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The Role of Top Management Team Digitalization and Firm Internationalization for Sustainable Business

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Abstract: This paper aims to investigate the relationship between the existence of firm digitalization and firm internationalization in selected companies in the European Union (EU). The study provides evidence that upper echelon characteristics bring new competences and skills, including digital skills, which are essential for company internationalization in the modern world of turmoil, crisis and uncertainty. The research paper argues that top management team (TMT) characteristics, and particularly digitalization awareness and skills among the senior management, are critical factors for driving success in international markets and for the sustainability of the business. The dataset in this paper includes around one hundred executive and non-executive profiles in selected European countries, distributed in different industrial sectors. The empirical data have been collected from available online secondary sources on private companies in Germany, Sweden, Estonia, Latvia and Lithuania. The paper’s findings suggest that a relationship exists between TMT digitalization and firm internationalization. Additionally, the paper’s results illustrate that the companies with an on board Chief Information Officer or Chief Digitalization Officer tend to be more international in comparison to those which do not possess these two job positions in their top management.

Keywords: digitalization; internationalization; top management teams; sustainable

1. Introduction

During the first decade of the 21st century, an increasing number of advanced technologies and digitalization processes across businesses worldwide was instilled, which pushed organizations to focus on innovation continuity and strategic reorientation in global markets [1]. The digitalization era is characterized by the increasing performance of hardware and software along with sinking prices and unbounded connectivity through internet and mobile technologies. Thereby, digitalization goes beyond breakthroughs in improving information technology infrastructure, as well as the necessary technical process of digitizing, coming from the “Third Industrial Revolution” [2].

As the second decade of the 21st century is characterized with rapid digital transformation, companies are trying to promote artificial intelligence and digitalization across all levels of management. Furthermore, companies across massive business sectors have become customer-centric and at the same time, many new positions have appeared not only in the upper echelons, but throughout the entire

organization [3]. Companies have shifted their attention to approaching customers through digital platform development, software, hardware and middleware advancements, accompanied by artificial intelligence development—an inevitable process for many companies if they wanted to stay competitive and long-lasting in their life cycle [4]. Moreover, firms keep an eye on the digitalization advancements in various business sectors as they try to digitalize workflows and customer databases, which brings not only profit, but sustainable growth as well. Concurrently, the pressure on senior management has increased due to complex strategic decision-making, unstable markets, and demanding customers across various industries. The pressure has increased on the top managers to foster their IT and digital competences and skills in order to tackle digital transformation challenges [5]. Thus, it has triggered a greater need for increased awareness and knowledge of digitalization in business and technological contexts [6,7].

Companies' top management have started to train in and adjust to practices related to digitalization and artificial intelligence. Due to increasing customer demands, complex external market conditions, changing policies and regulations, companies need to foster and prepare their upper echelons for taking risks and making high-impact decisions in highly uncertain situations [8,9]. Thus, senior management teams are promoting and implementing hiring practices which require new top managers to possess digitalization and IT skills, which help them when taking high level of risks during strategic decision making [10–12].

Based on the abovementioned information, the motivation for writing this paper comes from the fact that the authors team has previously researched the top management teams (TMT) of international companies from the perspective of diversity and data governance [13,14].

The paper contributes to the upper echelon theory and practice in the domain of top management teams. Furthermore, the paper contributes to the investigation of emerging topics in corporate life, as top management teams are under constant scrutiny by various institutions. The study also adds to the deepening of our understanding of the importance of executives' digitalization skills in ensuring a firm's increased internationalization and sustainability. Thus, the study sheds light on why digitalization is vital for all top managers in making high-affecting decisions involving the firm. This could create a new level of understanding and lead to shareholders and stakeholders focusing on implementing the best practices and mechanisms for increasing observed and unobserved digital competences and skills among executives [15].

2. Literature Review and Research Hypotheses

There has been an emerging pattern of digitalization among different businesses and countries across the world, triggered by cybersecurity, customer inquiries and other stakeholders' demands [16–18].

The increasing need for digitalization is especially prominent when the companies are customer-focused and require international operations [19]. Additionally, digitalization of the top management team (TMT) tends to increase the work quality of the job, as the business processes are automated, which enables the top managers to devote more time to strategical thinking and strategical decisions aimed at the long-term development of the firm. On the other hand, studies have provided evidence that international companies need to be digitalized in order to manage cyber security aspects, customer data migration and in-house financial transactions [20]. Thus, an isomorphism or endogeneity is created between TMT digitalization and firm internationalization.

Interestingly, multinational companies which are shifting into sustainable business development and are considered “digital” in today's continuously volatile harsh environment, strive for ways to improve their business operations. In such situations, focusing on the economical use of all available resources in the company in order to manage digital transformation and economic crises, is inevitable [6].

The top management team's theory argues that the firm's strategic decisions—and subsequent results—are reflections of the features of its senior management, and particularly its upper echelon structures [20,21]. Additionally, the relationship between TMT members and the Chief Executive

Officer (CEO) affects the sustainable development of the firm. For instance, if the CEO is also the founder of the company, this might boost digitalization within the top management and the company [22]. As the top management team (TMT), social adaptation is a crucial board feature and it has very important components for strategic asset and digitalization. TMT social integration might be an important mechanism through which the senior management approach apprehends an organization's advantageous actions. The Chief Digitalization Officer (CDO) or Chief Information Officer (CIO) positions have been emerging throughout the Fortune 500 companies across Northern America, Europe and Asia [23]. The CDOs core roles are to fulfill their positions and determine how they can be successfully installed to guide organizations through their digital transformation [24]. Digitization possesses the potential to have an extended impact not only on the way of working, but also in terms of fostering the tempo of transformation that companies are dealing with [25]. Both implications steer to three main demands that have to be tackled to be successful: new capabilities and competencies, new ways of leadership, and new firm resources [26]. Depending on the degree to which organizations meet these demands, they could improve their culture towards "digital thinking". Contrary, digital transformation efforts and programs are facing big challenges to meet the expected business credentials. Several studies in the literature explicitly pinpoint the importance of managing people and organizational challenges in the business environment of digital changes [27]. Interestingly, nowadays in the global world of technological disruption and constant competition for innovation across a wide variety of business sectors, firms try to focus on long-term sustainability through investments in human capital and digitalization, which would ease the process of business transformation. Thus, TMT not only across Fortune 500 firms, but among many other companies create executive and non-executive job positions, which are responsible for ensuring the digital transformation of the companies. At the same time, the firms hire executives, who serve as drivers and promoters of digitalization, which eventually increases investor interest and makes the company attractive not only on the domestic market, but internationally as well.

The study refers to the upper echelon theory by emphasizing the critical importance of top management team characteristics, such as an international experience, digital awareness, educational background and company tenure, which eventually could increase the level of TMT digitalization.

The paper sets two hypotheses, which were investigated after a literature review and statistical analyses, as follows:

Hypothesis 1 (H1). *Companies having an on board Chief Digitalization Officer in their top management team tend to be more international than the companies where no Chief Digitalization Officer exists.*

Hypothesis 2 (H2). *Firms where TMT members possess digitalization skills tend to internationalize more than the companies where TMT members are less skilled at digital processes.*

As of the first hypothesis, recent research, on top management teams' digitalization and small and medium-sized companies' internationalization, has brought about evidence that such companies' executives make strategic decisions in a highly uncertain external environment as the firms are trying to internationalize. Thus, the top managers need to possess advanced understanding and knowledge on digitalization, as it is essential for analyzing the complex inflow of information while making strategic decisions for the firm's internationalization [10].

Previous studies on CDO existence and micro firms' internationalization have provided evidence that manager and owner experience and knowledge in terms of digitalization helps the firms to reach potential customers overseas and thus, become more international [28]. Other studies on TMTs have also provided evidence that when the TMT promotes digitalization and innovativeness, they subsequently increase firm internationalization.

Top Management Teams Digitalization and Firm Sustainability

In the turbulent and highly uncertain business world, companies try to promote and implement digitalization not only in their business operations, but also in their upper echelons by actively adopting the best practices in terms of digital transformation, supported by the top management team [29]. Furthermore, companies across the globe put significant efforts into increasing firm internationalization and firm sustainability through so called green digitalization tools, which are based on alternative and innovative new business models introduced by the top management [30]. Additionally, top management teams are under pressure by shareholders and the community to adopt and implement sustainable management practices within the company—in regard to the environment, firm social policies and economic measures to increase the value of the firm [31]. The inter-relationship of businesses and digitalization strategy has led to business transformations in order to provide the customer with the highest possible digitalized value. If the TMT aims to deliver long-term value, the key focus must be on the products and service outcomes. Therefore, realizing TMT digitalization opportunities requires problem-solving by aligning both business and IT aspects.

Moreover, top management teams are fully responsible for firm internationalization and they put significant efforts into transferring the best practices in firm internationalization from the Western world, to firms in emerging markets, which eventually will increase their sustainability and bring more investors into the business [32]. Oppositely, other studies argue that firm digitalization and firm internationalization does not necessary increase firm sustainability, especially in terms of firm performance [33].

3. Research Design

For the purpose of the study, a total data panel of 32 companies from selected European Union countries has been gathered via the online survey tool called Webropol, which is widely spread—especially in Nordic countries. This tool allows easy and comfortable online surveying across Baltic and Scandinavian countries as it has positive references among the business sectors. Additionally, the researchers possess access to the tool under their respective university account in order to conduct data collection. Additionally, we have distributed the survey through LinkedIn professional platform, as the platform enables effective data collection on middle level and top level managers across European companies. LinkedIn has been used for conducting the survey in this case, as it is popular and frequently used by managers to share best practices and conduct business both locally and internationally. Top managers, especially, use LinkedIn actively due to the fact that this platform is highly used on the global executive market. The period of the data collection was 2017–2018 and more than one hundred executive profiles were browsed from German, Swedish, Estonian, Latvian and Lithuanian companies from different industries. All of the selected companies are international, with the level of internationalization measured as the ratio of the foreign sales to total sales (FSTS) [34]. Additionally, previous studies on internationalization and performance among multinational companies have produced evidence that FSTS is very common indicator for measuring the level of firm internationalization [35,36]. The panel collected primary data through the use of online questionnaires on the digitalization skills of senior and middle level managers and their perception of digitalization. Moreover, the paper uses the LinkedIn business social network in order to launch the online survey, as some top managers from the selected companies use the platform actively in order to recruit employees of different nationalities for companies' operations in Europe and Asia. Therefore, we found it practical to gather data through LinkedIn as well. In the literature there is a wide variety of studies which outline that nowadays companies actively use digital platforms and social networks in order to run their business smoothly and more efficiently when it comes to internationalization and head hunting executives [37–39].

As the paper represents a mixed method survey (Webropol and LinkedIn), it is suitable for application of the Dillman survey methodology in the quantitative research. As such, the Dillman et al. (2009) approach in gathering data has been applied in the study as it is adequate and suitable

for conducting data collection in quantitative research. This survey methodology allows for the generalizing of results especially from panel data or from standard surveys, similar to those applied in this paper based on the web-pushed approach. This means, that the respondents were asked—through emails and LinkedIn—to fill out the survey in order to make sure that it was reliable [40]. Moreover, the potential for conducting internet surveys has emerged, as many of these data collection techniques, which have transformed e-commerce—can also be applied to designing surveys. Web methods also offer the potential of cost reductions if respondents can be convinced to visit websites they may not have heard of, go through the questions and insert their answers. By using Dillman’s model of collecting data, the study tries to explain the relationship between top management team digitalization and company internationalization.

4. Results and Discussion

In Tables 1–4 below we have displayed the descriptive statistics which depict several findings of the paper. Even though the majority of the selected EU companies are operating regionally and internationally, only a few of them have on board a Chief Strategy Officer, Chief Digitalization Officer or Chief Information Officer (see Table 3). However, the questioned top managers pointed out the necessity of having at least one of these three executive positions, as their companies need to increase upper echelon awareness of digitalization and general data protection regulations [41]. Moreover, the questioned senior managers believe that higher digitalization skills among the top management teams could bring higher company performance [42]. However, digitalization skills are not only linked to IT skills, but they include soft and interpersonal communication skills, which are needed for all managers to deal with the constant changes as well [7]. Based on the upper echelon theory, the top managers possess competencies and skills, which can foster the board leadership and digital transformation of the companies. Furthermore, interestingly, the existing Chief Information Officers from the EU selected companies do not have previous dominant functions, yet regardless of this, they are responsible for the data governance and General Data Protection Regulation implementation [43]. The incumbent executives responsible for the digitalization within the firms often come from outside the companies as they bring different viewpoints and they are more objective in making tough strategic decisions on digitalization, in addition to other business areas. It is a self-explanatory matter that digitalization is not only about technology and innovation, but about people as well [44]. Digitalization skills and capabilities are not purely based on IT skills, but involve, for example, managing change or transformation along with technology advancement. Additionally, the CDO or CIO is responsible for tackling cyberattacks, which nowadays are part of the daily business life and global treats to a firm’s sustainability. The paper’s results (see Table 4) show that the CDO role includes not only IT skills, but leadership and soft skills, which are considered by the top management as important and highly desirable in TMT members in order to ensure efficiency, and cooperation in the post bureaucratic era of management and business [45].

Table 1. Distribution of countries and headquarters.

Company Internationalization	Latvia	Lithuania	Estonia	Sweden	Germany	Other EU Country	Total
Yes	13	2	0	3	4	2	24
No	6	0	1	0	1	0	8
Total	19	2	1	3	5	2	32

Source: own elaboration based on Webropol online survey conducted in the period 2017–2018.

Table 2. Distribution of countries and headquarters.

Country of Company's Headquarters	Company Internationalization		
	Mean	Std. Dev.	Freq.
Latvia	0.68421053	0.47756693	19
Lithuania	1	0	2
Estonia	0	0	1
Sweden	1	0	3
Germany	0.8	0.4472136	5
Other	1	0	2
Total	0.75	0.43994135	32

Source: own elaboration.

Table 3. Tabulation of statistical results.

Is your company International?	Freq.	Numeric	Label
	8	0	No
	24	1	Yes
Does the position of Chief Information Officer or Chief Digitalization Manager exist in your company?	Freq.	Numeric	Label
	15	0	No
	16	1	Yes
Is the Top Manager/Founder responsible for Data Governance have IT education?	1		Missing
	Freq.	Numeric	Label
	13	0	No
Is the Top Manager/Founder responsible for Data Governance have dominant function in IT?	19	1	Yes
	Freq.	Numeric	Label
	9	0	No
Do you think that IT skills of the Top Managers have a positive impact on company performance?	23	1	Yes
	Freq.	Numeric	Label
	7	0	No
Do you think that IT skills of Top Managers have a positive impact on company internationalization?	24	1	Yes
	1		Missing
	Freq.	Numeric	Label
Do you consider in general that higher IT skills possessed by Top Management Teams' members, increase the positive impact on company performance?	7	0	No
	25	1	Yes
	Freq.	Numeric	Label
	4	0	No
	28	1	Yes
	Freq.	Numeric	Label
	15	1	<100
	16	2	100–500
	1	3	>500

Table 3. Cont.

	Freq.	Numeric	Label
What is the industry of your company?	8	1	Finance
	1	2	Manufacturing
	5	3	Logistics and Transport
	4	4	Trading
	4	5	Tourism
	10	6	Information and Communication Technology
	Freq.	Numeric	Label
What is the number of employees at your company?	15	1	<50
	16	2	51–250
	1	3	>250

Source: own elaboration based on EU Regulation for SME (Small and medium-sized enterprise) User Guide 2020.

Table 4. Linear regression of variables.

Variable	Coefficient	Std. Error	t	$p < t $	95% Interval
Existence of CIO or CDO in TMT	−0.0203765	0.2576745	−0.08	0.938	−0.5596954
IT Education of CIO or CDO	0.3646953	0.2373409	1.54	0.141	−0.1320649
Dominant function in IT	−0.2184861	0.2346003	−0.93	0.363	−0.7095103
Perception of TMT IT skills impact on firm performance	−0.2942436	0.2780121	−1.06	0.303	−0.8761295
Perception of TMT IT skills impact on firm internationalization	−0.204758	0.1577935	−1.30	0.210	−0.5350236
Perception of IT skills impact on firm internationalization	0.1083094	0.2439997	0.44	0.662	−0.4023879
Number of employees	−0.0709138	0.1340772	−0.53	0.603	−0.3515406
Industry	−0.0813118	0.0498132	−1.63	0.119	−0.1855721
Country	0.1038341	0.048553	2.14	0.046	0.0022115

Source: own research in STATA software, statistical significance at $p < 0.05$, $n = 32$, R-squared = 0.3670, Root MSE = 0.42063. Chief Digitalization Officer (CDO); Chief Information Officer (CIO); TMT: top management team.

Some authors suggest that the headquarter location has an impact on firm internationalization [46]. Similarly, the findings of other studies reveal that the headquarter location positively affects company internationalization and the companies from Lithuania and Sweden had the highest level of internationalization (see Table 2).

Table 2 depicts the majority of the companies' headquarters as being situated in Latvia and Germany, as their size in the total sample was predominant. Regardless of this and thanks to the Dillman survey methodology, this did not decrease the significance and importance of each of the answers in this quantitative research [47]. Table 3 below shows the frequency and the number of respondents for the questions from the conducted survey.

Interestingly almost half of the sample of surveyed companies claimed that they do not have a Chief Digital Officer—it could be interpreted that these companies are small sized in terms of employees (smaller than 100) and at the same time ten of the total number of thirty-two are nested into the IT sector [48].

Based on the linear regression statistical operationalization, the paper shows that companies which have CDOs do not necessarily have a higher firm performance than the companies without a CDO [49]. At the same time, companies with a CDO tend to be more international than their counterparts with no CDO in the upper echelon (Table 4). Interestingly, based on the sample of 32 companies, the paper brings evidence that the firms where the employees believe and consider that the IT skills among senior managers would eventually contribute to the firm internationalization.

The paper argues that TMT characteristics such as dominant function, educational background and internationalization have an impact on TMT digitalization skills. The paper identifies aspects of

digitalization and the effects on company performance and level of internationalization. This research draws the attention to top management team's characteristics and digitalization skills.

5. Conclusions

The paper outlines that even though there is a worldwide need for multinational companies to have a Senior Digitalization Manager, still, the existence of such a position within a company is not guarantee that the firm will manage digital transformation effectively and that the company will be more international. The upper echelon theory tries to ensure that CDOs have sufficient authority in terms of management control and ownership on data governance. However, the majority of CDOs in the paper have successfully and timely conceived digital transformation strategies and implemented the associated digital business activities. The paper identifies aspects of digitalization, which affect the level of company internationalization, as being positively connected. This study contributes to the theory of top management teams as it provides evidence that TMT members possess, and should be aware of digitalization skills and competences as key capabilities needed for each senior manager nowadays. Therefore, the paper provides evidence for a relationship between senior managers IT and digital skills and firm internationalization, thanks to the fact that more "digital" top managers would promote more remote work among the employees and they would reach more customers abroad, which would make their firms known, and more familiar to remote customers, suppliers and business partners. Additionally, it would boost the long-term firm sustainability in terms of economic and social aspects. Last, but not least, the paper summarizes the facts that international companies and particularly their top management team members should pay significant attention to the digitalization of the board as it could have an imminent impact on strategic firm decisions and firm policies related to internal and external business processes.

5.1. Study Limitations

As the paper covers data from several European countries, the total sample size consists of 32 companies and more than half of the total number of companies are from Latvia. Additionally, not all firms are large companies in terms of firm size, which might affect the statistical results as well. On the other hand, the collection of data from the 32 companies has been quite challenging in terms of access and availability from the total number of surveyed firms. Furthermore, the limitations on data collection from Central and Eastern European companies are big challenge for scholars conducting research within this region.

5.2. Future Research

In the future, it would be interesting to monitor the development of digitalization skills and competencies among TMT members and the continuation of interactions between CDOs and the other senior management members in order to have sustained synergy, higher firm internationalization and performance. However, there will be many challenges for smoother digital transformation in front of the companies across businesses in the process of enhancing digitalization abilities such as management control practices, managing firm cybersecurity, increasing the level of digitalization and IT skills among the management elite members.

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