Digital Change Management in healthcare organizations

Insights from Performance Context

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Abstract — **The pressure is intense in organizations to change on digital technologies triggering tools to provide competitive on customer demanding needs. The need to have, in an organization, the appropriate infrastructures for its collection, storage, processing and distribution means that an appreciable portion of the efforts of institutions and / or organizations in terms of human and financial resources. In addition to this effort, there is the organizational change that is now a nowadays concept in organizations. The primary goal of this research is to understand how digital transformation can influence the performance of healthcare organizations. The theoretical contribution of this study is to provide inputs and identify variables to lead information about the research of change management, and then particularly in change management associated to digitalization.**

Keywords - Change; Digital Technologies; digital transformation; change management, healthcare organizations.

I. Introduction

Nowadays the world is facing amazing challenges, and the most it is very important to understand and define the new technological revolution, because it is radically changing the habits, behaviors relationships and ways of working, of humanity in general. Strategic management holds that organizations change by maintaining a balance between the business and its strategy in its environment [1]. Digital transformation is a strategy that makes use of technology to maximize performance and promote improvements that are reflected in the business results [2]. It represents a change in corporate behavior and, as such, must involve human resources and generate impacts on processes on the structure of the company [3], [4]. Performance impacts organizational change by fostering a competitive advantage for strategic management [5]–[7]. Digital transformation triggers a process of change in organizations' business models and procedures [4].

II. Problem and Relevance of Theme

This study aims to measure, how can digital transformation influence the performance of healthcare organizations. The subject under study gains relevance in the sense that, in a first instance, there is a gap in the literature, particularly regarding the correlation of the various constructs, digital transformation, leadership, change management, and performance in healthcare organizations. Therefore, according to the literature review, no studies were found that were investigated the impact of the constructs on healthcare organizations. Therefore, this research will contribute to clarify this aspect. Another point that will be effectively relevant is the Inferential (quantitative) study, at an international level, namely, to be carried out with health organizations in Portugal and Brazil.

III. Objectives

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A. Overall objective

How digital transformation can influence the performance of healthcare organizations.

B. Specific objectives

- Propose a model for managing change processes when implementing digital transformation.
- To understand the impact of leadership on change processes when applying digital transformation in healthcare organizations.
- To understand whether digital transformation can increase diagnostic and surgical capacity.
- Identify the critical factors that allow leveraging performance based on IT capabilities.
- Determine and analyze dimensions found, specifically within the study populations.
- Validate the impact of leadership on the performance of organizations in the context of digital transformation.
- Validate how competitiveness can influence decision making in the technological field.
- Validate the importance of digital transformation in the strategy of health organizations.
- Quantify the technological impact on organizations, in the context of infrastructure support in the implementation of digital transformation.

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- Identify how leadership in the organizational context can play a positive and inspiring role in digital transformation.

IV. METHODOLODGY

To achieve the proposed objectives, a methodology was defined to support the research, which is divided into three study stages:

a) ***Study 1 - Bibliographic and Documentary****: A literature review was assertively conducted in November 2022, which will be based on the web of science data repository. Date ranges from 2018 to 2022 were used. Based on the filtering search throw the engine provided by WOS, TS=(Organizational change* Digital Transformation), indexing in all databases of WOS collection. The data were exported to *.txt, *.xlsx and *. RIS files, including all bibliographic info, abstracts, keywords, and cited references numbers. So, it was used the PICOS methodology. PICOS question contains the description of the research problem, the population, the context, the intervention, and the results.Then was applied an PRISMA concept analysis, selection and inclusion.*

b) ***Study 2 - Focus Group(qualitative):*** *Focus group is a research method that uses a group of individuals who are loyal and committed to your model, for evaluation, measurement, and testing. With the focus group it is possible to go deeper into the discussions and the purpose of identifying the strong and weak points that need to be worked on, throw five steps:*

1) **Recruit participants for a focus group:** It will be defined the purpose of the focus group and write the problem statement.
2) **Assign a moderator**: It will be created a list of the questions and perform the tasks deemed necessary before the meeting. Develop tactics and negotiation skills to carry out the discussion while maintaining a continuous and pleasant conversational flow.
3) **Session's management**: Focus group sessions usually last one or two hours. So, it will be necessary to schedule the date, start time and end time of the session. Record the meeting. Find and reserve a conference room, write the names of the members where they sit. Create a handout that includes a welcome note, the objectives of the focus group, and the general rules of the meeting.
4) **Develop a discussion guide:** Also, before the session, develop a guide that mentions the timeline, the main questions and what is expected of the participants, how you plan to record what happens, and how the results will be shared. The guides should be given to the participants so that they know how important it is to stick to the timelines.
5) **Present the report after having a focus group**: When you go to present, you will have two types of data, the qualitative responses to the questions you discussed in the focus group and the quantitative responses to the feedback format. Results analysis using the correct methodology, and then think about solutions to the problems you find.

c) ***Study 3 - Inferential (quantitative):*** *In this phase of the study, a descriptive-exploratory research will be applied, since its scope is to determine and analyze the dimensions found, specifically within the study populations, to validate the impact of leadership on the performance of organizations in the context of digital transformation, and simultaneously to validate how competitiveness can influence decision making in the technological field by identifying the critical factors that allow leveraging performance. So, an inquiry will be carried out.*

The survey construction focused on the following guidelines:

- *use of an ordinal scale that admits a numerical ordering of its categories, i.e. of the alternative answers establishing an order relationship between them, not being, however, possible to measure the magnitude of the differences between the categories;*
- *- anonymous and made available via email through a link to be answered by those responsible for the IS of the hospital organizations;*
- *- explained the reason for applying the survey, namely regarding the main objective of the study and who it is aimed at.*

The rating of the relevance of the proposed dimensions was based on a 7-level point Likert scale where 1 means Strongly Disagree, and 7 means Strongly Agree. Through it also tried to evaluate the importance given by respondents to each of the domains and dimensions presented. The data collected will be processed using the SPSS and SmartPLS tools.

The choice for healthcare organizations seemed to be an excellent opportunity for study because there is still little development in this area and because of the complexity and has a lack methodology and management models. This is also an opportunity to develop a proposal for a model to support change management on digital transformation. Because these organizations have strong impact on human life, applying change requires special attention from healthcare organizations top managers and technical analysis in order to maintain and improve the quality and performance expected by the specificity of their services. The health sector is extremely complex and sensitive, so in terms of digital transformation that influences process and people must be planned wisely. The operation of health institutions is based on different types, formats, and sources of information, used by several actors (health professionals and others), with diverse and specific expectations and interests. Therefore, the sources of information in hospital units are distributed, heterogeneous, vast, complex and integrate important clinical information to support hospital digital transformation processes management.

V. THEORETICAL GROUND

A. Digitalization

Digital Change Management, nowadays, is a topic in the current technological landscape. However, this theme has been around the last years, although it does not always have the same meaning. For a long time, it was part of the area of digitalization and/or translating traditional data formats so that they could be stored in digital format. Currently, digital transformation can be seen as the process of integrating technology into all aspects of organizations. This requires fundamental changes at various levels: technology, culture, contents, processes, capabilities, and operations to better take advantage of emerging technologies to become agile, more competitive and to be able to adapt quickly to market demands. Organizations need to adapt by radically transforming their processes and models consequently so they could increase their performance. The current pandemic state starting in the first quarter of year 2020, several confronted organizations with a new brand reality for which the most were not prepared to tag along.

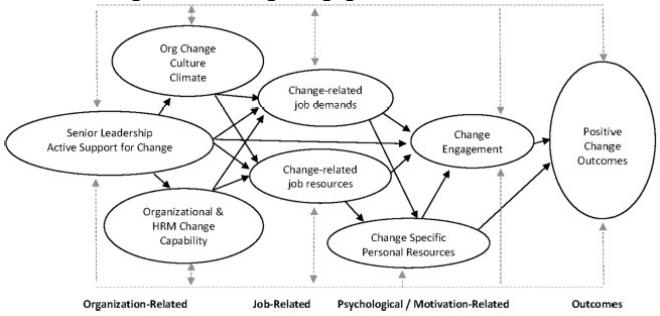
The long and successive confinements caused constraints in operations, forcing them to look for alternative ways to maintain their activity, whether reinventing their business models, redesigning their processes, or investing in new technologies to support their business processes, collaboration and telework. Effectively, shortly, organizations will be able to adapt at various levels, from the way they manage their business to the way they manage their facilities and resources [8]. According to Albrecht et al (2020), Organizations require well-designed and interconnected systems which enable to adapt and to be "macro-organizationally ready" in the ever-changing circumstances. Change focused selection, socialization, and performance management are some of the specific resources (human and financial) and organizational development responsibilities that must be managed and implemented in order to support, promote, and develop change management capabilities [6], [9]–[11]. Organizations constantly struggle to implement the initiatives triggered by change management.

Many solid strategies for successful change management and its associated impacts may be found in the literature. Although, it is still important to point out, and according to Heat & Porter (2018), Individuals appear to have a reaction (or a sequence of reactions) to the change process, and this reaction causes a disruption in their normal job routine [6]–[8], [12], [13]. This paper will explain the concept of change management as well as a model that includes change-related organizational re-architecture, change-related digital transformation, and change-related sustainability. As a result, it is claimed that change management is a theoretical and practical framework for understanding respondents' reactions to and adoption of digital transformation, which will be measured by performance. According to Nwampa & Roumani (2016) In comparison to its key competitors, organizational performance is a measurement of how successfully a company can achieve its goals and objectives. Profitability, growth, and market value are often indicators of good organization performance. As one might anticipate, much research emphasis has been spent on comprehending the causal structure of organizational performance and explaining performance differences between competitors. Even so, Ravestejin & Ongena (2019), supports it affirming that different studies find that strong information technology capabilities increase organizational performance and can be an important enabler for growth and innovation. There is a plenty and sustained literature on study theme that add value that corroborates this study constructs as well [4], [6]–[8], [14]–[16]. Performance, the materials, components and subsystems of the buildings and the requirements and criteria to be met and the means of proof that attest. The conditions that qualitatively express the characteristics that its systems must have in order to satisfy the user's requirements are considered requirements of performance, moreover, [16].

Albrecht and colleagues (2020) propose that the concept of positive energy involves the fundamental aspects of how organizations utilize resources related to changes in job demands, job-related change resources, and personal-related change resources to foster engagement with change, leading to positive outcomes in attitudes, behaviours, and performance.

Adapted from: (Albrecht et al. 2020)

Figure. 1. Change Engagement Model



The Change Engagement model is connected to the concept of organizational culture and climate. This connection leads to a sense of empowerment and team leadership orientation, who will provide solid structures to achieve organizational performance, applying the changes.

B. Change Management

According to the dynamic capability perspective, change can improve flexibility and exploit knowledge, but it can also raise coordinating financial resources and, according to the organizational inertia perspective, cause conflict. Fundamental obstacles and conflicts arise from the coexistence of paradox behaviors, architectures, and competencies (Arazmjoo e Rahmanseresht 2019). The change literature, according to the author, comprises assessments of different content models. The distinction between incremental and transformational change, or between developmental, transitional, and transformational changes, is one of the most important distinctions regarding the type of change (12). So, according to Heath and Porter (2018-2019) Change management refers to the technique of revising an organization's direction, structure, and capabilities on a regular basis to satisfy the ever-changing demands of external and internal consumers. There is a technique for expressing a change management viewpoint, namely that it is a vital organizational skill set that deals with organizations' ingrained incapacity [17]. Consolidating all the literature it can be achieved a short and solid proper definition that Change

Management is a process triggered in a certain environment, having the capability to manage strategic constant adaptation of organizations, with the aim of achieving their goals [6].

C. Digital Transformation

Digital transformations are changes and transformations that are fueled by and built based on digital technology, and it inspires changes in a variety of business elements, as well as strategies that are developed and act as transformational guidelines [9]. Within an organization, the move to big data, analytics, cloud, mobile, and social media platforms is known as digital transformation. The term "digital transformation" refers to a shift in company operations, procedures, and value generation that is based on digital technology. It is distinct from digital upgrading, which refers to the application of digital technologies to improve productivity and efficiency in an organization's business operations, digital transformation, and digitalization, which is the application of digital technologies to bring about significant changes in company operations, procedures, and value generation [8]. Through digital transformation, businesses incorporate digital technologies into many parts of their operations and involve customers in generating digital innovations [4], [8], [15], [18]. The ability to migrate developing digital transformation does not indicate traditional IT capability. According to the authors, businesses that have executed digital transformation effectively are better at making money with the resources they already have. As a result, companies that have gone through the digital transformation process may take advantage of the broad digital connections and interactions among important value chain partners [19]. Resuming Digital transformation refers to an organization's change in business models and procedures because of new technologies [4].

VI. Expected results

There are three key contributions. The first contribution that is expected from the execution of this study is effectively the creation of models, tools, and methodologies to control the changes triggered by Digital Transformation. The second contribution is to create strategic support for organizations, specifically in the healthcare industry, to improve their performance and competitiveness. And finally, it is to help manage resources (human/financial) by fostering a structured, solid, and dynamic enterprise architecture.

VII. Research Limitations

Limited Sampling: Selecting a representative sample is crucial to ensure the validity and generalizability of study results. However, in some cases, it may be difficult to recruit enough participants for the study, especially if the research is conducted in a specific healthcare organization or limited geographic region.

Limited sampling can reduce the validity of the results and the ability to generalize the findings. Due to this, it necessary to redesign and rewrite the study. Difficulty in measuring impact: Measuring the impact of digital changes in healthcare organizations can be complex, as it involves evaluating multiple outcomes at different levels. It is difficult to separate the impact of digital change from other interventions and factors that may be affecting the results. Additionally, it may be difficult to measure long-term outcomes, especially if the digital change is a recent intervention. This may limit the study's ability to fully evaluate the impact of digital change.

VIII. Future Studies

Long-term Impact: A future study could focus on the long-term impact of digital change on healthcare organizations, including the effects on patient outcomes, employee satisfaction, and financial performance. This study could track changes over several years and evaluate the sustainability of digital change initiatives. Best Practices: A study could be conducted to identify the best practices for implementing digital change in healthcare organizations. This study could explore the factors that contribute to successful implementation, such as leadership support, employee engagement, and effective communication. The study could also identify potential barriers to implementation and strategies for overcoming them. Patient Experience: A future study could focus on the impact of digital change on the patient experience, including patient satisfaction, quality of care, and patient outcomes. The study could evaluate the effectiveness of digital interventions such as telemedicine, patient portals, and mobile apps in improving the patient experience. Implementation Strategies: A study could be conducted to identify the most effective implementation strategies for digital change in healthcare organizations. The study could explore the factors that contribute to successful implementation, such as the use of change management methodologies, employee training, and stakeholder engagement. Organizational Culture: A future study could explore the role of organizational culture in the successful implementation of digital change in healthcare organizations. The study could evaluate the impact of factors such as leadership support, employee engagement, and communication on the adoption and sustainability of digital change initiatives.

Acknowledgments

This work was undertaken at ISTAR-Information Sciences and Technologies and Architecture Research Center from Iscte-Instituto Universitário de Lisboa (Univer-sity Institute of Lisbon), Portugal, and it was partially funded by the Portuguese Foundation for Science and Technology (Project "FCT UIDB/04466/2020").

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