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Ambidextrous Policy: Cross-Country Comparison of Policies for the Digitalization of Healthcare

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Abstract: Healthcare constitutes a fundamental challenge in the ongoing digitalization of society, partly due to its complex, integrative and critical nature. With healthcare regulated through national policies, we posit that the said policies need to afford a parallel facilitation of exploitation and exploration. This study explores how healthcare policies in Sweden and Uganda are positioned in terms of ambidextrous balance. Through content analysis of select national policies, the study finds that policies regarding IT are identical in terms of ambidextrous balance, whereas policies regarding digital healthcare/eGovernment display a difference, with Uganda being more focused on exploration than Sweden. For the general healthcare policies, Uganda's focus is on exploitation, while Sweden has a mix of exploitation and exploration. We discuss the implications of different balancing points to the continued digitalization of healthcare, and present our conclusions in terms of propositions for the future study of ambidextrous policy for the digitalization of healthcare.

Keywords: Policy, Digital healthcare, Ambidexterity

1. Introduction

The digitalization of society involves a dual aspiration of increased efficiency on the one side, and, new operating models and means of value-creation on the other (Nambisan et al., 2017). As such, digitalization is laden with connotations from both operational excellence, disruption and innovation. This dual perspective on digitalization is core to much of the extant literature on digitalization (Nardi and Ekbia, 2017). In viewing digitalization as the parallel strive for exploitation and exploration, there is a growing body of literature utilizing findings from the field of organizational ambidexterity to study digital initiatives (Haffke et al., 2017). Organizational ambidexterity, here understood as the organization's ability of parallel attainment of exploitation and exploration (March, 1991), mirrors the dual characteristics of digitalization.

As societies increase their digital intensity, few sectors are left unaffected. This holds true also for healthcare, where digitalization has been advocated as a means for enhancing quality while simultaneously reducing cost (Locatelli et al., 2012). Given that healthcare constitutes one of the most complex and critical practices in society (Nilsson and Sandoff, 2015), it is often highly regulated

through national policies (Ayimbillah Atinga et al., 2011). In this study, we regard policies as a collection of principles, rules, and guidelines formulated or adopted by an organization to reach its long-term goals, typically published in a booklet or another form that is widely accessible (Hill, 1997). Policy designs have been recognized as a field of study since the 1950s, though in the early 2000s there was still a dearth of research available (Schneider and Sidney, 2009). Recent findings highlight the necessity for more intently studying policies related with digitalization, such as digital government (Greve, 2015). By bridging the fields of policy and organizational ambidexterity, the objective of this study is to contribute to the emerging literature on digital policies, through the comparison of healthcare policies of two national healthcare systems. The policies are analyzed in terms of ambidextrous balance in order to derive propositions for future studies of digital policy This study is guided by the following research question: *How can the study of policy for the digitalization of healthcare be informed through an organizational ambidexterity perspective?*

This paper is organized accordingly: After the introduction, the precursory findings are presented, along with the theoretical framing. This is followed by a presentation of the results. Then, the discussion of the findings by relating them to previous studies in order to theorize on the role of ambidextrous policy in digitalization is done. Finally, the implications and limitations of the study are presented along with calls for new research.

2. Precursory Findings and Theoretical Framing

2.1. Digitalization and the Need for Ambidexterity

There have been numerous attempts at describing the evolution of digitalization. In early work by (Zuboff, 1988) the technology is seen to evolve from automation through information to transformation. In more recent work, Nardi and Ekbia (2017) take a socio-materiality informed perspective and describe the shift in agency, from automation, to augmentation to heteromation.

As these two examples show, digitalization and digital technologies are laden with both evolutionary and revolutionary characteristics. Digitalization has two parallel consequences. First there is the automation of menial labour, with the intent of increasing efficiency through economies of scale. Second, there is the introduction of new operating and business models, where digital innovations bring new opportunities for value creation and revenue generation through economies of scope.

With digitalization comprised of two parallel activities (exploitation and exploration), it also comes with the necessity for organizations to be able to handle both activities at the same time. Previous research has referred to this capability as organizational ambidexterity (Junni et al., 2013), and there are numerous studies of both its impact on performance (Raisch and Birkinshaw, 2008) and how to achieve it (Janssen and Van Der Voort, 2016).

2.2. Studying Policy in the Digitalization of Healthcare

Organizations in nearly all sectors are aware that they need to adapt to the changes that come from time to time as a result of digital innovations (Linders, 2012). In as much as some of these changes

can be disruptive, the ability of many of the organizations to adapt is affected by institutional arrangements and patterns of decision making and governance. Governance thus requires that governments foresee and develop sound policies to help in the management of the new innovations.

2.3. Investigatory Framework

Core to this study is the conceptualization of ambidexterity as activities directed towards exploitation or exploration (March, 1991). In line with (Benner and Tushman, 2003), we regard exploitation as activities related to the exploiting of existing opportunities to achieve efficiency. Exploration, is regarded as activities related to the exploring of new opportunities towards innovation, whereby ambidexterity becomes the capability of dynamically balancing parallel activities of efficiency and innovation. Following Luger et al. (2018) and Zimmermann et al. (2018), this implies that we regard ambidexterity as a continuous process rather than a steady state. Through this dynamic perspective, balance is not static but continuously evolving. We develop a method for assessing the current ambidextrous balancing point from secondary material such as policy documents supported by the findings from (Uotila et al., 2009) that content analysis holds great potential for studies of ambidexterity.

3. Method

The study was done in two settings with varying levels of dynamism in their institutional environments. The rationale for this selection was related to the underlying assumption within organizational ambidexterity that the level of dynamism in the environment impacts the optimal ambidextrous balancing point (Raisch and Birkinshaw, 2008), with high dynamism being linked to a higher emphasis on exploration than in lower levels of dynamism. Dess and Beard (1984) define environmental dynamism as the rate of change and the degree of instability of the environment. Sweden is deemed as a developed economy with a longer track-record of automation and its larger installed digital base coupled with a stable political and geo political environment. As such Sweden was selected as an example of a country with lower level of institutional dynamism. Uganda is deemed as a low and middle income (LMIC) country with a low installed digital base and rather unstable in regard to the political and geo-political environment. As such Uganda was selected as an example of a country with higher level of institutional dynamism.

With the intent of studying existing policies, the data collected in this study was secondary in the form of existing policy documents at the national level in each country. In both settings, the policies were searched and downloaded from the websites of the ministries (or bodies) of Health and IT in the respective countries. An inductive categorization of the policy documents was conducted. This resulted in three categories namely IT, Digital healthcare/eGovernment and Healthcare (general). All collected documents in Sweden were in Swedish, whereas the documents in Uganda where in English. A total of 26 (16 versus 10 in Sweden and Uganda resp.) policy documents were collected, displaying an expected difference in the level of policy formalization in the two settings.

Following (Uotila et al., 2009) and their recommendation for future research into ambidexterity, we used the selected policy documents as a basis for calculating the ambidextrous balance through

content analysis. On the basis of March (1991) and Uotila et al (2009), we use the associated words (and search strings). Using the search strings, we identified the number of word counts associated with exploitation versus exploration in each policy document in order to arrive at a percentage in terms of balance. In other words, identifying 10 occurrences of exploration and 30 of exploitation in a document meant the balance was calculated to 25% exploration and 75% exploitation. We also calculated the mean balance in each category, as well as the total for each country. The frequency analysis was done through the qualitative analysis software Nvivo.

In terms of validity, the use of March (1991) and his explicit identification of words associated with exploration vs exploitation safeguards this. Keeping as close to the possible foundational source of exploration and exploitation was important, with the only change being the aforementioned equivalence of efficiency vs innovation with exploitation vs exploration (Xue et al., 2012). As noted by (Krippendorff, 1980), the issue of semantical validity is also central when conducting content analysis. In terms of reliability, there have been numerous examples of studies that have used coding and scoring of words with reliable results in the past (Tetlock et al., 2008), and hence these deem the method to be reliable. As a final step in the analysis, propositions were derived logically from our findings. This study is utilized as a means to identify how organizational ambidexterity can inform the study of policies for the digitalization of healthcare, and hence the propositions are seen as the main contribution.

4. Results

4.1. Sweden: Exploitation for Exploration

The main focus in the policies related to IT, digital healthcare and healthcare (general) is that of exploitation rather than exploration (average of 81% vs 19%). Out of the three different types of policies, the policies related to IT are the ones with the highest bias toward exploitation (84%). On the basis of this, we conclude that the area of IT is still primarily focused on exploitation rather than exploration, whereas the other policy areas are more open to address issues of exploration. Despite this, we can see that ambidextrous balance of Swedish policy is primarily geared towards exploitation.

4.2. Uganda: Exploration for Exploitation

The main focus in the policies related to IT, digital healthcare and healthcare (general) is that of exploitation rather than exploration (average of 77% vs 23%). Out of the three different categories of policies, the policies related to Healthcare are the ones with the highest bias toward exploitation (100%). On the basis of this, we conclude that the area of Healthcare is still primarily focused on exploitation rather than exploration, whereas the IT area is open to address issues of exploration and the digital healthcare focus is more on exploration. Despite this, we can see that ambidextrous balance of Ugandan policy is primarily geared towards exploitation.

4.3. Comparison

From the results, there are distinct differences between the ambidextrous balance of the two compared countries. In the Swedish setting, there is a relative alignment between the three different forms of policy. Healthcare and digital Healthcare policies are completely aligned in terms of ambidextrous balance, whereas IT policies display a somewhat higher skew toward exploitation rather than exploration. In the Ugandan setting, there is no sign of alignment between the three forms of policy. In terms of the general healthcare policies, these are completely skewed towards exploitation (100%), whereas the digital healthcare policies display an almost even balance between exploitation and exploration (46% vs 54%). The IT policies are primarily focused on exploitation (81%).

5. Discussion

The discussion focuses on developing five propositions intended to guide future research into ambidextrous policy. With this study being one of the first to target policies for digitalization from an ambidextrous perspective, we believe that this is valuable for future research. Propositions are presented and not conclusions since we acknowledge the necessity for additional studies in order to falsify or prove them.

In terms of the IT policies and the identified alignment between the two settings, we see this as an effect of IT policies being subject to isomorphism. As noted by Gregory et al. (2018), there is a tendency within IT Governance practice to fall subject to mimetic behaviour. The configuration for governing IT, as well as the policies that guide the said configurations should display contextual contingencies, yet as the findings show they do not. The effect of a potential mis-alignment will become visible in the effectiveness of the IT policies. On the basis of this, the following propositions are posed for future research:

Proposition 1a: The ambidextrous balance of IT policies will display isomorphic traits between dynamic vs stable institutional environments.

Proposition 1b: There will be a difference in the effectiveness of IT policies in dynamic/stable institutional environments.

In regards to policies for Digital Healthcare/eGovernment, sharp differences are identified between the two settings. With Uganda being more focused on exploration than exploitation, Sweden is still primarily focused on exploitation. We interpret this in light of recent findings from the study of the constraining aspects of digital heritage (Rolland et al., 2018) and the phenomenon of technological leapfrogging (Steinmueller, 2001). Uganda has only recently begun an investment into a digital infrastructure for healthcare, whereas Sweden has a long tradition of digitization. Hence, there is a significant level of path-dependency involved in digital healthcare in Sweden. Uganda does not, comparatively, have a strong digital infrastructure and is hence freer to utilize emerging technologies. Thus, they will have more opportunities for leapfrogging, making exploration more relevant than exploitation. On the basis of this, the following proposition is posed for future research:

Proposition 2: Digital Healthcare/eGovernment policies in dynamic institutional environments will focus more on exploration than in stable institutional environments on account of leapfrogging.

In terms of healthcare (general), the findings showed a reverse phenomenon, where Sweden was more focused on exploration than Uganda. Uganda was completely focused on exploitation rather than exploration. This is interpreted in light of a lower level of general maturity within healthcare in Uganda than in Sweden. Sweden is ranked as one of the leading nations in the world in terms of the quality of their healthcare, and have for a long period of time been able to invest in assuring economies of scale and high levels of exploitation. Uganda, on the other hand, has not had the opportunity of consolidating its resources and achieving exploitation. Hence, the complete focus on exploitation in general healthcare policies in Uganda is deemed as a cap on exploration and risk, since reaching a sufficient level of exploitation is necessary. On the basis of this, the following propositions are posed for future research:

Proposition 3a: Healthcare policies in dynamic institutional environments will to a higher extent strive for exploitation than in stable institutional environments.

Proposition 3b: Healthcare policies in dynamic institutional environments will avoid exploration, until reaching a sufficient level of exploitation.

In addition to these propositions related to policies, we also believe that this study offers insight into general organizational ambidexterity theory. First, the findings summarized in propositions 3a and 3b indicate the relative simplistic assumption in organizational ambidexterity that the primary contingency for ambidextrous balance is environmental uncertainty (Jansen et al., 2006). According to (Peng and Lin, 2019), the higher the degree of environmental dynamism an organization faces, the more it needs to spend on exploration rather than exploitation. The findings suggest that there are threshold values for exploitation which need to be met before exploration is considered an option. This leads to the following proposition:

Proposition 4a: Optimal ambidextrous balance is not a sole function of the level of dynamism in the institutional environment.

Proposition 4b: Optimal ambidextrous balance is contingent upon the status of development in the country.

Here, we see promising signs from studies informed by the punctuated equilibrium theory (Gregory et al., 2018), where an organization is expected to shift balance between certain semi-steady states. Further research into the role of the status of economic development, and a nuancing of contingency variables for optimal balance (temporary) is hence called for.

This study has two main implications for practice. First, organizations should carefully assess the alignment of ambidexterity between their strategies and the policies governing them. Second, as noted by Zimmermann et al. (2018), the enactment of ambidexterity is done by front-line managers. Hence, managers should consider not merely the ambidextrous balance, but also the actual enactment of ambidexterity.

This study has two main implications for policy. First, if policy is supposed to facilitate digitalization and the attainment of benefits from digitalization, policies need to be designed to

facilitate the parallel activities of exploration and exploitation. On the basis of this, the method used in this study could inform future digital policy-designs for healthcare through offering a manner in which candidate policies could be analyzed before finalization and propagation. Second, given the relative level of misalignment between the different types of healthcare policies in Uganda, we believe that policy makers could benefit from analyzing existing policies in respect to their ambidextrous balance.

The study has two main limitations. First, the empirical selection of two countries such as Sweden and Uganda will invariably lead to issues of comparability. This makes the potential value of comparisons laden with limitations. Second, the elicitation of ambidextrous balance from policy documents may be regarded to contrast with the mentioned perspective on ambidexterity from Zimmermann et al. (2018). What we are able to identify in this study is merely a snap-shot of the existing balance, and the study offers no insight into the potential balancing practices present in the two settings. This will be necessary to study through more longitudinal studies of the policy documents, or through other methods.

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