

STAKEHOLDERS' PERCEPTION OF THE IMPORTANCE OF DIGITALIZATION IN HEALTHCARE ORGANIZATIONS

Larisa GRIGORIE PATRU

University of Craiova

ORCID: <https://orcid.org/0000-0002-6897-3381>

E-mail: grigorie_larisa@yahoo.com

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Abstract:

The study aims to identify whether healthcare organizations agree regarding using medical devices involving artificial intelligence and digital technology. Using quantitative research, we collected 123 valid questionnaires from many stakeholders of healthcare organizations (i.e., patients, doctors, nurses, and managers). The results prove that the digitalization process adds value to the decision-making process. Furthermore, the stakeholders perceive digitization as a process that directly contributes to the improvement of the management of healthcare organizations.

Keywords: healthcare, digitalization, decision-making process, stakeholders.

1. Introduction

New generations of technologists, especially digital technology, are invading all sectors of activity and professional spheres of society, including the healthcare sector. The synergy between digitization-innovation-research has become a sine-qua-non condition for the modern economy. As an effect of technology and the status of stakeholders, the decision-making process within an organization is reformed.

Healthcare organization struggles to keep its beneficiaries of medical services and gain new ones. As always, managers are focused on action and results. They must identify how they use the resources, including the technological ones, to achieve the general objective of the companies.

How digitization is managed by healthcare organizations directly affects the quality of treatment patients receive. With the Covid-19 pandemic, technology has gained strategic importance and challenged medical organizations' management to use it optimally.

Relevant for successful medical organizations will be the degree of innovation in providing medical services and their addressability by overcoming geographical, organizational, political, and sectorial boundaries. (Roberts et al. 2016). Leigh-Hunt and Markwell (2016) highlight that decision-makers need to know that decisions and actions must be taken according to the stakeholders. Car et al. (2017) place the empowerment of users of medical services as an essential target in the evolution of digital health.

Healthcare organizations should be efficient, and for this reason, it is necessary to find new ways of improving the performance of the medical act,

especially in the private medical sector (Ratia and Myllärniemi, 2018). Kala Kamdjoug et al. (2019) confirmed the hypothesis that digital technology capabilities directly impact organizational performance.

Siagian et al. (2021) demonstrate that technological capacity is one of the main factors influencing an organization's performance. Gleiß (2022) approaches digital technology from the perspective of opportunities for the business environment. It summarizes the digital benefits of value creation (business processes), value proposition (business models), and customer interaction.

Bhattacharya et al. (2023) recommend the Android applications only if these applications require permissions during their installation, and they proposed a technique based on the classification performance of a primary ensemble approach for Android malware.

2. Literature Review

Stakeholders are individuals or groups interested in an organization and can influence its outcomes. Stakeholders can support, limit or even stop changes within an organization.

Mosadeghrad et al. (2011) analyzed patients' perceptions of the quality of healthcare services and concluded that they influence the selection of a specific organization, loyalty, and recommendation to other patients.

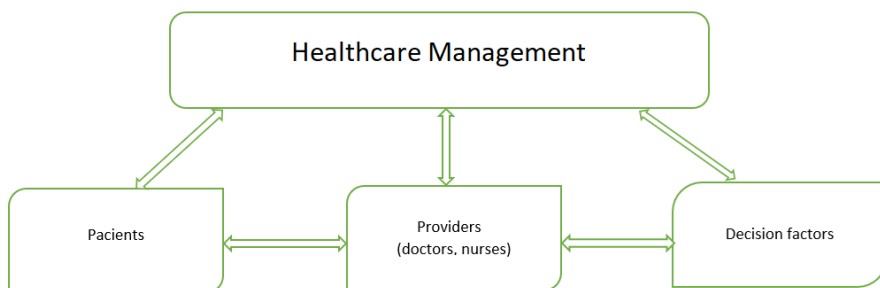


Figure 1. Key stakeholders in private healthcare organizations

Source: Author's contribution

Eysenbach and Jadad (2001, p. 77) identified how computers and the evolution of information technology were ushering in the age of consumer health informatics and the potential that lies ahead. They envisioned empowering patients through "an unprecedented ability to access information and actively participate in evidence-based healthcare."

Broens et al. (2007) highlight that those active in the medical field accept the introduction of technology in their way of working depending on their attitudes and perceptions. Regardless of its particularities, technology has become vital for any medical organization. Zacharia et al. (2009) emphasized that organizational performance is determined by including technology in the general business strategy. The authors described IT strategic alignment as the level of support by the technology of the guiding objectives included in the general strategy.

A completely different healthcare delivery model has developed because of the capabilities of new medical technologies (Ilin et al., 2018). The pandemic crisis accelerated the digitalization process in healthcare organizations, and this crisis forced these organizations to adapt the provision of medical services to the *new reality*. As an effect of technology and the status of stakeholders, the decision-making process within an organization is reformed. Wernhart et al. (2019) considered that the success of the integration of digitization in clinical practice is directly influenced by the constant knowledge of the behavior of consumers of medical services (needs, options, preferences).

Starting from the common goal of improving the health system, the researchers proposed various solutions.

With an emphasis on the role of stakeholders, we mention the *design thinking* proposed by Roberts et al. (2016). In the medical sector, this concept represents an innovation process completed by obtaining an effective solution by understanding, in a complex way, the problem using "deep empathy for the wishes, needs, and challenges of the beneficiaries of the medical act" (Roberts et al., 2016, p. 12).

For organizations active in the healthcare field, the pressures of the competitive environment are high. According to the National Institute of Statistics (INS) in Romania, the medical field's business environment has sharply developed in recent years.

The turnover of the private medical services market in Romania increased by 11% compared to 2019 and was 312% above the level of 2011, reaching 15.4 billion lei in 2020 (KeysFin, 2022).

In 2021, the activity in the health system (public and private) took place in over 65000 sanitary units, with about 2000 units more than the previous year (Activity of the Sanitary and Protection of Health in 2021, 2022).

The healthcare organization struggles to keep its beneficiaries of medical services and gain new ones. As always, managers are focused on action and results. They must identify how they use the resources, including the technological ones, to achieve the general objective of the companies. The decision-making process is based on the technical quality of the services offered, depending on the professional training, the working conditions, the organization of the services, the resources used, and the quality of the stakeholders' perception (how they perceive the services received). Virtually, to obtain added value, managers must include the role and power of stakeholders in the elaboration of strategies.

We consider that access to the Internet has changed how patients find information and, more than that, make confident choices regarding their health.

Following the definition of Homburg et al. (2017, p. 21), "... the effectiveness and efficiency of an organization's social media activities concerning marketing and market-related goals, such as revenues, growth, and market share...".

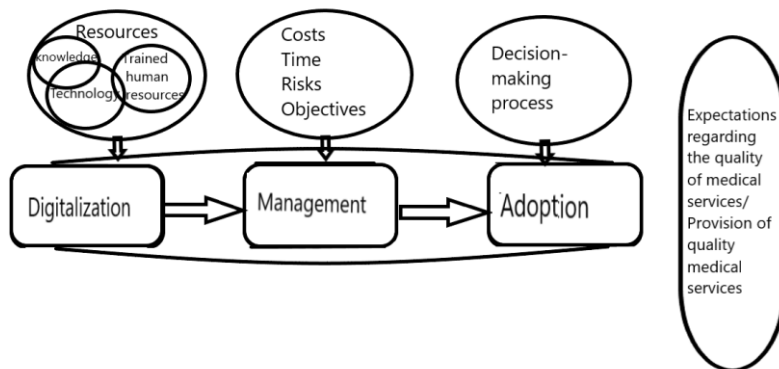


Figure 2. The relationship between the decision-making process and digitization

Source: Author's contribution

Analyzing the above figure, we observe that the particularities of healthcare organizations' stakeholders (i.e., patients) in the decision-making process will continue to have a preponderant human contribution, even the digitalization directly impact all organizational resources. The healthcare organizations' stakeholders use digital technologies, and for good organizational performance, they should apply the governance rules of virtual teams (Burlea-Schiopoiu, 2007).

3. Methodological Approach

Through a quantitative research approach, the case study involved questionnaires addressed to people randomly chosen from the following categories of stakeholders of a private medical organization in Romania.

Finally, we collected 145 questionnaires, but only 123 were valid (80 patients, 25 doctors, 15 nurses, and 3 managers; 67 women and 46 men). The study took place between May and June 2022.

The questionnaire included questions regarding how the stakeholders perceive the introduction of digitalization within a private medical healthcare organization as follows:

Q1: As a medic or patient, do you use IT medical applications (i.e., monitoring of pregnancy, heart rate, number of calories, number of steps taken)?

Q2: Do you consider that digital technologies impact early diagnosis through screening and monitoring programs followed by the transfer of results to specialized laboratories?

Q3: Do you believe medical records based on digital technology allow for preserving medical history, treatment records, daily symptoms, and medico-legal documents (referral tickets, discharge tickets, etc.)?

Q4: Regarding the effectiveness of medical devices using digital technology, do you consider that patients with chronic conditions can monitor their health status values which they can then transmit from a mobile device directly to the electronic medical record accessible to doctors for immediate assistance in extreme situations?

Q5: Do you believe that the medical act provided with the help of digital technology or/and of artificial intelligence is superior to the traditional medical act?

4. Results and Discussions

The results proved that 19 patients and 6 nurses did not have knowledge or they did not use an IT medical application (Figure 3).

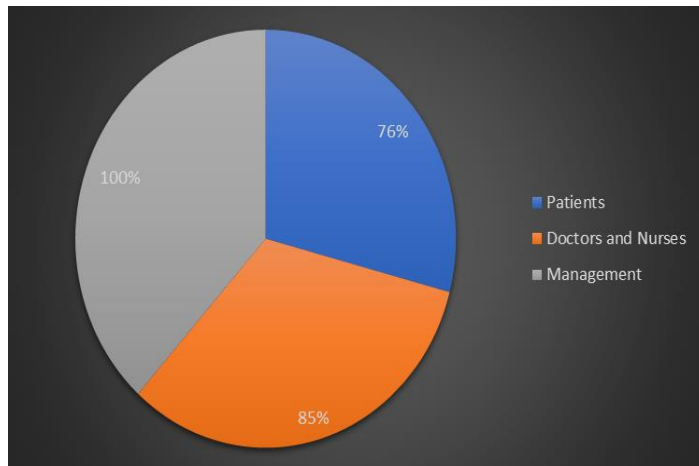


Figure 3. Knowledge and the use of digital medical applications

These findings allow us to recommend for both patients and nurses some advertising campaigns or/and training courses to introduce IT medical applications related to patients' health problems and with nurses' medical specialization.

The impact of digital technology on the accuracy of early diagnosis is put under question by all categories of stakeholders, even managers, doctors, nurses, and more susceptible patients (Figure 4).

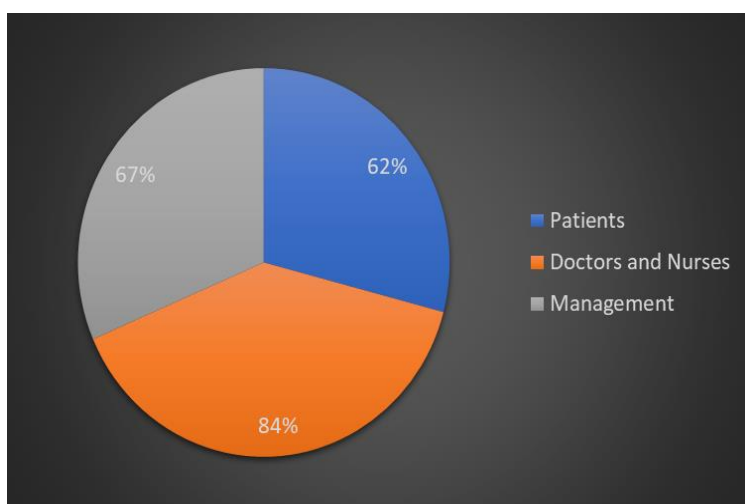


Figure 4. The impact of digital technology on the accuracy of early diagnosis

Our results are in consensus with Burlea-Schiopoiu and Ferhati (2022), that identified digital technologies as tools that contribute to the improvement of healthcare services quality.

Digitalization can allow the preservation of medical records, and the results of the respondents' perception of this issue are presented in figure 5.

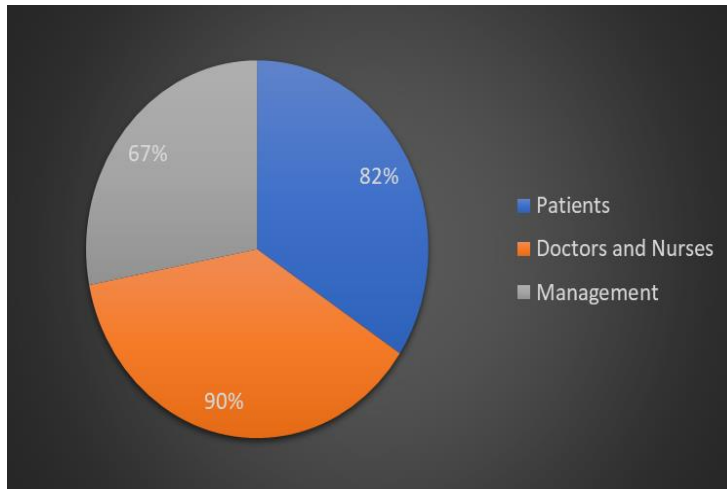


Figure 5. The stakeholders' confidence in digital technology as a tool for preserving medical records

Surprisingly, managers are circumspect related to the capacities of digital tools for preserving medical records. The patients, doctors, and nurses are confident in digital technologies. Consequently, the future of digitalization will be related to improving patient confidence in digital medical tools and increasing patients' health monitoring (Figure 6).

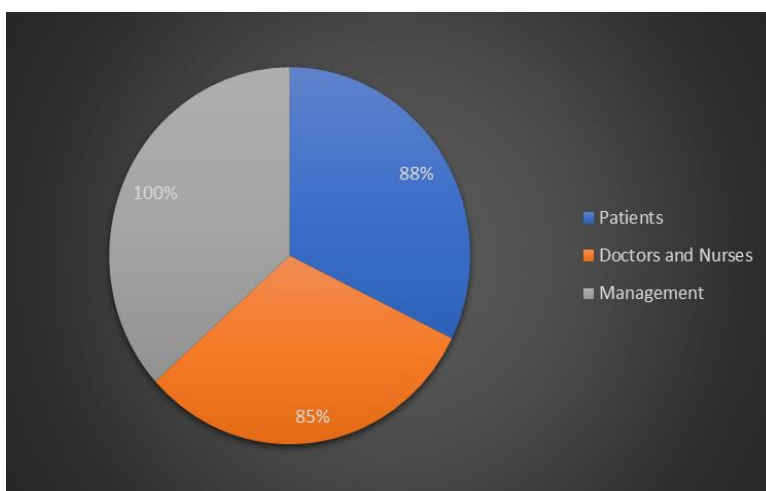


Figure 6. The digital technology increases the patients' monitoring role

Stakeholders perceive the difference between traditional and digital medical acts as challenging (Figure 7).

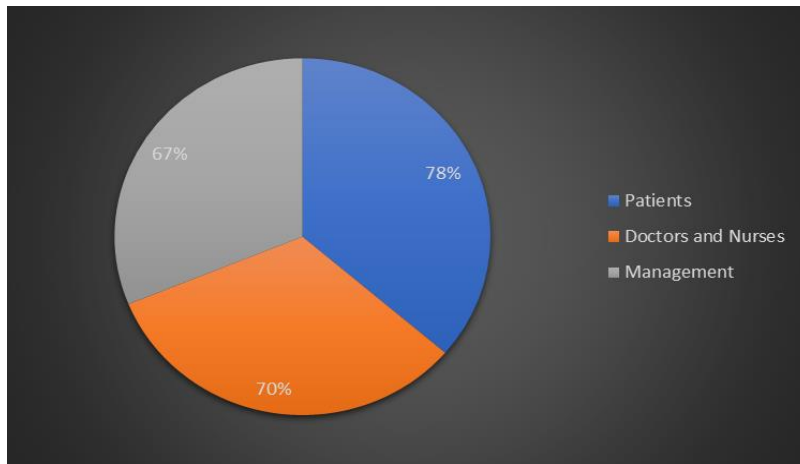


Figure 7. The stakeholders' perception of the difference between the digital and traditional medical act

The future of the healthcare sector, no matter whether public or private, will consist of digitalization and using Artificial Intelligence in the medical act.

5. Conclusions

The study concluded that perceptions of the clinical benefits of digitization implementation in terms of improving the delivery of medical services, administration of medical assistance through technology (telemedicine, e-health), improvement of the medical act and diagnosis and time reduction were not different between the different categories of stakeholders that participated in the case study.

The current framework pushes medical organizations to recalibrate their strategies for providing medical services based on the behavior and needs of stakeholders - post-Covid-19.

Future research will analyze the nature of the communication between patients and doctors using digital tools and based on the research of Burlea-Schiopoiu and Ferhati (2021), we will study the impact of performance indicators on healthcare public and private sectors.

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