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Role of Cultural Dimensions and Dynamic Capabilities in the Value-based Performance of Digital Healthcare Services

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ABSTRACT

Global lockdowns due to COVID-19 pandemic prompted healthcare providers to accelerate the utilisation of digital technologies in healthcare services, yet despite this push, the pace of deploying digital healthcare services is still unsatisfactory. While researchers in the field have mainly focused on the role of technology, the role of a country's cultural dimensions as antecedents of dynamic capabilities responsible for driving the digitalisation of the healthcare services is largely under-researched. Consequently, we aim to investigate the role of country's cultural dimensions and dynamic capabilities in the value-based performance of digital healthcare services. The study rests on multiple-case-study design, which was applied to examine the interlinkages between the cultural dimensions, dynamic capabilities and the value-based performance of digital healthcare services across Lithuania, the United States and Spain. Information was gathered through conducting 66 interviews with healthcare ecosystem stakeholders. The study results show that the low-scoring cultural dimensions of power distance, uncertainty avoidance and long-term orientation and high-scoring dimensions of individualism, masculinity and indulgence are antecedents of strong dynamic capabilities, specifically with regards to strong environment scanning, employee engagement and organisational learning. Furthermore, strong dynamic capabilities were found to be associated with a more advanced implementation of digital healthcare services.

1. Introduction

Healthcare providers have experienced significant challenges coping with the pandemic and the surge in COVID-19 cases, which have encouraged a faster move towards developing and deploying digital healthcare services with an aim to ensure value-based healthcare performance (Walsh et al., 2020). Porter & Lee (2013) defined value-based healthcare performance as the outcomes achieved that matter to patients relative to the cost of achieving those outcomes. They proposed a strategic agenda for moving to a high-value healthcare delivery system, which comprised organising the services into integrated practice units; measuring the outcomes and costs for every patient; moving to bundled payments for care cycles; integrating care delivery systems; expanding the geographical reach; and building and enabling an effective information technology platform. According to Lowe (2018), value-based healthcare performance can be measured as the meaningful patient outcomes per dollar spent and providers should focus on improving efficiency by doing more high-value activities, thereby improving

outcomes. In some recent publications on value-based healthcare, scholars include more elements, such as an improved population's health and needs of healthcare providers for assessing value-based healthcare performance (Bachynsky, 2020; Bodenheimer & Sinsky, 2014; Iglesia et al., 2020). Authors argue that value-based healthcare performance should improve the patient and healthcare provider experience, the health of the population and increase the effectiveness of care. The new stream of scientific literature supports the use of a complex and systemic approach towards understanding healthcare value-based performance and goes far beyond simple cost-reduction measures. It considers that digital healthcare solutions have a lot of potential to contribute to value-based healthcare performance. For example, digital technologies facilitate the acquisition and handling of medical data, create new or improve the functionality of medical devices, increase the liability of services, enhance the proximity of healthcare services to patients etc. (Pundziene et al., 2022).

Although value-based healthcare is considered to be significant for patients, doctors and the ecosystem more generally, it is a radical change

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for many healthcare providers. To successfully cope with this strategic change healthcare providers need the ability to redesign organisational structures and assets (Teece, 2019). Dynamic capabilities (DCs) are defined as ability to integrate, build and reconfigure internal and external assets of the organisation to address the rapidly changing environments (Teece, Pisano & Shuen, 1997). Thus, they are critical to successful strategic transformation of the healthcare providers that need to deploy digital healthcare services and pursue value-based performance.

We argue that dynamic capabilities of healthcare providers are unique across countries as they rest on the underlying culture of the country that the healthcare ecosystem serves. Culture, which can be defined as the collective programming of the mind, can aid to distinguish the members of one group of people from others (Hofstede, 1980). Therefore, cultural diversity between different countries in assessing healthcare organisation dynamic capabilities and value-based healthcare performance can be evaluated through national culture dimensions of power distance, individualism, masculinity, uncertainty avoidance, long-term orientation and indulgence (Hofstede, 2010; Minkov, 2011).

The research question of our study is: How do the cultural dimensions of a country and dynamic capabilities relate to the value-based performance of digital healthcare services? Consequently, the aim of the paper is to investigate the role of a country's cultural dimensions and dynamic capabilities in the value-based performance of digital healthcare services. The study provides a lens through which to view performance by considering the cultural dimensions of power distance, individualism, masculinity, uncertainty avoidance, long-term orientation and level of indulgence (Hofstede, 2010; Minkov, 2011) when attempting to understand the dynamic capabilities of healthcare providers as drivers of the digitalisation of healthcare services and, thus, digital healthcare value-based performance. The results of this study provide new insights for healthcare governing bodies and healthcare providers to ascertain which dynamic capabilities should be elaborated to achieve better results in terms of promoting good digital healthcare value-based performance, while considering the specific culture of the country.

Therefore, this paper offers the following twofold theoretical contributions:

- 1) We extend the dynamic capabilities framework by providing novel empirical evidence-based insights into how country's cultural dimensions relate to the manifestation of healthcare providers dynamic capabilities. Based on a theory of cultural dimensions (Hofstede, 2010; Minkov, 2011), the low-scoring dimensions of power distance, uncertainty avoidance, long-term orientation, and the high-scoring dimensions of individualism, masculinity and indulgence show a tendency to be antecedents of strong dynamic capabilities, and specifically tend to strengthen environment scanning, employee engagement and organisational learning.
- 2) We show that cultural dimensions and strong dynamic capabilities, in turn, affect the value-based digital healthcare performance; essentially by providing grounds for a more advanced implementation of digital healthcare services, e.g. the usage of advanced information and communication channels, the variety of services deployed and the embeddedness of the digital healthcare services in the country level healthcare system.

Lastly, we provide aggregated and systemically analysed results that could enhance the knowledge of healthcare organisations by helping them to recognise the diversity of cultural dimensions and how they can relate to the manifestation of dynamic capabilities and, as a result, the level of digital healthcare performance.

This article is structured in the following way. First, we provide the theoretical grounding for our research by explaining the key concepts of dynamic capabilities, cultural dimensions and the value-based performance of digital healthcare services. This is followed by the research

methodology section, in which we provide information on our sampling strategy, and data collection and analysis. In the results section, we aggregate our findings about the cultural profiles of the countries under investigation, the manifestation of their dynamic capabilities and the performance of their value-based digital healthcare services. Finally, the paper concludes with a discussion and conclusions section followed by the managerial implications.

2. Theoretical Background

The theoretical background of this paper integrates different frameworks: (i) dynamic capabilities, (ii) Hofstede's cultural dimensions and (iii) the value-based performance of digital healthcare services. In the following subsections, we provide definitions of the key concepts and explain the connections between dynamic capabilities and cultural dimensions. Second, we discuss the links between cultural dimensions, dynamic capabilities and the value-based performance of digital healthcare services.

2.1. Dynamic capabilities and cultural dimensions

Dynamic capabilities refer to a firm's ability to integrate, build and reconfigure internal and external resources and assets to address the rapidly changing environments they operate in (Teece, Pisano & Shuen, 1997). In the light of the current COVID-19 pandemic, healthcare organisations have faced and are continuing to face significant challenges regarding the digitisation of services. The scientific literature suggests that dynamic capabilities are required to implement the digital transformation of a healthcare system and services effectively (e.g. Leung, 2012). Their DCs enable firms to create, deploy and protect intangible assets that ground their overarching long-term business performance (Teece, 2007). They are unique because they help to renew and transform the firm's capabilities (Teece, 2014; Winter, 2003). A firm's DCs tend to be based on its processes and assets, which can affect their current positions, potentially leading to new positions and paths that would allow the firm to make the best use of their strategic assets (e.g. Helfat & Peteraf, 2015). Dynamic capabilities typically relate to higher-order activities that are linked to management's ability to sense and then seize opportunities, navigate threats, and combine and reconfigure their specialised and co-specialised assets to meet their changing customer needs, and to sustain and amplify their evolutionary fitness, thereby building long-term value for investors (Teece, 2007).

Teece (2007) differentiated three types of dynamic capabilities: (1) the sensing capability to identify opportunities, (2) the capability to seize opportunities, and (3) the reconfiguring capability to maintain competitiveness by recombining and reconfiguring the business. However, scholars have developed different classifications for the dynamic capabilities construct (Schilke et al., 2018), creating confusion over the meaning and its utility (Li & Liu, 2014). Pundziene et al. (2021), based on Teece's DCs framework (2007, 2019), proposed the following five dynamic capabilities:

- 1) environment scanning, which is composed of relevant issues regarding the networking and acquisition of information that allows a firm to constantly scan the external environment of the firm and to identify early signs of change; 2) opportunity selection, which is composed of activities that the firm performs regarding bold trial and error attempts and customer tests that allow a firm to recognise and select opportunities; 3) employee engagement, which comprises the issues relevant to the resources devoted towards innovation projects, relevant process management and the engagement of employees. The latter is the most significant indicator of dynamic capabilities and covers the 'human factor' on the dynamic capabilities scale. This dynamic capability allows a company to assign resources towards the deployment of selected opportunities and to assure a lean management of the innovative projects; 4) the commercialisation of innovation, which covers all relevant issues regarding incremental innovation, where the

content of the scale covers new products and services for existing local markets, with the assumption that if a market is not heavily saturated with innovations, new products and services will come about as a result of incremental change. This capability allows a firm to scale and sell the outputs of its innovative projects; and finally, 5) organisational learning, which is a sustained action to learn and assures a continuous intake of new information, knowledge development and error correction.

This particular classification of DCs provides more granularity in how specific capabilities can be measured, and, thus, is more instrumental to our study.

While there is a solid body of knowledge on DCs, researchers often fail to consider contextual factors (e.g. a culture and its derived institutions) affecting dynamic capabilities (Teece, 2007). Therefore, the contextual environment under which dynamic capabilities strengthen firm performance are not yet fully identified (Wilden et al., 2013). Indeed, there is a notable absence of references to the collective mindset and traditions ascending from country or institutional environment – in broad terms culture in the DC research. Furthermore, scholars often overlook the fact that DCs are conditioned and sometimes limited by the external context, like e.g. the culture of the country (Barreto, 2010; Schilke et al., 2018). Thus, we have attempted to fill this gap by exploring the role of cultural dimensions and dynamic capabilities on the value-based performance of digital healthcare services.

The cultural profile of a country responds to certain strategic challenges while it can also shape perceptions, so managers should be able to recognise and deal effectively with cultural differences and diversity (Schneider & De Meyer, 1991). Although different methods for measuring cultural change have appeared over the years (e.g. Schwartz, 1994), none of these frameworks has yet reached the level of influence of Hofstede's framework (Hofstede et al., 2010). Hofstede's framework allows researchers to quantify cultural differences between countries. Therefore, one of the most common approaches to evidencing the role of cultural differences is to consider Hofstede's dimensions scores between country pairs (Beugelsdijk et al., 2015).

Hofstede (1980) constructed his culture framework from data collected in attitudinal surveys conducted in subsidiaries of IBM in 72 countries from 1967 to 1973. He originally identified four dimensions of culture: 1) individualism/collectivism, which denotes the extent to which society sees people primarily as individuals looking after themselves (high individualism) or primarily as members of tightly knit communities (low individualism); 2) power distance, which reflects the extent to which people in a society expect and accept that power is distributed unequally; 3) uncertainty avoidance, which measures the degree to which members of society are comfortable in unstructured situations (high-uncertainty-avoidant cultures that are characterised by a strong need for predictability and control over the environment); and 4) masculinity/femininity, which reflects the emphasis in society on caring for others, solidarity, and quality of life (femininity), as opposed to achievement and success (masculinity).

A fifth dimension (long-term orientation) as well as a sixth (indulgence versus restraint) were added later and their scores were based on items and data from the World Values Survey (WVS) (Hofstede et al., 2010). Cultures scoring high on long-term orientation tend to be more future-oriented, accepting delayed gratification of their material and social needs (such cultures are characterised by strong persistence and thrift), whereas cultures that are short-term oriented tend to respect traditions and social obligations more (Hofstede et al., 2010). The indulgence versus restraint dimension, originally put forward by Minkov (2011), reflects the degree to which societies have strong norms regulating and suppressing the instant gratification of human drives.

Based on the above it could be assumed that in environments where individuals look after themselves, accept that power is distributed unequally, pursue achievement and success, are short-term oriented, and are comfortable in unstructured situations with weak regulating norms (the US could represent such an environment), the dynamic capabilities of healthcare organisations could be neither equally developed nor

connected in comparison to those healthcare organisations in environments with strong norms, where individuals primarily see themselves as members of tightly knit communities, do not accept that power is distributed unequally, are comfortable in structured situations, put emphasis on caring for others, solidarity and quality of life, and tend to be more future-oriented, accepting delayed gratification of their material and social needs (for example, Nordic countries, Lithuania).

Consequently, the effect of managerial actions is also context-bound. What would yield a positive result in one context may produce a negative consequence in another (Maheswaran & Shavitt, 2000). Further, we study interlinks between cultural dimensions, dynamic capabilities and value-based performance of the digital healthcare services.

2.2. *Dynamic capabilities, cultural dimensions and the value-based performance of digital healthcare services*

There have been several attempts to empirically examine the relationships between DCs and firm performance (e.g., Ambrosini & Bowman, 2009; Schilke et al., 2018). Despite these efforts, the contribution of dynamic capabilities to competitive advantage and firm performance remains ambiguous (Pezeshkan et al., 2016). Most studies have found a positive relationship between DCs and firm performance, supporting the notion that firms' DCs can allow them to achieve a competitive advantage and thus can help improve performance (e.g., Teece et al., 1997; Teece, 2007; Ambrosini & Bowman 2009; Drnevich & Kriauciunas, 2011; Teece, 2014). However, the way DCs precisely affect a firm's competitive advantage and firm performance is unclear, since previous empirical research has shown a huge variety of domain-specific DCs capabilities, but a lack of consensus regarding their specific measurement (Protogerou et al., 2012). Furthermore, Schilke et al. (2018) indicated that there is a need to assess and understand the antecedents of the DCs, e.g. such as the effect of culture on the development and manifestation of DCs. How DCs co-evolve with cultures, and what underlies the interaction between them, are still largely unknown (Lawrence, Suddaby & Leca, 2011). In collectivist and restraint cultures, where social institutions face greater monitoring and sanctioning constraints, some sensing, seizing and reconfiguring activities can be perceived as deviations from the existing norms, given their unorthodox and innovative nature (Taras, Kirkman & Steel, 2010). Furthermore, restrictive cultural profiles can obscure capability transfer, which is an important element in achieving competitive advantage across institutional settings (Teece, 2014). The rule of law, corporate board efficacy, effective resource orchestration, liberal market entry policies and free corporate governance mechanisms in cultures with low scores in power distance and high scores in femininity can provide a conducive setting for firms for configuring, deploying and leveraging their DCs (Teece, 2007). Developed economies, with high scores in masculinity as a cultural dimension, tend to offer a notably different and often conducive institutional environment for firms. Though the institutional environments of developed economies are not homogenous (Kuznetsov & Jacob, 2015), it is commonly accepted that they have a positive influence on firm performance (Boschma & Capone, 2015). For example, while coordinated market economies are more conducive to evolutionary change in industrial and firm structures, liberal market economies are more conducive to revolutionary change (Boschma & Capone, 2015). Therefore, firms in different institutional frameworks develop and utilise different capabilities shaped by the institutional framework they exist within (Dunning & Lundan, 2010). As stated before, it is hard to think of a country's culture as something distinct from its institutions. Therefore, the cultural context defines the effectiveness of dynamic capabilities in helping institutions to achieve their competitiveness and value-based performance (Anning-Dorson, 2018; Mertzanis et al., 2019).

3. Method

To meet the aim of research and to answer research question, we employed a multiple-case-study method. According to several qualitative methodologists (Maxwell, 1996, 1998; Eisenhardt, 1989; Yin, 1998), multiple case-study-based research can aid to building a new theoretical explanation of the phenomenon under investigation. Besides, multiple-case-study research relies on multiple sources of information, combining both primary and secondary data. The use of multiple and rich data sets allows to compare cases, to deploy triangulation procedures and assures a better reliability and validity of the results. Consequently, this approach should enable us to understand the phenomenon of the emerging digital healthcare services and the interrelations of the cultural dimensions, dynamic capabilities and value-based performance. As Harrison et al. (2017) pointed out, the multiple-case-study approach is an effective methodology to investigate and understand related complex issues in real-world settings. The unit of analysis of our multiple-case study are digital healthcare services as studied at the country or state level (Lithuania, the state of California in the United States, and the region of Catalonia in Spain) and at the organisational level (healthcare providers). Our study seeks to compare the effect of a country's cultural dimensions and dynamic capabilities on the value-based performance of digital healthcare services in Lithuania, California and Catalonia. These were the reasons why we chose to employ the multiple-case-study method as a particularly valuable research technique in this context.

3.1. Sampling and selection of the countries for investigation

Our empirical research was based on a systematic application of the multiple-holistic case-study approach, in which digital healthcare services were first chosen by judgment, rather than randomly, and then comparatively examined. This conceptual sampling design allowed us to

introduce some degree of variance to our case selection criteria from diverse cultural and geographic areas.

Lithuania, the USA (state of California) and Spain (the region of Catalonia) were selected for our investigation because they represent distinct cultural profiles. Although there is a debate on the inter-country homogeneity of cultural values, we agree with Hofstede and his followers that "when basic cultural values are compared, in-country regions tend to cluster along national lines rather than be scattered and intermixed" (Minkov & Hofstede, 2012: p. 152). Thus, in our study we assumed that the state of California represents the cultural values of the United States and the region of Catalonia represents the cultural values of Spain, therefore further in our study, we refer to the country of the

United States and the country of Spain according to these two proxies.

We identified the cultural profiles of the selected countries based on Hofstede's research (Hofstede, 2010; Minkov, 2011). The scale of each cultural dimension according to Hofstede is from 0 to 100, where the 50 mark is considered to be mid-level. Hofstede's cultural dimensions theory explains that a score of 50 is a pivot point for evaluating low and high scores. If the cultural dimension scores under 50, it is considered to be low and if it scores above 50, it is considered to be high on the scale. Low-scoring cultural dimensions represent opposite values in comparison to high-scoring dimensions. Based on this logic, Figure 1 presents the dimensions that are unique to each country or that are shared among countries; the only exception was regarding the evaluation of individualism in Spain, which scored 51, but was given a value of low rather than high individualism due to the explicit interpretation by Hofstede's insights (2020), whereby in comparison with the other European countries, Spain is considered a collectivistic society.

3.2. Data collection and analysis

For each country analysed, six cases of digital healthcare service were identified. The cases represent the digital healthcare services delivered at private and public family medicine clinics and hospitals, and for each case interviews were held with different types of healthcare

Table 1
Characteristics of the cases considered in each country under study

Country	Case codes	Clinical areas	No. of interviews	Interviewees
Lithuania	CASE A-LT, B-LT, C-LT, D-LT, E-LT, F-LT	Family Medicine, Endocrinology, Emergency, Cardiology, Oncology, Radiology	19	Managers, doctors, start-up representatives, R&D representatives
United States	CASE G-US, H-US, I-US, J-US, K-US, L-US	Endocrinology, Family Medicine, Paediatrics, Multiple	20	Managers, doctors, patients, start-up representatives, R&D representatives
Spain	CASE M-ES, N-ES, O-ES, P-ES, R-ES, S-ES	Cardiology, Neurology, Sexually Transmitted Disease, Neurology, Multiple	24	Managers, doctors, patients, start-up representatives, R&D representatives

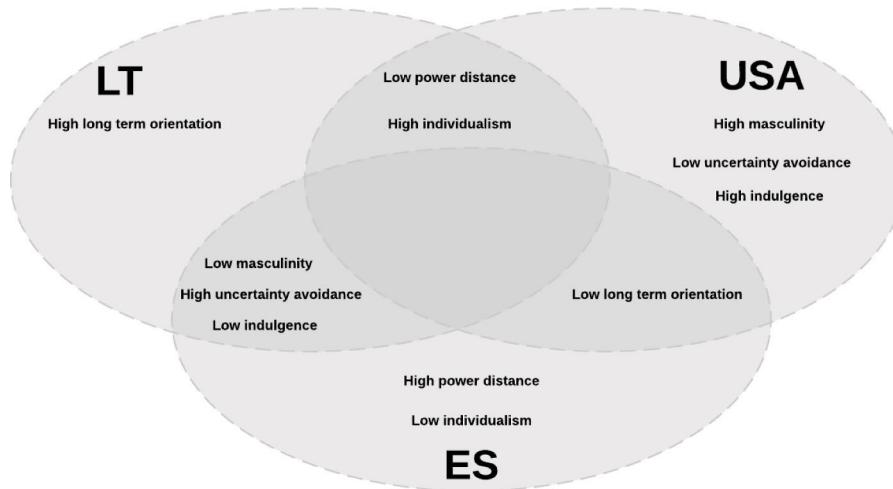


Figure 1. Cultural profiles of Lithuania (LT), the United States (USA) and Spain (ES) based on Hofstede's Cultural Dimensions' model

stakeholders: managers, medical doctors, R&D representatives, start-up representatives and patients (see Table 1). As a result, data were collected through a total of 63 semi-structured interviews: 19 in Lithuania, 20 in the United States and 24 in Spain. The data collection took place between December 2018 and November 2019.

To enhance the validity, reliability and replicability of the case studies, a research guidebook was created. Two cases were studied in the USA and Lithuania (one in each country) as pilot studies before launching the full scope of the data collection. Based on the results of those, the case-study research guidebook was modified to fit our needs. The interviews in Lithuania, the United States and Spain were conducted accordingly in the Lithuanian, English and Spanish languages. All the interviews were transcribed, and the non-English interviews were translated into English and uploaded to 'Maxqda' software for analysis. All the transcripts were read, coded and analysed by at least two researchers. The detailed responses facilitated a greater understanding of the phenomenon and allowed the researchers to observe any interplays among the key research concepts. Thematic content analysis was deployed to identify an emergent themes (Braun & Clarke, 2006). The primary data coded segments formed the major first-order concepts and second-order themes. As a final outcome, the second-order themes were aggregated under overarching theoretical concepts of dynamic capabilities and value-based digital healthcare performance. The overarching theoretical concept of dynamic capabilities consisted of five second-order themes: environment scanning, opportunity selection, employee engagement, commercialisation of innovations and organisational learning capabilities. These were first evaluated per case per single dynamic capability, and finally, the results were averaged in the following manner: strong DC and weak DC equals moderate DC, weak DC and moderate DC equals weak to moderate DC, and moderate DC and strong DC equals moderate to strong DC. Measures of the value-based digital healthcare performance were constructed based on three second-order themes: the information and communication channels used, services deployed and embeddedness at the country-wide level. Each of these dimensions was assigned basic, moderate or advanced scoring levels. The final result indicating the value-based digital healthcare performance was reached in the following manner: basic and advanced performance dimensions equalled a moderate performance, moderate and basic performance dimensions equalled a basic to moderate performance, and moderate and strong performance dimensions equalled a moderate to strong performance (see Table 2). The cultural dimensions were used as secondary data based on the methodology of Hofstede (1980, 2010, 2012), Minkov (2011) and the Hofstede-insights database. The research team comprised two Lithuanian and two Spanish researchers. The researchers regularly met to discuss the data analysis, consider the key decisions on assigning codes and to arrive at conclusions on the research findings. Based on mutual agreement, the most representative examples that fitted the research aim were extracted and are presented in the results section.

4. Results

The results of the present study are based on a thematic analysis of the interviews and of the secondary data generated in this research study, as described in the method section. Besides, we illustrate the findings with some exemplar quotations from the interviewees across all the three countries under investigation. A summary of the results is provided in Table 2. In the following first three sections we compare and discuss the similarities and differences among the cultural dimensions, dynamic capabilities and value-based performance of the digital healthcare services across the three countries. In the last section we consider interlinkages between the three earlier discussed concepts.

4.1. Cultural dimensions of Lithuania, the United States and Spain

The results of the study highlight that, according to Hofstede's

Table 2
Hofstede's cultural dimensions, dynamic capabilities and value-based performance in Lithuanian, US and Spanish healthcare providers

Hofstede's cultural dimensions			
Lithuania	United States	Spain	
<p>Power distance – low (42), employees lack influence on other people's ideas and behaviour.</p> <p>Individualism – high (60), employees tend to work on their own.</p> <p>Masculinity – low (19), oriented towards the process, not the results.</p> <p>Uncertainty avoidance – high (65), reluctant to take risks, high bureaucracy and emotional reliability on rules and regulations.</p> <p>Long-term orientation – high (82), no changes without a clear significant trigger.</p> <p>Indulgence – low (16), tendency towards pessimism, regretting the quality of IT systems and increased workload; also, do not put much emphasis on leisure time.</p>	<p>Power distance – low (40), employees lack influence on other people's ideas and behaviour.</p> <p>Individualism – high (91) employees are self-reliant and display initiative.</p> <p>Masculinity – high (62), oriented towards results with the goal to be 'the winner'.</p> <p>Uncertainty avoidance – low (46), do not require many rules and are less emotionally expressive, have fair degree of acceptance of new ideas.</p> <p>Long-term orientation – low (26) individuals strive for quick results within the workplace.</p> <p>Indulgence – high (68), proud of achievements, demonstrate 'work hard and play hard' attitude.</p>	<p>Power distance – high (57), employees expect to be told what to do.</p> <p>Individualism – low (51), employees tend to work in groups.</p> <p>Masculinity – low (42), oriented towards the process, not the results.</p> <p>Uncertainty avoidance – high (86), reluctant to take risks, high bureaucracy and emotional reliability on rules and regulations.</p> <p>Long-term orientation – low (48), look for quick results immediately.</p> <p>Indulgence – low (44), tendency towards cynicism and pessimism.</p>	
Dynamic capabilities			
Lithuania	United States	Spain	
<p>Environment scanning – strong, constant scanning of the environment.</p> <p>Opportunity selection – weak, reluctant to take risks.</p> <p>Employee engagement – strong, employees invest a lot of their own time.</p> <p>Commercialisation of innovation – weak, not able to scale up, no return on investment.</p> <p>Organisational learning – moderate, strong knowledge flow within the institution, but weak ability to orchestrate change in the organisation.</p>	<p>Environment scanning – strong, constant scanning of the environment.</p> <p>Opportunity selection – moderate, bold actions towards the introduction of new services, but refrains from risky and experimental innovations.</p> <p>Employee engagement – strong, employees encouraged to propose innovative ideas and to participate in the deployment of digital healthcare services.</p> <p>Commercialisation of innovation – moderate, organisational level, ready to scale but refrain from doing so due to unsolved reimbursement issues.</p> <p>Organisational learning – strong, the flow of knowledge and continuous learning within and across institutions is valued.</p>	<p>Environment scanning – strong, constant scanning of the environment.</p> <p>Opportunity selection – moderate, bold actions towards the introduction of new services, but refrains from risky and experimental innovations.</p> <p>Employee engagement – moderate, employees are the main initiators of ideas and invest a lot of their own time and take part in the deployment of services.</p> <p>Commercialisation of innovation – moderate, project-based digital health solutions spread regionally.</p> <p>Organisational learning – strong, flow of knowledge and continuous learning, and management efforts towards the orchestration of transformation.</p>	
Country average: Moderate	Country average: Strong	Country average: Moderate to strong	
Value-based performance of digital healthcare services			
Lithuania	United States	Spain	
<p>Information and communication channels used – basic, e.g. phone and video call, webpage.</p> <p>Services deployed –</p>	<p>Information and communication channels used – advanced, e.g. specialised applications, platforms.</p>	<p>Information and communication channels used – moderate, e.g. specialised applications, platforms.</p>	
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Table 2 (continued)

Hofstede's cultural dimensions		
Lithuania	United States	Spain
advanced, e.g. fully remote prescriptions, tele-consultations. Embeddedness at the country-wide level – basic, e.g. single project-based, in many cases no continuity of the services is assured.	Services deployed – moderate, e.g. fragmented remote prescriptions, virtual visits. Embeddedness at the country-wide level – moderate, e.g. organisation-level initiatives, organisations are responsible to maintain the services.	Services deployed – moderate, e.g. partially remote prescriptions, virtual visits. Embeddedness at the country-wide level – moderate, e.g. depending on the case, single project-based, or organisation-level initiatives or at the regional level.
Country average: Basic to moderate	Country average: Moderate to advanced	Country average: Moderate

methodology, the cultural profiles of Lithuania, the United States and Spain, despite some similarities, were significantly different (see also Figure 1). The Lithuanian and Spanish cultural profiles were much more alike compared to the United States. The Lithuanian and Spanish cultural profiles both represent low masculinity, high uncertainty avoidance and low indulgence cultures. Lithuania and the United States both represent low power distance and high individualism cultures, whereas Spain and the United States both have a low long-term orientation embedded within their cultural profiles. During the interviews, the participants from the United States demonstrated a tendency towards independent behaviour, initiative, an orientation towards results, uncertainty tolerance and pride in their achievements. The Lithuanian and Spanish cultural profiles, on the other hand, were both more oriented towards the process, and demonstrated strong uncertainty avoidance, and were more pessimistic than participants from the United States. Table 2 contains summary of the Hofstede's Cultural dimensions across Lithuania, the United States and Spain.

4.1.1. Power distance

Based on Hofstede et al.'s (2010) research, the power distance scores were low in Lithuania (42) and the United States (40), whereas in Spain (57), the power distance was high. As introduced in the theoretical part, the power distance can best be described as the extent to which the less powerful members of society accept and expect that power is distributed unequally. The established hierarchy in high power distance cultures leads to existential inequality, where subordinates expect to be told what to do. The results for Lithuania and the United States show the tendencies for the people in those cultures to prefer equality and a decentralisation of power and decision-making. The results for Spain demonstrate that it has a hierarchical society and that people accept the hierarchical order. It could be assumed that employees in cultures with a low power distance would lack the ability to influence other people's ideas and behaviour and instead would have to work hard to convince others, such as their way of doing things. Employees in high power distance cultures are expected to receive strict and close guidance from their superiors. The interview data support this theoretical basis; for instance, the United States' cases provide evidence that a lot of people have to come together to convince others of the usefulness of e.g., telemedicine. Therefore, a lot of effort must be invested in order to progress digital healthcare solutions, as noted in this quote from one participant:

"Inside the institution itself, there is a project manager and also a clinical champion and executive champion; those three together work to try to push telemedicine forward."

(CASE H-US, start-up representative)

4.1.2. Individualism

The individualism scores were high in Lithuania (60) and the United States (91), indicating that these countries represent individualistic societies. The individualism score, however, was low in Spain (51). Indeed, this was the only index among all the dimensions that was this close to the middle measure of 50, and therefore, as explicitly explained by Hofstede et al. (2010), it should be considered a low score. Thus Spain would represent a collectivistic society, as is fairly common among many European countries. Characteristics such as loose ties between individuals, the expectation that one needs to look after him/herself, a freedom of personal opinion and assigning importance to tasks versus relationships are common traits of individualistic societies, such as in Lithuania and the United States within our study. In the collectivistic cultural setting of Spain, people tend to be more integrated into groups or extended families, with personal opinions often dependent on the group, and the importance of relationships over tasks is strong. The high level of individualism demonstrated within the Lithuanian interviews could be felt through the employees' intentions to focus on their own performance rather than that of the group. The score for this was high in the United States too. The interview data demonstrate that employees in the United States tend to be self-reliant and display initiative. Superiors are usually accessible and managers rely on individual employees and teams for their expertise. Both managers and employees expect to be consulted and information is shared frequently; the expectation is that people can look after themselves and should not rely on superiors or the authorities to tell them what to do, with one participant stating:

"So they're not waiting for somebody to tell you what to do. These are 'take charge' kind of people."

(CASE G-US, manager-1)

The Spanish data indicated that, in Spain, teamwork is considered as something very natural, and so employees tend to work in this way with no need for strong motivation from management.

4.1.3. Masculinity

The masculinity dimension scores were low in Lithuania (19) and Spain (42). Cultural profiles scoring low on this dimension are referred to as feminine cultures. The United States scored high (62), therefore it is considered a masculine culture. The feminine culture is one where the dominant values in society are caring for others and quality of life. Employees tend to be modest and keep a low profile; therefore, employees are oriented towards the process, and not to the results. The feminine culture also demonstrates a tendency for employees to feel awkward about giving and receiving praise, typically believing that they could have done better, or that they don't believe in or talk about their achievements. Within the masculine culture of the United States, employees tend to display and talk freely about their 'successes' and achievements in life, and tend to be assertive and ambitious. The interview data demonstrated that it was common to want to be 'a winner', and that people should 'strive to be the best they can be' and that 'the winner takes all'. The interviewees presented a 'can-do' mentality, with one participant stating:

"You always need a champion within the health system, within your organisation."

(CASE L-US, R&D representative)

The element of championship in Lithuania and Spain was not so apparent; therefore, supporting the theory of cultural dimensions.

4.1.4. Uncertainty avoidance

Uncertainty avoidance was marked high in Lithuania (65) and Spain (86) but low in the United States (46). This dimension indicates how comfortable the members of the society feel in unstructured situations. It indicates that the society of one country may react differently than

others to new, unknown and unusual situations. Cultures scoring high in this dimension, such as Lithuania and Spain, tend to try to minimise the possibility of unknown and unusual situations by applying strict behavioural laws and rules to help to take the uncertainty away. A high uncertainty avoidance shows evidence of a reluctance to take risks, high bureaucracy and an emotional reliability on rules and regulations. As respondent reported:

“The way of carrying out digital services is all about the bureaucratic regulations. Regulations, which are hard, I would say, to follow. It is not convenient for doctors.”

(CASE A-LT, doctor)

At the same time, the low level of uncertainty avoidance in the United States suggests that Americans do not require a lot of rules and are less emotionally expressive than people in higher-scoring cultures, and that they have a fair degree of acceptance of new ideas. This seemed to be justified by the data we observed, as one participant stated:

“All of those other things – legal, regulatory, licensure, cost, changing people’s behaviour – those are all real barriers, but I think that those would be more quickly addressed if we got paid to do that.”

(CASE L-US, manager)

4.1.5. Long-term orientation

The long-term orientation scores were high in Lithuania (82) but low in the United States (26) and Spain (48). In other words, Lithuanian culture is long-term oriented, while the cultures of the United States and Spain are short-term oriented. This dimension describes how society connects with the past while dealing with current and future challenges. Long-term oriented countries, such as Lithuania, tend to believe that important things in life will occur in the future, and the society is very pragmatic, understanding that good and bad things or situations depend on the context and the time. Business success is also measured on a long-term basis, and it is embedded in the culture to react to changes only when there is no other option left. The respondents reported that digital healthcare requires time, and that it can be fully implemented only in the future; for instance, one participant quoted:

“Telemedicine is certainly an area that you will not change with a generation.”

(CASE B-LT, start-up representative)

Short-term oriented societies, like the United States and Spain, tend to live in the moment, and believe that most important life events are happening now, not in the future. Business success is measured on a short-term basis, which drives individuals to strive for quick results within the work place.

4.1.6. Indulgence

The indulgence dimension scores were low in Lithuania (16) and Spain (44), but high in the United States (68). Low indulgence societies tend to be restrained. Such societies control the gratification of needs, and individuals are less likely to remember good emotions and tend to value leisure time less. Low indulgence within the interviews appeared through the trends displayed towards cynicism and pessimism, and regrets about the quality of IT systems and the increased workload. Such cultures, specifically, Lithuanian culture, tend not to place much emphasis on leisure time.

Conversely, the United States scored high on this dimension. The culture in the United States is more indulgent. The society allows a relatively free gratification of natural human desires related to enjoying life, and consequently, a larger number of people declare that they are happy than in low indulgence cultures. The society values leisure time and remembers positive emotions. Also, the individuals in such societies are proud of their achievements, as demonstrated during the interviews,

with one participant stating:

“Work hard and play hard attitude, we have a lot of experience with our patients and our patients are all very happy with telemedicine services.”

(CASE G-US, start-up representative)

4.2. Manifestation of the dynamic capabilities of digital healthcare services providers

Table 2 illustrates that the dynamic capabilities of healthcare providers tend to be strong when it comes to environment scanning. However, when it comes to opportunity selection, employee engagement and the commercialisation of innovation, their dynamic capabilities are weak to moderate, with the exception of the United States and Lithuania in our study, where employee engagement in digital healthcare services performance was strong. Besides, strong organisational learning capabilities were observed in the cases of the United States and Spain. Next, we provide an analysis of each dynamic capability and compare the results across the selected countries.

4.2.1. Environment scanning capabilities

The results of the study show that the environment scanning capability was strong among all the participants. The study findings demonstrate that this was the only capability that was equally deployed and that the participants were well aware of the rapidly changing digital healthcare environment. To be more precise, the interviewees could assess the global trends in advanced technology and demonstrate knowledge not only about the existing digital healthcare solutions in a closed environment but also about the solutions available elsewhere, i.e. in other countries. The data show that assessment of the global trends in healthcare services and the advancement of digital technologies was performed not occasionally, but rather on a regular basis, and the interviewees tended to attend conferences, meetings and other types of gatherings with an intention to find out about the latest digital healthcare services innovations, with one participant admitting:

“going to a couple of conferences throughout the year to see what type of new things are coming up in digital healthcare services”.

(CASE H-US, manager - 1)

The participants’ environment scanning capabilities were also enhanced by the initiatives of many of those interviewed to collaborate in large national and international networks in order to access outside knowledge related to advanced technologies and available solutions. For instance, a Lithuanian case illustrated ongoing collaboration with counterparts in Scandinavia. More country-level collaborations were also observed in the cases of the United States and Spain. Besides, collaboration with universities and other healthcare organisations plays an important role in environment scanning. Other healthcare organisations can provide evidence of the efficacy of advanced healthcare solutions, and real-life practice can provide vital evidence to help establish, for example, centres of excellence or to facilitate the adoption of digital healthcare solutions.

The study highlights how environment scanning is not limited to a search for outside knowledge, but is also focused on the assessment of the patient experience and the emerging patient needs. For instance, the need to receive patient feedback on digital healthcare services was addressed within all cases. The following quote well illustrates the environment scanning capabilities, which were strong among all the participants:

“I, as a department head, always say, for me the vast majority of information comes from the patients, and from the doctors and then we, the department heads, organise the information and send it to

the administration. The administration sends this information even further to the ministry level.”
(CASE A-LT, doctor-1)

4.2.2. Opportunity selection capabilities

Opportunity selection capabilities were weak within the Lithuanian cases, but moderate in both the cases of the United States and Spain. Despite a high awareness of the need for changes in the digital healthcare services environment, there is generally a lack of bold action towards the deployment of digital health services. In the case of Lithuania, there was a lack of initiative shown by the healthcare providers' managers to initiate and develop digital healthcare services. In addition, there was no encouragement from management in any instance in any of the cases when a certain level of failure was possible while deploying new experimental digital healthcare services. Different situations were reported in the United States and Spain. There, some actions were directed towards introducing advanced technologies, and towards finding new opportunities and prospective ideas. Furthermore, the implementation of digital healthcare services can occur as a result of evidence from good practice within other departments or other healthcare institutions. The need for such evidence functioned as an external push for the implementation of digital healthcare services within the observed cases in the United States and Spain:

“It started as a clinical trial... to see if telemedicine could be useful in heart failure. From there, [there] was a randomised study [that] showed improved prognosis, less associated costs, and the hospital agreed to adopt it as part of routine practice.”

(CASE M-ES, R&D representative)

Despite some bold actions identified in order to introduce advanced technologies within the United States and Spain, the interview data showed that initiatives to introduce new digital healthcare services were less encouraged by managers when such an innovation was considered risky. Management tend not to want to encourage experimental services if there is a possibility of their failure. Digital healthcare services are likely to be implemented in their daily routines only when their operation can be trusted, with one participant quoting:

“Hospitals do not rush to install the newest technologies unless they are efficient and worth it.”

(CASE G-US, doctor)

4.2.3. Employee engagement capabilities

Employee engagement capabilities were strong within the Lithuanian and United States cases, but identified as moderate within the data sample from Spain. While analysing employee engagement capabilities, several themes emerged, e.g. how keen employees are to introduce innovative ideas, whether they are encouraged to join digital healthcare services development, and whether they are inclined to invest their own time in to the initiatives. In the case of Lithuania and the United States, the interviews showed that staff tend to be the main initiators of digital healthcare solutions, and they actively participate in the design and development of digital healthcare services, besides, investing a lot of their own time in it. The Lithuanian data sample even demonstrated that staff investing their own personal time and personal enthusiasm are strong drivers of digital healthcare solutions, with one participant quoting:

“Everything else [telehealth programme] happens simply on a voluntary basis at the same time alongside all other work... These are not extra salaries for the people [...] everything is done because of initiative and enthusiasm.”

(CASE A-LT, manager)

Although the Spanish data sample didn't allow the identification of healthcare organisation's staff as being the main initiators of healthcare solutions, the managers identified certain weak links:

“health and medical personnel have to change... [now] we have a minimum knowledge of what the new technology [is] which we can provide.”

(CASE P-ES, manager-1)

The study highlighted that the staff often propose innovative ideas and often take the initiative to seek European Commission (EC) projects to participate in, but the study provided evidence that this tends to happen with a push from management. The study did not find that staff are keen to invest a lot of their own time in the development of digital healthcare services. The devotion of one's own time for services development was evident, however, within the Lithuanian and United States data.

4.2.4. Commercialisation of innovation capabilities

The commercialisation of innovation capabilities was found to be weak within Lithuanian healthcare providers and moderate in both the United States and Spanish cases. In the Lithuanian cases, the only dominant activity towards the creation of new services was through acquiring services from other organisations, and healthcare organisations tended not to develop digital healthcare solutions in-house. The United States and Spanish cases demonstrated that digital health solutions and services tended to develop with the aim of achieving a financial return, and as such, their efforts in this area were directed towards economically viable products. Some digital healthcare services were also directed towards scale up within the country, for instance, one participant stated:

“We introduced diabetes remote monitoring and that started as a small pilot in Colorado and the people really wanted it. So then it was decided to expand to Southern California and to figure out what's the best way to integrate it with our medical records. Now the telehealth program is going on in a fully integrated capacity for about year and there are 21,000 members using remote monitoring for diabetes. We are also doing it for blood pressure. Next area to go to is weight management.”

(CASE I-US, manager)

However, there are several challenges to be overcome for the commercialisation of innovation. Specifically, within the healthcare system of the United States and similarly in Lithuania, digital healthcare services are faced with a lack of compensation mechanisms; for instance, one participant stated:

“One of the primary barriers is reimbursement in the US healthcare system... They're [telehealth] often considered supplemental rather than substitute.”

(CASE G-US, manager)

Meanwhile, the participants from Spain mentioned that the main limitation for scaling is that the performance of digital healthcare services are not always at a satisfactory quality level.

4.2.5. Organisational learning capabilities

The organisational learning capabilities demonstrated in the Lithuanian cases were moderate, while they were found to be strong in the United States and Spain. Themes such as knowledge sharing across the institution and the continuous learning of employees, the ability of management to orchestrate changes and to reconfigure and recombine the organisation's structure or assets emerged. The Lithuanian cases allowed us to conclude that knowledge sharing across the healthcare provider organisation and the continuous learning of employees were

valued and such activities were strong. However, the ability of the management of the healthcare providers to orchestrate changes, and to reconfigure and recombine organisational design and assets was identified as weak. Therefore, the lack of strong leadership and change management competence was mentioned in all six cases.

Results show that organisational learning was strong within the United States and Spanish cases, for instance, with one participant stating:

“The telemedicine program offers options to follow the continuum of care, not just about treatment in the acute phase, but as I have already mentioned, the doctor tracks the patient during the stay in the hospital and outside the hospital. The programme also offers information and training for professionals through this tool of telemedicine in order to improve internal communication between services, between different hospitals for patient transfers or decision-making.”

(CASE O-ES, manager-2)

The recombination and reorganisation of the organisational design and assets are seen as positive actions for those seeking to implement digital healthcare services; for instance, the management of the healthcare providers in the United States and Spain tended to listen to what the needs are and they were keen to find technological solutions, as one participant stated:

“Management listen to what the needs are for digital healthcare and then help the staff with the appropriate technology.”

(CASE G-US, manager-1)

In addition, both cases illustrate that the continuous learning of employees is valued, and that various forms of training often take place.

4.3. Value-based performance of digital healthcare services

The case study results suggest that value-based performance of digital healthcare services in Lithuania was only basic to moderate, while it was moderate in Spain, and moderate to advance in the United States. Value-based performance of digital healthcare services was assessed via evaluation of information and communication channels used, services deployed and embeddedness at the country-wide level. The results of the United States and Spain demonstrated similarities in services deployed and embeddedness at the country-wide level. The results from Lithuanian interviews did not coincide with the results of the United States and Spain in any of the three categories. Next, we analyse the separate components of the specific value-based performance for every country under the evaluation, together with providing some quotations from the interviews.

4.3.1. Information and communication channels used for digital healthcare services

The results show that the information and communication channels used to deliver digital healthcare were basic in the cases from Lithuania, moderate in Spain and advanced in the United States. It was revealed that the information and communication channels in all three countries ranged from mobile phones, tablets and personal computers to additional functionality within organisations' websites, specialised applications and platforms. All the interviewees from the six cases in Lithuania reported that the highest priority is given to phone and video consultations, although additional functionality is added in the healthcare providers' websites, which includes the ability to upload and transmit patient data. Digital health monitoring platforms, wearable devices and specialised mobile applications are typically not deployed by healthcare providers in Lithuania. In Spain, digital healthcare services include a variety of technological solutions, from phone and video consultations, to additional website functionalities, digital healthcare platforms,

mobile applications and wearable devices. However, the collected data suggested that the biggest emphasis so far has been on the phone or tablet for performing video consultations and in some cases the use of wearable devices, as one participant stated:

“We do not use any rare technologies that you do not have at home. In fact, to have a mobile phone is enough. Patient can enter the weight and pulse measures. We do not need a different technology. What happens is that the patient only needs to have system installed to his device, but the device can be any that the patient uses every day.”

(CASE M-ES, R&D representative)

The data sample from the United States revealed that the United States utilised the broadest set of information and communication channels compared to Lithuania and Spain. The cases from the United States revealed that doctors and patients regularly use digital health platforms, mobile applications and wearable devices to collect data and to support virtual visits to the doctors. The major healthcare providers in the United States are constantly looking for healthcare services innovations based on advanced technologies. The incorporation of additional functionality via digital healthcare platforms and mobile applications is seen as a positive tendency to improve healthcare quality, accessibility and functionality.

4.3.2. Types of digital healthcare services deployed

The study spotlighted that digital healthcare services can be perceived as advanced in the Lithuanian cases, and moderate within the cases of the United States and Spain. In all three countries the dominant digital healthcare services included phone and video consultations to patients and doctors, and remote patient management. In addition, in Lithuania National Electronic Health Records (EHR) offers remote medication prescription services that are used by all public healthcare providers. Centralised at country level, paperless and fully functioning remote medication prescription services that are offered by Lithuanian healthcare providers, were rather weak in the United States and Spain. We consider this particular service as major advantage of Lithuanian digital healthcare services in comparison to other two countries.

The remote patient management services in Lithuania were offered in an asynchronous way, meaning that health data isn't analysed in a real-time and patients needed to visit healthcare providers for final decision and treatment. Digital healthcare services deployed within the United States were similar to those, offered in Lithuania. It included phone and video consultations to patients and doctors. Additionally, it included such services as remote patient monitoring, but with the elements of synchronous data management. Results demonstrate, that synchronous health data management, that is evaluated in a real-time, gains more and more attention within healthcare organizations of the United States. It provides better opportunities to timely react to disease treatments. Besides the mentioned services, we observed that healthcare providers of the United States offered self-administered questionnaire-based initial diagnostics, that were available through organizations websites. Such services were not offered in the organizations of Lithuania or Spain.

Services deployed in Spanish healthcare providers also ranged from phone and video consultations to remote patient management with elements of synchronous data collection and evaluation.

“We have made a system that allows virtual consulting for the family doctor who is consulting a patient in the primary care center <...> That mechanism we have assembled also serves as a specialist to specialist consultation among different services.”

(CASE R-ES, manager)

Real time health data acquisition that is a part of synchronous health data management also gains a lot of attention within the Spanish cases.

4.3.3. *Embeddedness of the healthcare services on a country-wide level*

During the analysis of the case study results, several themes emerged that can help to understand the embeddedness of the digital healthcare services on a country-wide level. First, there were differences identified among the analysed cases when assessing where the initiatives for digital healthcare services come from, as well as what was the continuation status of such initiatives. Second, we have investigated whether there is country-wide Electronic Health Records (EHR) system.

The embeddedness of digital healthcare services within the Lithuanian cases was only basic, while it was classed as moderate in both the United States and Spain. In Lithuania, the embeddedness of the healthcare services was rated as basic because the digital healthcare programmes were mostly project-based with a limited duration and there were no plans for the further development of such services after the projects were due to finish. Although some hurdles in setting digital healthcare services are detected, Lithuania nevertheless possesses a fully operating, country-wide EHR system, which is critical to all advanced digital healthcare services.

The embeddedness of digital healthcare services in the United States was ranked as moderate, because the electronic health records system comes from the healthcare providers rather than being a country-wide level initiative. It is important to mention that in the United States the biggest challenge in the provision of digital healthcare services is the unsolved issue of reimbursement, despite continuous efforts to prove that digital healthcare services are effective for enhancing healthcare quality, patient satisfaction, accessibility, and cutting the costs of the healthcare services. As one participant stated:

"The relation between the price and efficiency is the biggest difficulty in local hospitals because in America's healthcare system insurance companies rely on that a lot."

(CASE G-US, doctor)

The embeddedness of digital healthcare services in the Spanish cases was also considered moderate because initiatives to implement digital healthcare services often start as project- or experiment-based services without an intention towards their continuation to the organisational or country-wide level. The interviewees reported that they often engage in projects that are funded by the European Commission. These projects are always temporary, but if they prove beneficial for the healthcare organisation, they tend to spread within an organisation or even across the different healthcare organisations, with one participant mentioning an example:

"This system has been applied starting in pulmonology and has spread to other areas and now in the areas of neurology, cardiology, psychiatry, endocrinology and some more."

(CASE R-ES, doctor-1)

4.4. *The role of country's cultural dimensions and dynamic capabilities in value-based performance of digital healthcare services*

According to Hofstede's Cultural Dimensions' model (see Figure 1), cultural profiles of Lithuania, the United States and Spain are unique and distinct. The results suggest that the cultural profile of the United States in our study is more favourable for the manifestation of stronger dynamic capabilities. The environment scanning capabilities were strong in all countries. However, the results of the United States show stronger opportunity selection, employee engagement, commercialisation of innovation and organisational learning capabilities, which led to the better digital healthcare performance results in the country.

The results also suggest that value-based performance of digital healthcare services is more expressed under the culture profile of the United States (see also Table 2). The services deployed and embeddedness at the country-wide level in the United States have demonstrated

similar results to Spain, but information and communication channels used were identified as more advanced in comparison to Spain and have led to better results of value-based performance of digital healthcare services among the three countries.

Notably, the results suggest that the stronger manifestation of dynamic capabilities are observed in the country results, where more advanced value-based performance of digital healthcare services is present. The moderate manifestation of dynamic capabilities led to basic to moderate level of value-based performance of digital healthcare services, whereas strong manifestation of dynamic capabilities in the results of the United States have led to moderate to advanced value-based performance of digital healthcare services. We assume that dynamic capabilities aid leaders to orchestrate strategic change and advance the value-based healthcare services of the organisation. As illustrated by one of the interviewees in the United States, it is essential to fully engage in the process of digital healthcare implementation as well as to show the lead in order to contribute to value-based performance of digital healthcare services:

"Even if a clinical program, doesn't look like it's going to work, if you have a good champion it's more likely to work than a great idea that will save patients and money, but if there's no champion or clinical leader then it's going to fail."

(CASE H-US, manager)

Therefore, the results demonstrate that the combination of national culture dimensions such as low-scoring power distance, uncertainty avoidance and long-term orientation and high-scoring dimensions of individualism, masculinity and indulgence that defines national culture of the United States is the context in which dynamic capabilities grow stronger and lead to better value-based digital healthcare performance.

5. Discussion and conclusions

Our findings illustrate that cultural dimensions can be regarded as antecedents of dynamic capabilities and thus affect the way healthcare providers handle digital healthcare services development and deployment. The distinct cultural profiles of Lithuania, the United States and Spain relate to the behavioural tendencies and capabilities of the healthcare providers in those countries.

Previous scientific literature (Erumban & de Jong, 2006; Tekic & Tekic, 2021; Pérez-Cornejo et al., 2021) provides empirical evidence about the relationship between distinctive cultural profiles and innovation performance; for instance, how low individualism, low masculinity, low power distance and low uncertainty avoidance can intensify the positive relationship between corporate social performance and corporate reputation (Pérez-Cornejo et al., 2021). Other research studies have highlighted how Hofstede's dimensions are important in influencing the adoption of information communication technology, with the power distance and uncertainty avoidance dimensions seemingly the most essential. Therefore, we built our research on the assumption from the previous scientific literature that a single cultural dimension cannot relate to the performance on its own, but can do so only in combination with other dimensions within a country's cultural profile (Tekic & Tekic, 2021).

On the side of the dynamic capabilities' framework, there are a number of studies providing interlinks among dynamic capabilities with firm-level performance, financial performance and firm survival or growth (Helfat et al., 2007). Some studies even suggest that dynamic capabilities can enhance a variety of domain-specific outcomes (Zollo & Singh, 2004), and therefore the novelty of this research comes from the fact that dynamic capabilities are evaluated in the relatively new digital healthcare setting and are related to increased value-based digital healthcare performance; albeit evidence of where the dynamic capabilities come from is limited, specifically in the healthcare setting (Felin & Foss, 2005). However, it is clear that the formation of dynamic

capabilities “do not occur in a vacuum” (Shilke et al., 2018), and therefore the interlinks with the external environment, specifically to a country’s cultural profile, are important. Such a focus allows researchers to elaborate deeper on the topic and provide evidence on “how organisations can envision and affect change [...] despite the environmental pressures that structure their identities” (Shilke et al., 2018).

The phenomenon under investigation here is complex, and therefore, for the purpose of our analysis, we first reduced the complexity of the cultural profiles of the countries assessed. Only two extreme values of cultural dimensions – the lowest and the highest (extreme dimensions) – were assigned to each country. Figure 2 presents only those country dimensions that scored the lowest or highest among all three countries. For instance, the scores for the masculinity dimension were 19 for Lithuania, 42 for Spain and 62 for the United States; therefore, in Figure 2, we present only the highest and lowest dimension measure: the low masculinity dimension was assigned to Lithuania and high masculinity to the United States, while Spain was not assigned a masculinity dimension in this figure. Such modelling allows identifying the most extreme distinctions between the cultural dimensions and profiles.

We can conclude that when healthcare providers operate in a cultural environment that has low masculinity, a high long-term orientation and low indulgence as extreme values of the cultural dimensions across the three compared countries, it would more likely opt for low-risk, thrifty and adaptive strategies. In this case, a strong external push would be required (e.g. instruction from the ministry or high competition in the market) to introduce radical innovations within the organisation. Consequently, dynamic capabilities related to opportunity selection and the commercialisation of innovation are suppressed and underdeveloped. In turn, the value-based digital healthcare performance would only achieve a basic to moderate level. Figure 2 shows the links between the three concepts for all the tested countries.

Conversely, a cultural profile based on the combination of the low dimensions of power distance, uncertainty avoidance and long-term orientation and high dimensions of individualism, masculinity and indulgence seems to foster the manifestation of dynamic capabilities, specifically strong environment scanning, employee engagement and organisational learning. The combination of such cultural dimensions

forms an assertive, risk-tolerant, positive and normative cultural profile. Such a cultural profile tends to foster not only environment scanning and employee engagement but also the organisational learning capabilities that are a key part of supporting and promoting opportunity deployment. In turn, we observed a more advanced performance of digital healthcare services. So far, scholars have already proven that dynamic capabilities have an impact on the performance of an organisation; however, our study highlighted how dynamic capabilities can also be responsible for the deployment of selected opportunities and, how they make a difference in performance. Thus, although environment scanning capabilities are significant, it is not sufficient dynamic capabilities for ensuring the advanced performance of an organisation.

Based on the case-study results, we identified which capabilities could be strengthened in order to advance digital healthcare performance. First, such performance could be strengthened by encouraging a leadership style that is more oriented towards risk tolerance. Higher risk tolerance had the potential to strengthen opportunity selection capabilities within all the analysed cases. Specifically, within the Lithuanian cases, management should support and encourage staff to take the initiative in the search for and deployment of appropriate digital healthcare solutions.

Second, employee engagement capability can be strengthened by allowing healthcare staff to devote more of their own time to service initiation or deployment. However, such changes might require a reorganisation of working schedules and possibly incentives, such as monetary rewards. This study shows that employee engagement is important when introducing new, digital technologies, and that currently, such engagement often isn’t rewarded enough for it to be a motivating factor.

The weak commercialisation capabilities demonstrated in the Lithuanian cases potentially can be explained by considering the societal purpose of healthcare services delivery. This is focused on serving the community rather than investigating some unknown field of new and innovative healthcare solutions. The United States and Spain have the greatest potential to commercialise their digital healthcare solutions, but they still face certain barriers. In particular in the United States, its stronger manifestation of commercialisation capabilities might be alleviated by changes in its reimbursement systems. Data from Spanish cases

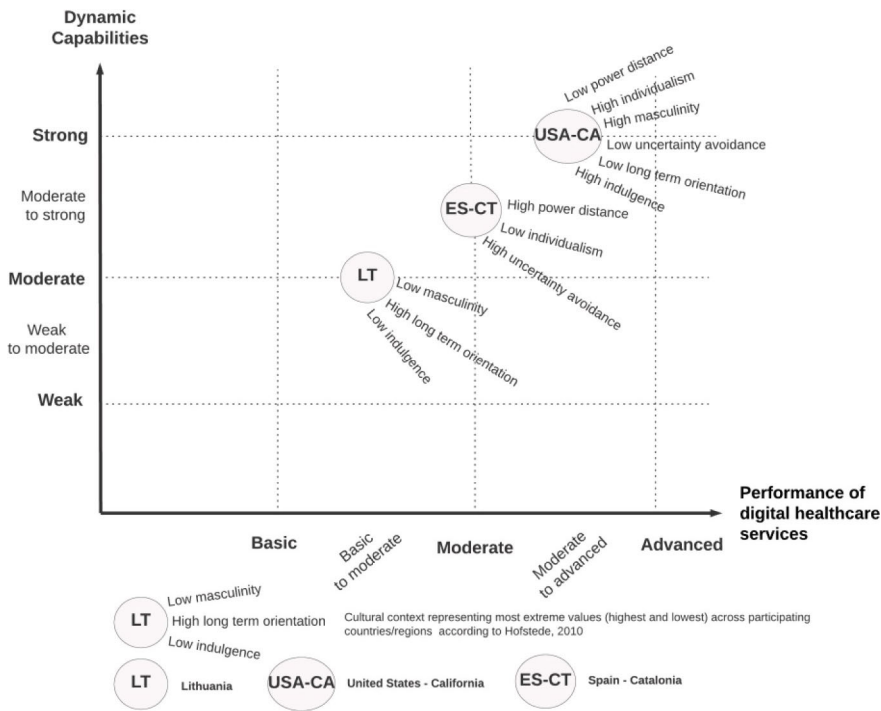


Figure 2. Visualisation of the links between dynamic capabilities, performance and cultural dimensions

suggests that this capability could be strengthened by improving the performance of digital healthcare solutions. Specifically, the evidence of well-functioning solutions seems to help to scale solutions across other healthcare institutions.

As a multiple case study, this work provides interesting insights on the role of culture in developing dynamic capabilities and in assuring advanced health services performance; yet there is a need for further investigation of the role of culture and other contextual factors as an antecedent (Schilke et al., 2018) of dynamic capabilities.

5.1. Managerial implications

The study investigated the role of the cultural dimensions and dynamic capabilities to determine under what cultural profile, which dynamic capabilities need to be strengthened or built to induce positive changes towards improving value-based healthcare performance. The cultural profile of a country or organisation is not something that can be easily changed; rather, it has to be understood. Therefore, the managerial implications of the study to healthcare providers are threefold. First, the research results can aid managers of the healthcare providers to understand the role of national culture in developing value-based digital healthcare services. For instance, an environment of low-scoring power distance, uncertainty avoidance, and long-term orientation dimensions, along with high-scoring dimensions of individualism, masculinity and indulgence, is more favourable for the advancement of digital healthcare services in organisations. This cultural profile fosters an environment where employees feel that they have certain amount of decision-making power, can display initiatives, are oriented towards the results, but not the process, accept new ideas, strive for quick results and are proud of the achieved performance. Also, the environment where a certain level of risk and experimentation is accepted, adds to the more advanced performance of value-based digital healthcare.

Second, the study informs healthcare organisation managers about the dynamic capabilities concept in a more operational way. Results suggest that environment scanning capability is mandatory but not sufficient to strengthen the value-based performance of digital healthcare services. Employee engagement and organisational learning capabilities are essential. Value-based performance of digital healthcare services is more advanced when employees are closely involved in the process of new digital service initiation and deployment. Cultural dimensions related with low-scoring power distance, uncertainty avoidance, and long-term orientation dimensions, along with high-scoring dimensions of individualism, masculinity and indulgence, are favourable to develop employee engagement and organisational learning dynamic capabilities.

Third, this study also informs healthcare organisation management about the term value-based digital healthcare performance in a broader sense. We suggest that economic value is not the only measure of value-based digital healthcare. Other elements, such as value to patients, doctors and the population, are important. Thus, to advance in digital healthcare services healthcare providers need to pay attention to all value-based healthcare performance elements especially when introducing new information and communication channels and strengthening the embeddedness of the services at the organisation or country-wide level. Furthermore, strong dynamic capabilities of the healthcare providers can aid with the complex strategic change while introducing value-based digital healthcare services.

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