sections the mediating role of psychological capital is discussed, especially how psychological capital as a competitive advantage for organizations serve as a linking construct between leadership and employee well-being.

4. Results

In this section a new and important resource for leadership is discussed that can enhance employee well-being. The manager who seeks to succeed in an uncertain, volatile environment should have a strong charisma, self-confidence and has to be optimistic. Leaders can empower subordinates if they are already empowered and they believe in themselves. To perform well in all these roles very strong self-identity is required. Without enough life and work experience this can hardly be achieved, a good leader need to have strong mental capacities developed throughout the years. Following this idea the psychological capital makes the difference in case of exceptional leaders. Only those leaders can succeed in every aspects who has very good foundations psychologically.

Psychological capital

Organizations have tangible and intangible capitals. Among intangible ones the human capital reflects the knowledge: what the organization/employees know, the social capital is describing the network: who the organization/employees know, and finally psychological capital means: who the employees are and who they can become. (Luthans and Youssef, 2004)

Positive psychological capital is a multidimensional construct that is validly and reliably measured. (Luthans et al., 2007) The four components of it are: hope, self-efficacy, resilience and optimism. The construct is based on positive

psychology. Youssef-Morgan and Luthans (2013) defined positivity as an integrated system of antecedents, processes, practices and outcomes that can be identified and agreed upon by diverse observers and stakeholders as uniquely surpassing standards of adequate functioning and adding sustainable value to both the individual and the context.

So by now three important concepts were presented: transformational leadership, employee well-being and psychological capital. I would like to contribute to the existing knowledge by connecting these constructs in theory and based on this theory viewpoints for empirical research can be formulated for future research projects. These viewpoints can be initial steps for a qualitative research in the topic, for example if a researcher would like to conduct an observation on the field.

Based on theory the transformational leadership style can enhance employees' motivation as well as autonomy in their job, moreover transformative leaders provide enough support to their subordinates that can enable them to cope with the challenges and pursue their own goals. According to the literature the manager or leader has a very difficult task to fulfill all the requirements of transformational leadership and employee well-being. Reading through these conditions we could say it is almost impossible to be a good transformative leader who thinks of employee well-being as a crucial factor in organization effectiveness. In my opinion only one way is possible for the successful achievement of this kind of leadership style. Building on psychological capital at the workplace.

Organizations striving for strong psychological capital have to adapt positive thinking methods. Optimism, hope, self-efficacy and resilience can only be developed in this way. Relying on psychological capital concept, a qualitative researcher should focus on the four components as follows:

Optimism: Based on Seligman's (2002) positive psychology approach optimism is about permanence and pervasiveness. A qualitative researcher on the field should analyze leaders' and managers' interpretations of bad and good events. "Optimists interpret bad events as being only temporary ("I'm exhausted"), while pessimists interpret bad events as being permanent ("I'm all washed up"). The opposite is true for good events, for which the optimist makes a permanent attribution ("I'm talented") and the pessimist a temporary

attribution (“I tried very hard on this one”). Whereas permanence has to do with time, pervasiveness has to do with space. For bad events, optimists make specific attributions (“I had a problem with this computer program”), while pessimists make universal attributions (“I’m just computer illiterate”); again, the opposite is true for good events (an optimist is “a computer whiz,” while a pessimist “does know Excel”).(Luthans et al., 2004, p.47.)

Self-efficacy: Bandura (1994) claims that creating a strong sense of self-efficacy is most effective through mastery experiences. With qualitative research methods a researcher should observe how leaders support their subordinates in self-development, moreover how exactly they pay attention on their own development. How important it is for the leaders to devote time on their own professional and personal development, moreover on their subordinates’ mastery experiences. This might be analyzed through in-depth interviews on the field.

Resilience: We can find vast literature on resilience in organizational behavior and HRM studies. Coutu (2002) claims that resilient people accept reality, have strong beliefs in meaningful life and are able to adapt to significant changes. In a qualitative research the adaptability could be explored by observations that are investigating human reactions to unexpected events (for example communication style of the manager when Covid restrictions came out).

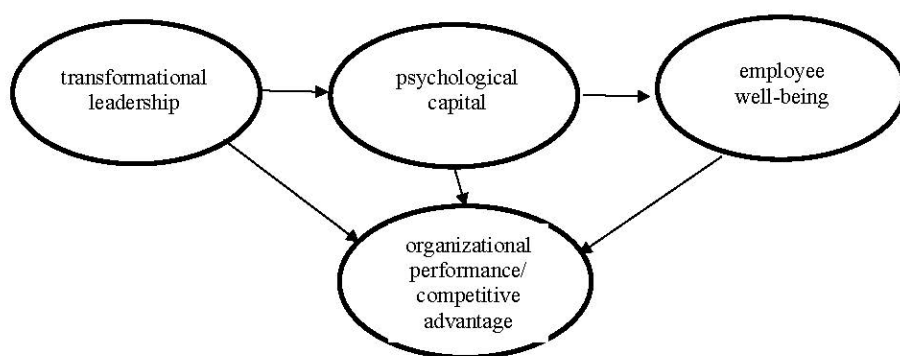
Hope: It is not as theoretically rich and researched than the previous components but studies (Adams et al., 2003 and Peterson and Luthans, 2003) examined its positive impact on workplace performance. Hope is a positive motivational state that is based on an interactively derived sense of successful goal-oriented energy and pathways (planning a strategic plan is presented by the manager. How he/she reflects on the pathway to achieve the goals.

5. Discussion and recommendations

Employee well-being is inevitably depending on leadership styles. The behavior, communication of the leaders, the practices they use, their attitudes towards their employees have serious effects on their subordinates’ well-being. However analyzing feelings, moods, satisfaction, engagement is impossible

ceteris paribus. This means that although wide range of quantitative studies and statistical methods can prove the connection between leadership and well-being, the situation is much more complex as we are investigating characteristics of human behavior. Both employee well-being and leadership styles have common grounds with psychological capital. The behavior of the leaders and the behavior of subordinates of course are explicitly affected by current circumstances but most importantly by how the human being reacts to these external factors. And this reaction is mainly based on the psychological capital of the individual. Strengthening the psychological capital of the individual is efficient not just for him or herself but for the organization as well. According to the latest studies in the topic psychological capital will be the most important competitive advantage an organization can possess and develop in order to succeed in the market long-term. Transformational leadership style can be observed through the analysis of the four components of psychological capital, and if the positive psychological capital can be found in the organization the level of employee well-being increases. This way psychological capital can be considered as a mediating variable between transformational leadership and employee well-being. Figure 2 presents how transformational leadership style contributes to employee well-being through building on psychological capital and that all these factors play important role in organizational performance.

Figure 2 The mediating role of psychological capital



Source: own editing

In this paper I attempted to summarize the essence of these three important concepts: transformational leadership, psychological capital and employee well-being and provide some theoretical grounds for future researches on the field. Leaders and HR practitioners need to deal with this topic not just for creating a workplace that is enjoyable and meaningful to work for but to gain competitive advantage on the market.

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Kitti Dióssy

The impact of leadership styles on digital transformation

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Reviewer: Dr. Márta Aranyossy

Abstract

The digitalization of business processes is one of the main concepts of the latest industrial revolution - Industry 4.0. The results of the changes are already felt in small and medium-sized enterprises (SMEs) in almost all sectors. The adaptation of digital solutions will be essential soon, but currently, this is not the highest priority for smaller companies. The managerial implication could be the key indicator for businesses to embrace the adaptation to the digital changes. Within the companies, it is a question whether the different leadership styles have any influence on the digital transformation. In this research, it was examined whether the task-oriented and relationship-oriented leadership styles have an impact on the digital transformation process of small and medium-sized enterprises (which transformation consists of two pillars: digitalization strategy and digital transformation activities). Therefore, the changes have a beneficial effect on the competitiveness of the businesses. As a result of my primary research, I can say that both task- and relationship-oriented leadership styles have a significantly positive impact on the digital transformation strategy. Moreover, the task-oriented leadership style also has a significantly positive effect on the digital transformation activities in SMEs. Therefore, the digital transformation process rather requires task-oriented leaders, nevertheless, the best option is when these two are combined.

Keywords: Digital transformation process, SMEs, task-oriented, relationship-oriented, leadership styles

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1. Introduction

This paper aims to present how can management styles affect the SMEs digital transformation process effectiveness. The other focus of my research is the importance of the digital transformation process in SMEs. It provides a management overview on how to be a good leader today, who supports innovation and digital changes.

Based on Teece (2016) paper, we can see that today's firms can fall more easily because they are not able to maintain their profitability during a longer period, not like before. Over the last fifty years, technological innovations played a relatively immense role in this. A lot of companies cannot maintain their competitiveness and stay leaders for a long time because new competitors are entering the market. Managers play an important role in the responsibility of making a good foundation to implement competitive skills. The different management roles require diverse actions, characteristics, and capabilities from the managers.

Other than the proper leadership style, an effective digitalization strategy is also required to be competitive. Based on Aranyossy, Blaskovics and Horváth's (2015) research 44% of the IT projects have difficulties and other 24% of them failed.

The article includes three main parts and helps to know the role of leadership in digital business strategizing. In the first one, the literature background is expressed: digital transformation and the different leadership styles' characteristics. In the second part, the research methodology and findings are introduced. In the last one, the conclusion of my research is given.

2. Theoretical background

In this chapter, the literature background of my research is introduced. Starting with the digital transformation process followed by the task- and the relationship-oriented leadership styles' characteristics.

Digital transformation is essential for all companies and industries, depending crucially on systems, IT, strategy, and people (Porfirio, et al. 2021). Ivang (2014)

explains that dynamic interaction-based processes will be necessary for companies which create a digital business strategic framework. However, like any business strategy, digital business strategizing also requires strong leadership to ensure effective strategy formulation and execution (Pfeffer, 1987). Based on Mokhber et al. research from 2018, we know that the organizational leaders (managers) are the change agents who lead digital business transformation by gaining the cooperation, commitment, and involvement of their team when formulating, introducing, and implementing digital business strategies. Fouad's (2019) research indicates that although digital technology for transformation is disruptive, operational performance leaders are prepared to adapt their styles, characteristics, and traits to suit this new digital era and to change their ways of working. Leaders can positively influence, train, move and fail through experimentation while contributing to improved ways of working. However, a proper managerial style is required within the company to fulfil the transformation successfully at all levels (Teece, 2016).

2.1. Digital Transformation Process

“Digital transformation can be comprehended as a continuous process of climbing the scale of digital maturity by employing digital and other technologies along with organizational practices to create a digital culture. Ultimately, this maturity will enable the company to provide better services, gain competitive advantage, profitability, and effectively respond to actions in a complex environment.” (Westerman et al., 2012) Digitalization is a widely accepted key technological strategy and is expected to significantly impact and transform the industry, primarily through significant improvements in the entire value chain. Including management, human resources, logistics, manufacturing, customer service, however, the implementation process remains slow, especially for small and medium-sized enterprises (SMEs) (Kilimis et al., 2019). Technological optimism characterizes the companies in Hungary. In recent years, the impact of information technology development on transforming the economy and business has come to the fore again. Most of the SMEs are positive about the benefits of digitalization. A significant proportion uses some form of an information management system (Chikán et al., 2019). Moreover, according to a German survey conducted in 2017, 90% of respondents considered the digital transformation important for the success of their company's overall business strategy, but in 2015 it was only 80% (Kilimis et al., 2019). A similar process took place from 2013 to 2019. The importance of infor-

matics has increased. The most growing factor is that IT is already a strategic necessity, a condition for maintaining competitiveness. Also, more and more companies think they have cutting-edge IT, which is a significant competitive advantage (Chikán et al., 2019).

After the analysis of the literature, (Danneels, 2016) (Gill and VanBoskirk, 2016) (Heini and Heikki, 2015) (Ivan et al., 2019) (Móricz and Drótos, 2019) (Tavoletti et al., 2021) I set up four pillars for the digital transformation process, fitting the research. i) strategy, ii) organizational structure and resources, iii) corporate culture and iv) technology.

2.2. Task- and Relationship-Oriented Leadership styles

An effective leader is able to influence followers in a desired manner to achieve the company's preferred goals. Different leadership styles may affect organizational effectiveness or performance (Nahavandi, 2002). Not all leadership styles lead to a better organizational future, thus selecting the most appropriate one is a pivotal decision (Gandolfi and Stone, 2018). The question is, which leadership style fits the digital transformation process best?

Managers or leaders in organizations can adopt a leadership style and behave as "Task (Work) Oriented" or "Employee (Relationship) Oriented" (Rüzgar, 2018), which also affects the performance of the employees. (Henkel et al. (2019) Based on the case study of Taberner, et al. (2009) in the case of task-oriented leaders, employees showed higher levels of group efficacy, productivity and positivism within the group. They use short-term planning, personnel efficiency, role and objective clarification, plus brings a higher level of group productivity (Mikkelsen, et al., 2019). Also, top-down communication and specifies of how to carry out the required job function (Taberner, et al., 2009). They are production oriented. They help followers achieve their goals through increased short-term planning, personnel efficiency, role and objective clarification and performance monitoring (Mikkelsen, et al., 2019). On the other hand, relationship-oriented leaders affected greater cohesion between the group's members (Ardi, et al., 2020). They focus on the development of trust, commitment, motivation and cooperation in work teams (Mikkelsen, et al., 2019). They are employee focused and gave social and emotional support for the ones in need and provides special attention. Influence goal accomplishment through empowering, supporting and motivating followers

(Ardi, et al., 2020). Several studies have found contradictory evidence of the effectiveness of task- and relationship-oriented leadership performance and of the combination of those two leadership behaviors. MacKenzie, Podsakoff and Rich (2001) found that relationship-oriented leadership behavior is positively correlated with performance. Hater and Bass (1998) found that relationship-oriented leadership contributes more to predicting the followers' performance than task-oriented leadership does. While Jung and Avolio (2017) found that individual performance increases, and employees contribute to give more ideas under a task-oriented leader. However, collective performance will be greater when they work under a relationship-oriented leader. Rüzgar's study (2018) states that the adopted leadership styles have a great impact on the exchange among leaders and subordinates and learned that there is a statistically significant effect of relationship-oriented leadership style on self-orientation. As the final point, Lovelace et al. (2019), states that there is no single most effective leadership style, leadership rather depends on the context, responds to the organizational needs and preferences, and involves interdependent factors that can be manipulated for improved organizational performance.

My research question is - based on the literature review - whether the different managerial styles affect the digital transformation process in SMEs. Therefore, the two hypotheses that I study: H1: The task-oriented leadership style has a positive impact on the digital transformation. H2: The relationship-oriented leadership style has a positive impact on the digital transformation.

3. Methodology

In this chapter the research model, the methodology of the research, the source of the data and the sample analyzed are presented.

After studying the characteristics of the digital transformation and the importance of the propriate leadership style, continued the research with the help of the research question and the two hypotheses. The subject related to the theoretical background using statistical methods on the data base is empirically examined.

The data used for the analysis is from the Competitiveness Research questionnaire survey of the Corvinus University of Budapest, Business Administration Institute (Chikán et al., 2019). Developed by the Competitiveness Research Center. The survey was conducted between October 2018 and July 2019. The

research focused on manufacturing, construction, commerce, transportation, warehousing, hospitality, information and communication sector.

The survey is SMEs-focused, so the 84% participation rate can be said to be representative in terms of sampling rate in Hungary. Data cleansing was also performed to ensure the reliability of the data, and the final sample included 209 companies. There was a total of 113 manufacturing companies in the database. However, further data cleansing was conducted. Responses for both the 32nd question from the production survey (digital transformational process questions) and the 47th question from the management survey (task- and relationship-oriented leadership styles questions) are deleted in which at least 50% of the responses are missing or are too unanimous. Furthermore, in the case of companies with less than 50% missing data, the missing data are replaced in the data set with an average. The data to be replaced do not exceed ten pieces, which is a negligible amount and thus, does not skew the results. Thus, the present research analyzes 94 manufacturing companies' data.

The research model consists of two main parts: the leadership styles and the digital transformation. The concept is to identify the leadership styles' effect on the transformation. After the data optimization the variables are statistically analyzed, and the pillars are formed from them. The two dependent variables - the digital transformation process - and two independent variables - two leadership styles - are formed in the operationalized model.

The dependent variables are examined by SPSS. Firstly, four main groups based on the literature are formed: digitalization strategy, corporate culture, organization and resources, and technology. Secondly, exploratory principal component analysis is run to reveal the correct number of the factors. Therefore, two main isolated components are formed from the original four factors: the digitalization strategy and the digital transformation process activities.

The independent variable components are also examined by SPSS principal component analysis. The task- and relationship-oriented leadership style groups contain six final variables, four task and two relationship-oriented variables.

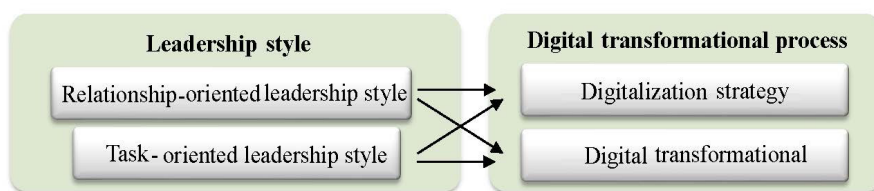
In order to answer the research question, regression analyses is run on the final variables of the operationalized model. The results are going to be expressed in the next chapter.

4. Results

In this chapter, the findings are expressed on whether the different leadership styles have an impact on the digital transformation.

The operationalized research model (see on the 1st table) was set up as a result of the exploratory principal component analyses with final model-reliability of 84%.

Table 1: The operationalized research model



Source: Own compilation, 2022

The 32nd survey questions introduce digital transformational process. The two dependent variables are developed with exploratory principal component analysis from the four original components. The pillars are i) strategy, ii) organizational structure and resources, iii) corporate culture and iv) technology). The model includes nine elements of digitalization in two pillars, which are the digitalization strategy and the digital transformational process activities as seen on the 2nd table with their loadings. 2 variables are excluded from the model because their loading values are too close to others' (differences are less than 0,200). The model-reliability is close to 80%. The significance level converges to zero, thus, the model has a significant meaning.

Table 2: Rotated component matrix of the digital transformation process

			Component	
			1	2
Digital transformation process activities	Corporate Culture	We are willing to take risks compared to our current practice by introducing innovative digital solutions	,890	,306
		In our organization, we have the opportunity to come up with and embrace digitization by bottom-up ideas	,873	,333
	Technology	We are consciously testing new digital technologies to investigate their applicability	,870	,330
	Org. structure and resources	We have allocated adequate financial resources to plan and implement the digital business transformation	,770	,452
	Technology	We track industry-leading digital solutions	,766	,469
	Corp. Culture	We can quickly adjust our digital solutions to meet business challenges	,763	,473
	Org. structure and resources	Our organization has the technological knowledge and skills for the digital transformation	,734	,507
Strategic plan	Digitalization strategy	Corporate management understands the digital challenges and opportunities facing the company	,293	,927
		The leadership of our organization has clearly defined the digital business strategy of the organization	,543	,743

Source: Own compilation, 2022

The two groups of leadership styles - called the independent variables - are also examined. The 47th survey questions refer to the task- and relationship-oriented leadership styles. After the data cleansing and the principal factor analysis, six variables in two pillars are part of the model as seen on the 3rd table with their loadings. 4 variables are excluded from the model because of their individual low loadings (0,500). The model-reliability is close to 80%. The significance level converges to zero, thus, the model has a significant meaning.

Table 3: Rotated component matrix of the different leadership styles

3rd table: **Rotated Component Matrix^a of the different Leadership Styles**

	Component	
	Task-oriented	Relationship-oriented
Basically, the Key Performance Indicators (KPIs) convey the goals to managers and subordinates too.	,812	-,036
The managers' responsibilities are mainly focused on getting their employees to do their job as best they can.	,723	,325
Key Performance Indicators (KPIs) are only part of the management toolkit, it is necessary for both managers and employees to feel the goals as their own.	,707	,203
Because of the great responsibility in the work organization, trust is based on control and follow-up.	,694	,399
The manager clearly sets goals, carefully monitors the implementation, and intervenes if need to.	,122	,890
The manager clearly and convincingly communicates the goals, discusses together what to do and entrusts implementation to the staff who can turn to the manager if they feel the need.	,234	,791

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Source: Own compilation, 2022

After the factor creations, two regression analysis are run with the different dependent- (digital transformation factors) and independent variables (leadership styles) which values can be seen in the 4th table. The model is close to 90% of reliability. Both significance levels converged to zero, 0,000 thus, the regression model has a significant meaning.

Table 4: Regression models on the impact of leadership styles on the digital transformation process

	Constant	Task-oriented leadership style	Relationship-oriented leadership style	R ²	F
Digitalization Strategy	-1,047E ⁻⁰¹⁷	0,384	0,216	0,194	10,974
Digital transformation activities	6,755E ⁻⁰¹⁷	0,425	0,114	0,193	10,914

Source: Own compilation, 2022

Based on the statistical results, there is a significantly positive impact of both the task- and relationship-oriented leadership styles on the digital transformation strategy. Moreover, there is a statistically significantly positive impact of task-oriented leadership styles on digital transformation activities. On the other hand, the relationship-oriented leadership style has a positive, but not significant impact (Sig. 0,231) on digital transformation activities.

To summarize the statistical results, I can accept the two hypotheses because both the task- and relationship-oriented leadership styles have a positive impact on the digital transformation. Moreover, I can also say that the transformation rather requires task-oriented leadership style due to the regression model of the research. Nevertheless, the best option would be to combine these two styles.

5. Discussion and recommendations

The paper is about the connection between the task- and relationship-oriented leadership styles and their impact on the digital transformation process which is exceptional in the field.

The research consists of three parts. I started by introducing the digital transformation process and the leadership styles, which have different impacts on the companies' performance. After presenting the methodology, the results are explained which could confirm my hypotheses.

The research question, whether the leadership styles have an impact on the digital transformation in the small and medium-sized enterprises has strong literature background. The different styles have various advantages and disadvantages in the view of the digital transformation that can affect corporate performance. My results correlate with the literature, as the leadership styles and their combination can significantly positively impact the digital transformation process. Moreover, the digital transformation rather requires task-oriented leaders, however the best is the combination of these two styles.

Like many others, there are limitations of this research too. The number of analyzed companies could have been bigger than 94 and could give more reliable data. The data I used, was administered between 2018-2019, the period before Covid-19. In my opinion, if the data were recorded now or soon, there is a high probability that I would get different results. I would like to verify these assumptions soon. However, these two leadership styles cannot present comprehensive results, therefore, I would like to examine more leadership styles in my upcoming research.

In addition, due to the exponential development of technology, continuous monitoring is warranted. I would like to repeat the research so I can rethink the results with the most current information. I suppose that this research can help managers of companies that are currently thinking of starting the digital transformation or for the ones which are already in the process. Leaders should consider applying both leadership styles to generate greater employee productivity and support for digitalization.

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«Big Brother's effect» in the Political Market

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Abstract

In previous studies it was discovered that human beings not only have a tendency to mimic the leader, but they do it to a greater extent of fidelity if the follower is observed by the leader at the moment of execution of his actions. Among the possible reasons for that there were listed the followings: mechanism to learn new skills, by-product of domain general learning, increase in liking, a way to boost social affiliation, social glue hypothesis, and finally, social-signalling hypothesis of imitation. Surveillance from the side of the leader can reinforce the effect of ethical guidance, if the follower is watched. Just the fact that the leader is «watching you» can deviate the utilities of the followers and significantly affect their behaviour as a consequence. We will test this hypothesis by estimating Ordered Logistic and Ordered Probit regressions with categorical dependent variable, responsible for the share of support group, loyal to the government in cabinet, independent variable (main variable of interest), capturing for the number of CCTV cameras per 1000 people in 45 different cities located in 45 different countries of the world, as well as group of control variables: facial recognition status (dummy variable), electoral democracy index, unemployment rate, world happiness and categorical variable «person of the leader», which reflects personal characteristics of the chief executive.

Keywords: CCTV cameras, mass surveillance, loyalty of voters

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1. Introduction

With the increasing role of spying security agencies, installation of digital cameras with the function of face recognition in public places, including transportation, metro, educational and healthcare institutions, shopping malls «Big Brother's effect» is able to deviate the utilities in mass significantly, and not exceptionally the utilities in the political market. It refers us to anti-utopias, such as «We» by Zamyatin and «1984» by Orwell, where Big Brother with his assistant service, Police of Thoughts watch you everywhere. And if Big Brother finds that a specific individual does not mimic him enough through the channel of ethical guidance, or that selected model of behaviour significantly deviates from the encouraged and commonly accepted one, the response will follow in the form of social sanctions, reputational harms, up to fabricated evidence and conviction, or even murder under the radically authoritarian regimes.

We will focus on the case of political market and voting-decision making. Through the channel of ethical guidance, the voters assign the values of the leader, who concentrates the main executive power, and in turn, it might be that «Big Brother's effect» reinforces its impact. Another possible channel of influence – chilling effects. The «watching eye» stimulates individuals to be cautious while choosing the model of behaviour, as the one should comply with the expectations of the leader and the majority group of society. As a consequence, such a constraint, caused by mass surveillance, according to our expectations, leads to following social norms, conformity and support of the regime in power.

2. Theoretical Framework

Bateson et. al. (2006) described an experiment, which took place in the psychology department of Newcastle University, United Kingdom. They apply a simple honour system for tea and coffee orders: people have to leave money in the box. Once during research experiment the department had modified the sign on the top of the price list. A picture with flowers was replaced by the photocopied picture of human eyes, gazing directly at clients, while they reading the menu. The result was the following: on the weeks with watching eyes, depicted on the top of the menu the staff tended to pay 2,76 more to

enjoy caffeine, than in the case of picture with flowers. The researchers, who conducted this experiment were highly astonished by the magnitude of this effect. It testifies that even when displayed on the photo, watching eyes have a tendency to change people's behaviour.

PEN America (2015) surveyed almost 800 writers all over the world about their attitude towards surveillance. Surprisingly, the difference between democratic and non-democratic nations was not significant. As for the former, 75% of respondents were concerned about mass surveillance, whereas in the latter case 80% of respondents. Over 30% of writers, representing democratic nations claimed that they are self-censored, and more than half of respondents stated that mass surveillance undermined the credibility of the USA as a global defender of free expression.

In the municipality Chongqing, located in the Southwest of China (over 15 million population), the ratio of CCTV cameras to the number of residents is 1 to 5,9, which makes it the most surveilled city on Earth. Wakefield (2021) interviewed Chinese journalist Hu Liu, a resident of Chongqing, who claimed that: «Once you leave home and step into the lift, you are captured by a camera. There are cameras everywhere. When I leave home to go somewhere, I call a taxi, the taxi company uploads the data to the government. I may then go to a cafe to meet few friends and the authorities know my location through the camera in the cafe». Secondly, technologies such as electronic checkpoints and cellular apps are widely applied in the Xinjiang region, the homeland of ethnic minority, Uighur Muslims. Daily surveillance and digital algorithms led to numerous arrests, trials, convictions, escorted by indoctrination in so-called re-education centres. According to UN report, over 1 million people are currently placed there, (Boghosian, 2021). Besides the gaze of CCTV cameras, over one million of trained paramilitary members, belonging to Han Chinese ethnic group, organize military corps with heavy artillery, tanks and armoured vehicles, which forms another dimension of «watching eyes». On the other hand, CCTV cameras detect whether they follow all the instructions properly, because if not, their families might be in danger.

Stoycheff (2016) conducted an experiment regarding the effect of government monitoring on online expression in the situation when real opinion of the respondents gets into conflict with the one of the majority. The post on fake

Facebook page about US airstrikes against ISIS terrorists in Iraq was shown to 225 respondents. It was written in a way that the author didn't take any of the positions. Respondents were asked whether they would be willing to like, comment or share this post, but they were informed that there is no guarantee that NSA would not be monitoring them. The answers happened to be a pure demonstration of the spiral-of-silence effect. Spiral-of-silence effect means that people would avoid discussions on policy issues publicly, whenever they know that their position does not correspond with the widely shared one. As a result of this experiment, the more respondents expected that their position deviated from the mainstream one, the more conformist and self-censored were their answers.

Analysing the impact of surveillance on the loyalty of support group, the first channel of interest – chilling effects. This concept was presented by Schauer (1978). According to him, certain actions of the state can chill or deter individuals from exercising their freedoms or involvement in legal activities. The theory was extended by Solove (2008), whose focus was on government surveillance, related to online activities and specific instruments of the government, such as criminal sanction and legal punishment, which have chilling effects, and therefore deter people from specific engagements on the internet. He finds that surveillance of online activities, specifically, information gathering creates an environment of self-censorship and conformity, because individuals face uncertainty regarding how their personal information will be used in the future. They have concerns about the risks of potential harms, such as stigmatization and labelling by the state as deviant, criminal or non-conformist, as well as victimization by identity fraud. Moreover, individuals have fear that personal information can be leaked by a third-party, including the state, what can put them in an embarrassing situation. e hH

The second channel, crucial for the analysis of surveillance effect on the loyalty of support group – tendency to imitate the leader, or as in our case, specific form of this tendency – the tendency to follow the model of behaviour, expected by the leader or by the regime in general, as well as assigning the values of the leader through the channel of ethical guidance. Krishnan-Barman et al. (2019) conducted an experiment and demonstrated that human beings not only have a tendency to mimic the leader, but they do it to a greater extent of fidelity if the follower is observed by the leader at the moment of execution of

his actions. In the process of the experiment the pairs of adult followers and leaders had to move blocks from one place to another in a specific order. The authors had focused on two main aspects: the height of trajectory, reached by the leader and when the follower performed his turn, whether the eyes of the leader were opened or closed. The maximum heights, accomplished by the leader and follower during both observed and unobserved were used as indicators of the levels of imitation within a pair. Correlation coefficients between them were calculated and subjected to a T-test, in order to verify the significance. As a result, Krishnan-Barman et. al. (2019) came to the conclusion that the participants tended to mimic more significantly in the cases when they had known that they were watched by their leader-partners, in comparison with the situations when the leader could not observe them.

The literature in the field of Psychology and Cognition finds various explanations for that: mechanism to learn new skills, by-product of domain general learning, increase in liking, a way to boost social affiliation, and lastly, social glue hypothesis. We will focus on the last one, as the authors of the experiment, described above. The social glue hypothesis was elaborated by Lakin et. al. (2003) and underlies the core of STORM model, proposed by Wang et. al. (2012). The seminal theory states that it is possible to create affiliations through imitation, and such affiliations emerge as a lucky-side effect of imitation, whereas according to STORM model – the main purpose of imitation performance is a willingness to affiliate. It goes in line with Lakin et. al. (2003), who discovered that being imitated leads to an increase in liking. At the same time according to Kuhn et. al. (2010), the opposite is also true: observing antimimicry (the model of behaviour opposite to an imitation) can elicit conflict-related processing, and therewith lead to a negative effect.

Hamilton (2015) discovered that from a neurocognitive point of view the process of imitation passes two stages: 1) visuomotor stream 2) selection and control. We will omit the former one, because we are interested in a particular form of imitation - the tendency to follow the model of behaviour, expected by the leader or by the regime. In the second stage in order to make optimal decision individuals compare their own views and preferences with bits of information they possess regarding the model of behaviour expected from them. Control mechanism required to select which imitative or non-imitative actions to actually perform. Brass et. al. (2005) found that performing the im-

itation-inhibition task engaged medial prefrontal cortex, a region of the brain previously associated with the theory of mind. Focusing on socio-political life, the complexity of the mechanism of selection and control would depend on the environment: institutional framework, power distance, the personality of the leader and tenure of the regime in power, wellbeing of citizens and satisfaction with the regime in power, and finally, the level of surveillance. If individuals have confidence that they are not watched, they may keep on following their initial models of behaviour, but if they know that they are watched extensively, for example in Chongqing municipality of China, it may be necessary to consider imitation to a lower or greater extent, both due to the positive effects of mimicry and negative effects of antimimicry, fixed in the literature. If individuals are far-sighted enough, they should take into consideration possible long-term effects of imitative or non-imitative behaviour they perform, as stigmatization or labelling by the state as deviant/criminal are long term effects. Because imitation leads to affiliation, or to put it differently, as in the STORM model, affiliation is the main aim of imitation, and imitation leads to an increase in liking, benefits in various forms are also possible.

3. Methods

The question this research will be answering is:

Is there any evidence that mass surveillance has a positive impact on loyalty of voters?

The hypothesis developed after a preliminary review of the literature are the following:

One unit increase in the number of CCTV cameras per 1000 people does not increase the log odds of being in a higher level of regime supports group size, holding all the other variables constant (coefficients of variable “CCTV cameras per 1000 people” in the regressions, provided in Equation 1 and Equation 2 are not positive or not statistically significant at 10% level)

$$H_0: \beta_{11} \leq 0, p > 0,1 \quad H_1: \beta_{11} > 0, p < 0,1$$

The effect of mass surveillance on the loyalty of voters will be estimated by Equation 1 in the case of ordered logistic regression, and by Equation 2 in the case of ordered probit regression:

Equation 1:
$$\log_e \left(\frac{\pi_{i1}}{\pi_{im}} \right) = \beta_{1j}x_{i1} + \beta_{2j}x_{i2} + \beta_{3j}x_{i3} + \beta_{4j}\log(x_{i4}) + \beta_{5j}x_{i5} + \beta_{6jn}x_{i6n}$$

for $j = 1, \dots, m - 1$

Equation 2:

$$\pi_{i1} = \Phi(\beta_{1j}x_{i1} + \beta_{2j}x_{i2} + \beta_{3j}x_{i3} + \beta_{4j}\log(x_{i4}) + \beta_{5j}x_{i5} + \beta_{6j}x_{i6n})$$

for j = 1, ..., m - 1

Where:

$\log_e\left(\frac{\pi_{i1}}{\pi_{im}}\right)$ – log odds of being in a higher level of regime supports groups size

π_{ii} – conditional probability of being in a higher level of regime supports groups size (ordered probit regression)

j – categories of response variable

m – qualitative values, reflecting the categories of the dependent variable

n – categories of variable

$\Phi(x)$ – cumulative distribution function in probit model, which pushes the probabilities to be between 0 and 1

π_{i1} – number of CCTV cameras per 1000 people

π_{i2} – facial recognition status (dummy variable)

π_{i3} – electoral democracy index

π_{i4} – unemployment rate

π_{i5} – world happiness index

π_{i6n} – person of the leader

The choice of Ordered Logit and Ordered Probit models is conditioned by the limited dependent variable (regime support groups size), which reflects loyalty to the government in the cabinet. The variable was extracted from the V-Dem dataset version 10, downloaded from the website of the V-Dem Institute (University of Gothenburg). To be more precise, this variable shows what is the share of domestic adult (18+) population in percent that belongs to the current political regime's supporting groups. It is a categorical variable with five various responses: Large (more than 30%), Moderate (15-30%), Small (5-15%), Very Small (1-5%), Extremely Small (less than 1%), (Coppedge et. al., 2020a).

The main variable of our interest – CCTV cameras per 1000 people. The data on it was shared by Comparitech – website, providing information, tools, reviews and comparisons to help the readers all over the world to improve their cyber security and privacy online. Our sample includes 45 observations: big cities of 45 different countries, from different continents: from Beijing to London, from Moscow to Los Angeles, from Sydney to Buenos Aires. The

countries, included in our sample vary in terms of culture, well-being, type of political regime, personal characteristics of the chief executive – other factors, which expected to have explanatory power in the share of the population, loyal to the government in power. Therefore, we will control for these factors, as well as for the facial recognition status of the cameras.

The presence of facial recognition status significantly affects the degree of being watched. Having facial recognition function in use takes «watching eye» to the next level. Therefore, it is reasonable to control for it. Facial recognition status is a dummy variable, which is equal to 1 if it is in use and 0 otherwise. The data was collected on <https://surfshark.com>.

In order to control for the type of political regime and level of institutional development we will rely on the variable - Electoral democracy index from V-Dem dataset version 10. To be more precise, this index captures the following democratic principles: 1) responsiveness of the rulers to the citizens, guaranteed by the fair electoral competition without frauds and systematic irregularities observed; 2) elections determine the chief executive composition of the country; 3) free operation of the political and civil society groups and organizations; 4) mass media are independent, have the freedom of expressions, and can present alternative views on different issues, including politics. The values are in the range between 0 and 1, (Coppedge et. al., 2020a).

We will control for the unemployment rate as well, as it is a highly important social indicator, which may have some explanatory power for the size and loyalty of the support groups of the regimes, and therefore should not be omitted. We will use the logarithmic form of unemployment rates for the correct specification of the model. The data on unemployment rates was extracted from <https://tradingeconomics.com/>.

Moreover, we will control for well-being of citizens, relying on the World Happiness Index, which focuses on a wide area of dimensions: social, economic, political, as well as security issues, infrastructure, education, health, nutrition and emotions. Alternatively, we could use GDP per capita for this purpose, but in this case, the control would be limited to the effect of economic prosperity only. In contrast, the World Happiness Index is a more versatile indicator, which allows to capture for the effect of well-being as a whole on the share of support group, loyal to the government in power. The variable is scaled from 0 to 10, where 0 reflects the worst possible life and 10 the best possible life. The

data was collected from <https://countryeconomy.com/>.

Finally, we will control for the personality features of key leadership figure (head of the state, head of the government), because according to the reviewed literature, it can enhance the effect of mass surveillance on loyalty of voters. We will rely on the variable «Person of the Leader» from the V-Dem dataset version 10. It reflects leadership skills and personal characteristics of the chief executive: father or mother of the nation, exceptionally heroic, moral, pious, or wise, or any other extraordinary attribute valued by the society, (Coppedge et. al., 2020a). It is a categorical variable with the following responses: not at all, to a small extent, to some extent but it is not the most important component, to large extent but not exclusively, almost exclusively.

4. Results

The results of all the estimated models, including ordered logistic regression, ordered logistic regression with robust standard errors, ordered probit regression and ordered probit regression with robust standard errors are presented in Table 1.

Table 1 The effect of CCTV mass surveillance on the size of regime support group

Variable	Ordered logit	Ordered logit (robust)	Ordered probit	Ordered probit (robust)
CCTV cameras per 1000 people	0.123**	0.123***	0.069**	0.069***
Facial recognition status	-0.646	-0.646	-0.408	-0.408
Electoral democracy index	9.451***	9.451***	5.433***	5.433***
Unemployment rate (log)	-1.428*	-1.428**	-0.747*	-0.747**
World Happiness Index	-1.764**	-1.764*	-0.962**	-0.962**
Person of the leader:				
To small extent	0.669	0.669	0.281	0.281
To some extent but it is not crucial	0.494	0.494	0.332	0.332
To a large extent but not exclusively	-0.965	-0.965	-0.367	-0.367
Almost exclusively	2.790	2.790	1.735*	1.735*
Cut-off values:				
Cut 1	-11.944**	-11.944*	-6.159**	-6.159**
Cut 2	-9.704*	-9.704	-5.045*	-5.045*
Cut 3	-7.680	-7.680	-3.941	-3.941
	Legend: * p < 0.1; ** p < 0.05; *** p < 0.01;			

Source: Own compilation, 2022

The main variable of our interest, the number of CCTV cameras per 1000 people is positive and statistically significant at least at the 5% level (when robust standard errors applied, at 1%) in all the estimated models. Therefore, we can reject hypothesis in favor of alternative hypothesis (). In line with the methods applied, the results demonstrate only the direction of effect, but not the magnitude. The coefficients on the key variable of our interest should be interpreted as follows: for one unit increase in CCTV cameras per 1000 people, we expect 0,123 increase in the log-odds/ 0,069 increase in probit likelihood of being in a higher level of regime support groups size (more than 30% of the adult domestic population are in favour of the regime in power) holding all other variables constant. It testifies to the presence of a «Big Brother's effect» in the political market.

An approximate likelihood-ratio test was conducted for testing parallel regression assumption, necessary for the application of our models. Both in the case of ordered logistic and ordered probit regressions this assumption was not violated (p-values of chi-square values are 0,66 and 0,63 respectively).

5. Discussion and Recommendations

The empirical results show that indeed, CCTV cameras' mass surveillance on average has a positive effect on loyalty to the government in power. It may push citizens to follow the model of behaviour, expected by the regime, or personally by the chief executive, and in turn, reshape the preferences of voters in the political market. The effect comes from the two main channels: chilling effects, discovered by Schauer (1978), as well as a tendency to mimic the leader to a greater extent of fidelity while being watched, as it was demonstrated in the experiment, conducted by Krishnan-Barman et. al. (2019). When we focus on the political market, as in this study, the second channel takes a slightly different form. Individuals rather imitate not the leader himself, but a commonly accepted model of behaviour, expected and encouraged by the regime. In this study we did not intend and did not find it feasible to separate these two effects, but rather analysed them together as components of the total effect of mass surveillance.

The results contribute to the mass surveillance and voting behaviour areas of studies and go in line with its fundamental theoretical literature, such as

Schauer (1978), Solove (2008), literature in the field of Psychology and Cognition, such as Lakin et. al. (2003), Wang et. al. (2012), Hamilton (2015), as well as experiments, conducted by Bateson et. al. (2006), Stoycheff (2016), Krishnan-Barman et. al. (2019), the survey of PEN America (2015).

As we did not demonstrate the magnitude of the effect, we highly encourage future studies to focus on values of interest of specific variables, and by using margins to obtain predicted probabilities, that would facilitate the interpretation of results and make them more precise. Moreover, having the data on CCTV cameras available, it would be reasonable to use it for more detailed analyses of the effect of mass surveillance on political markets of specific regions and countries of the world.

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Krisztofer Szabó

Entrepreneurial Orientation and Family Business: Bibliometric Analysis

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Reviewer: Márta Aranyossy, Ph.D.

Abstract

Despite a large number of studies on family business and entrepreneurial orientation, the understanding of this topic is fragmented, and its full potential has not yet been reached. To shed new light on the link between these topics, this paper first explores the field of family business by conducting a bibliometric analysis on the intersection of entrepreneurial orientation and family firms. This quantitative methodology used as the first step of comprehensive literature review describes previous research, highlights articles published in high-ranked journals, describes research trends, and concludes. Secondly, it identifies the main research directions, authors, and affiliations. At the end following steps of the systematic literature search will be presented.

Keywords: entrepreneurial orientation, family business, bibliometric analysis

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1. Introduction

The concept of entrepreneurial orientation (EO) has long been popular in the social sciences (Porter 1985). In recent decades, it has also received considerable attention from researchers in business and economics, leading to the development of the concept and understanding of EO (Waheeduzzaman & Ryans, 1996; Zellweger & Sieger, 2016). Several studies have been carried out to explore the theory and practice of EO (Covin & Wales, 2012; Criado-Gomis et al., 2018). EO is a characteristic of firms that reflects what it means to be an entrepreneur in an operational or practical sense (Covin & Wales, 2019). Explained in more depth, EO is a multidimensional phenomenon that includes three dimensions: innovativeness, proactivity, and risk-taking (Covin & Slevin, 1989). Innovativeness refers to a firm's willingness and ability to innovate (Miller, 1983). The proactive element of the EO focuses primarily on the willingness and readiness of firms to seek and engage in innovation and the timing of that innovation concerning market conditions (Covin & Wales, 2019). On the other hand, risk-taking refers to the willingness to commit resources to projects whose outcome is unknown (Hernández-Linares & López-Fernández, 2020).

Another focus of my multidisciplinary research is family business (FB), which is of great economic and social importance (Huszák et al., 2021; Westhead et al., 2001; Zellweger, 2017). Most estimates put their share of the world total at between 65-80% (Huszák et al., 2021), while it is ~83% in Hungary (Wiesz & Drótos, 2018). For this reason, it has become a popular topic of academic research, and although there is no uniformly accepted definition (Wiesz et al., 2021), it can be said that family business definitions can be divided into three categories: (1) family participation in both ownership and management; (2) the 'essence' of the family firm; (3) and the dimensions through which families influence firms (Hernández-Perlines et al., 2021). Separately literature reviews have been published to establish what we know about the research field of EO and/or FB (Benazzouz, 2019; Debellis et al., 2021; Hernández-Linares & López-Fernández, 2018; Suess, 2014; Kárpáti, 2021; López-Fernández et al., 2016; Montiel-Campos, 2018). Previous reviews and articles have shown that research in both areas is constantly evolving, and new approaches are needed to understand them in the future better (Hernández-Linares & López-Fernández, 2018).

To advance scientific knowledge, researchers generally emphasize the importance of rating the literature in a research area according to the main trends in the discipline (Bjork et al., 2014). As a first step in the literature review, bibliometric analysis is an excellent tool for advancing knowledge by engaging researchers and practitioners by providing a transparent audit trail of published articles (Bjork et al., 2014). Research on EO and FB is well reflected in scientific papers, especially the most cited ones. The bibliometric analysis provides quantitative information on authors as well as on topics and journals. The method helps researchers identify definitive studies and high-impact journals (Dubin et al., 1993), which is also widely used in business and economics research (Kim et al. 2006).

In this context, with a new bibliometric literature review, I present a deeper view of the trends in EO research by focusing only on articles published on the topic of FB. Thus, the present study aimed to synthesize and organize existing knowledge in the connection of EO and FB research field published in any journal of the categories in business, management, or accounting of the Scopus database until the end of 2021.

2. Methods

To identify the articles, I used to ‘Scopus’ scientific online database. I created a focused bibliometric analysis (see Figure 1), which is the first step for the comprehensive literature review.

Figure 1: Search overview

Steps	Search	Restrictions	Number of papers
1 Base search	Database: Scopus	<ul style="list-style-type: none"> Search in: Title, Keywords, Abstract Journal articles and reviews only Year: until 2021 Subject area: Business, Management and Accounting 	259 different articles
2 Filtered search I.	Terms: <ul style="list-style-type: none"> “family business*” OR “family firm*” OR 	<ul style="list-style-type: none"> Search in: Only Title Journal articles only Year: until 2021 Subject area: Business, Management and Accounting 	72 articles
3 Filtered search II.	<ul style="list-style-type: none"> “family compan*” OR “family enterprise*” AND 	<ul style="list-style-type: none"> Search in: Only Keywords Journal articles only Year: until 2021 Subject area: Business, Management and Accounting 	77 articles
4 Final search	<ul style="list-style-type: none"> “entrepreneurial orientation” 	<ul style="list-style-type: none"> Search in: Only Title OR Keywords Journal articles only Year: until 2021 	91 different articles

Source: Own illustration by Scopus database

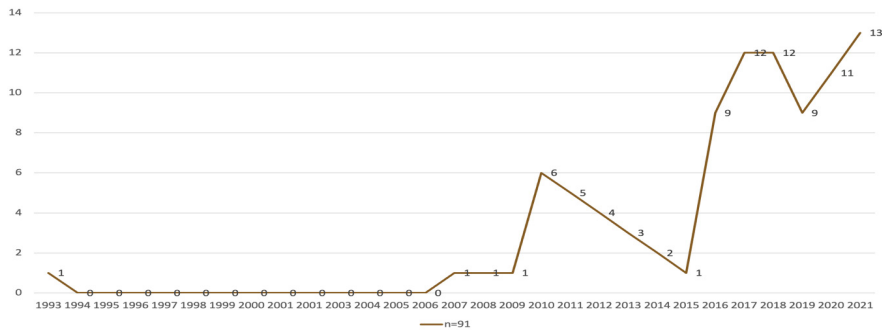
The following terms were used for searching: 'family business*' OR 'family firm*' OR 'family compan*' OR 'family enterprise*' AND 'entrepreneurial orientation' (where * stands for an indefinite number of free characters). I intentionally used synonyms in terms to focus the most on the topic. To determine the final articles, I performed a four steps search. Firstly, in the 'base search' I defined some restrictions, as (1) search in titles, keywords, and abstracts; (2) considered to articles and reviews; (3) published until the end of 2021; (4) and concentrate to Business, Management, and Accounting research area. These conditions allowed me to focus on the current state of the research. This search overview resulted in a list of 259 articles. There were too many articles in this search. Thus, I narrowed down the list by looking only for the title and/or keywords to give a greater chance of finding relevant results. Secondly, the keywords and abstracts were eliminated, focusing only on the titles. All other filter conditions remained unchanged. This search resulted in 72 articles. Thirdly, one restriction has changed. The search filtered only for keywords, which resulted in 77 papers. I identified several matching hits between the results of the last two filtered searches. Consequently, the results were aggregated (the final filtered criterion was searched in titles OR keywords, with all other restrictions described above). The final list has included 91 different articles.

3. Results

I conducted time-series analysis, language test, journals ranking, number of citations, and authors & affiliations ranking in the bibliometric analysis. These results will introduce in this paragraph.

Analyzing the time series of the selected articles, it seems that the most articles published after 2015 and the most significant number of journal publications in this field were published in 2021 (see Figure 2). It is soundproof of this multidisciplinary topic being increasingly focused on scientific attention.

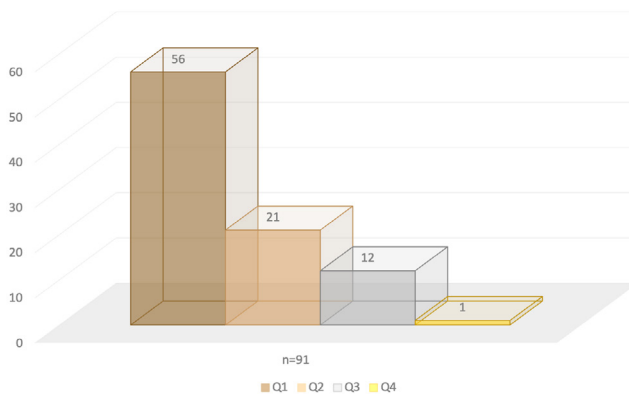
Figure 2: Number of published articles between 1993 and 2021



Source: Own illustration by Scopus database

Regarding the journals' rankings, these articles were filtered based on the quality by Scimago Journals Ranking (SJR). Q1, Q2, Q3, and Q4 categories are distinguished where Q1 is the highest quality. In Figure 3, it seems the most articles published in high ranked journals (62% of the articles have Q1, 24% papers have Q2 ranked, and less than 14% have in lower category journals). These data show that the elite of academic publishers is interested in this multidisciplinary topic. Consequently, high-quality research publishes on the subject, which is an excellent opportunity to collect professional literature. The following literature review steps make it possible to build future research through these journals and articles.

Figure 3: Number of articles by Scimago Journal Ranking



Source: Own illustration by Scopus database

At the journal's ranking, a list of TOP 10 journals was created based on the number of articles and citations of the papers (see Table 1). There are only two Q2 quality journals in this list, and the other ones are Q1. It also proves the high-quality attention to this research topic. The 'biggest three' family business journals are listed ('Family Business Review', 'Journal of Family Business Strategy', and 'Journal of Family Business Management'), which shows the topic's relevancy in the field of family business sciences.

Citation analysis is a practical and relatively widespread tool for objectively reviewing and evaluating scientific articles (Stremersch et al., 2007), and its use was therefore justified. Based on the citation statistics, the 'Family Business Review' is the largest publisher in this field and deserves special attention from future researchers. On the other hand, 'Entrepreneurship and Regional Development', and 'Small Business Economics' appear to be even more influential in terms of average citations per article and worthy of special attention. They are keen to publish multidisciplinary topics in the field of the family business.

The topic is well defined (not interdisciplinary) and primarily published in high-ranked entrepreneurial journals. In addition, this list also shows which journals are the most relevant for future research.

Table 1: Summary of the top 10 journals based on number of published papers

Nr.	Source Title	SJR ranking	Number of hits	Number of citations to these papers	Average citations per paper
1.	Family Business Review	Q1	7	1417	203
2.	Journal of Family Business Strategy	Q1	7	187	27
3.	International Entrepreneurship and Management Journal	Q1	6	144	24
4.	Journal of Business Research	Q1	5	193	39
5.	International Journal of Entrepreneurship and Small Business	Q2	5	50	10
6.	Small Business Economics	Q1	4	646	162
7.	Entrepreneurship: Theory and Practice	Q1	4	294	74
8.	Journal of Family Business Management	Q2	4	47	12
9.	Entrepreneurship and Regional Development	Q1	3	669	223
10.	Journal of Small Business Management	Q1	3	54	18

Source: Own illustration by Scopus database

Looking at the most published authors of the field, I can identify an influential circle of researchers who affect the discourse the most. Table 2 lists the authors who authored at least two articles in the corpus and shows their affiliation. It also concludes that a significant portion of the research EO and FB is conducted by of narrower circle, also influencing the research directions of the field. The top list is mainly concentrated in geographic terms: most articles have been affiliated with institutions from Spain (5), which is a vital characteristic to consider while interpreting data and evaluating research results.

Table 2: List of authors with the most published articles

Author	Affiliation	Number of paper
Hernandez-Perlines F.	University of Castilla-La Mancha, Department of Business Administration, Toledo, Spain	7
Bauweraerts J.	University of Mons, Department of Control, Risk Management and Entrepreneurship, Mons, Belgium	3
Casillas J.C.	University of Seville, Department of Management and Marketing, Seville, Spain	3
Hernández-Linares R.	University of Extremadura, Mérida (Badajoz), Spain	3
Arz C.	University of Hohenheim, Institute of Marketing and Management, Entrepreneurship (570 C), Stuttgart, Germany	2
Arzubiaga U.	University of the Basque Country, Faculty of Economics and Business, Bilbao, Spain	2
Calabrò A.	IPAG Business School, IPAG Entrepreneurship & Family Business Center, Nice, France	2
Llanos-Contreras O.	Universidad Católica de la Santísima Concepción, Concepción, Chile	2
Martínez A.B.	University of Extremadura, Faculty of Economics and Business Administration, Elvas (Badajoz), Spain	2
Zellweger T.	University of St. Gallen, Center for Family Business, St. Gallen, Switzerland	2

Source: Own illustration

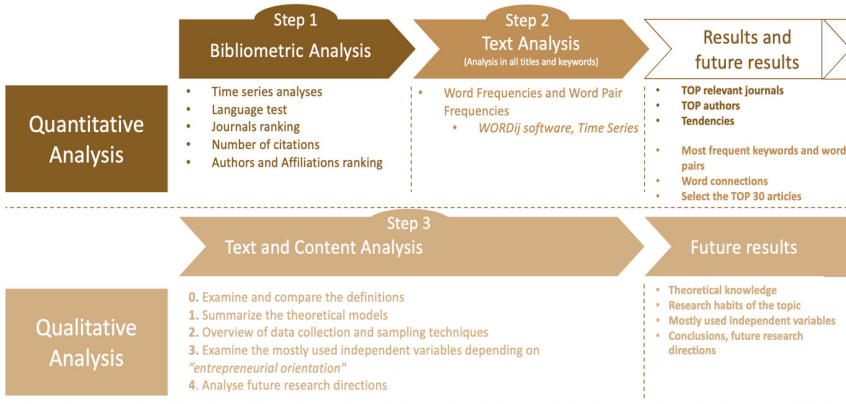
4. Discussion and recommendations

The primary objective of this paper was to identify the most influential journals and articles on entrepreneurship orientation (EO) and family business (FB) indexed in the Scopus database. This study aimed to conduct exploratory research on the relationship between EO and FB issues. For this purpose, I conducted a bibliometric analysis as the first step of a systematic literature search. My aim was to understand better the current state and trends of research on this multidisciplinary topic. I conducted time-series analysis, language test, journals ranking, number of citations, and authors & affiliations ranking during the bibliometric analysis.

The results have been of increasing scientific interest in recent years, with a growing number of studies on the relationship between EO and FB. Most of the articles have been published in high-quality, prestigious journals (especially family business and entrepreneurship journals), which shows the professionalism and the limitations of the topic. The identified articles have great potential for future research and publication in high-impact journals. It is important to note that this study is also linked to previous findings, demonstrating the research direction (Aparicio et al., 2021).

Based on the results, I intend to continue the systematic literature search in two further steps (see Figure 4). First, create quantitative text analysis of titles and keywords (with word and word pair frequency analysis). Then, select the most relevant and cited 30 articles, on which I will perform qualitative content analysis. Accordingly, the topic will be well delimited, and I will understand the main basic models and results that make up the subject and identify future research directions.

Figure 4: Overview of the research concept and directions for future research



Source: Own illustration

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