

# Digital Transformation of Health Quality Services in the Healthcare Industry during Disruption and Society 5.0 Era : A Literature Review

Mochammad Jasim

Universitas Islam Negeri Jakarta, Indonesia

## Abstract:

The purpose of this study was to analyze the relationship between digital transformation variables and the quality of health services in the health industry in the Era of Disruption and Society 5.0. The design of this research is a literature review. Literature review is a description of the theory, findings and other research materials obtained from reference materials to be used as the basis for research activities. Literature review contains reviews, summaries, and thoughts of the author about several library sources (articles, books, slides, information from the internet, etc.) about the topics discussed. A good literature review must be relevant, current, and adequate. Researchers collect data through databases such as Pubmed, Scisearch, and Garuda. After collecting data through the database, the researcher used the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta Analysis) method to get the desired article to be studied. Data analysis is very important when conducting research, because data processing will relate to drawing conclusions. The results of this study are Hospitals need to be motivated to immediately implement digital transformation in their management in order to realize optimal data integration on a national scale. The problem of using big data, data security and protection, data privacy, and the use of cloud computing systems is also one of the issues that is quite challenging to understand and apply in business. Various recommendations to related parties have been formulated in the focus group discussions. Recommendations are addressed to the government, especially those authorized to issue regulations and financial support, as well as hospital management to increase implementation commitment, knowledge management of big data analysis and cloud systems, as well as empowering human resources within the organization. These recommendations are expected to be the first step in realizing a digital-based health system that is able to provide quality health services for the people

**Keywords:** Digital Transformation, Health Quality Services, Healthcare Industry, Disruption, Society 5.0 Era

## 1. INTRODUCTION

Digital transformation has played a role in revolutionizing various industries, especially in the health sector. Technology in the health sector allows an individual to have a healthier life, a longer life expectancy, and a more productive life. For example, in 2015, telemedicine was accessed by more than one million people. This figure will increase significantly in 2021, where the number of people who access telemedicine has reached 12 million people. According to Tortorella et al. (2022) technology has empowered patients

even in remote areas to access quality health services.

According to Maiurova et al. (2022); Pappas et al. (2018); Ricciardi et al. (2019); Tortorella et al. (2022) In addition to telemedicine, several other health technologies in the industrial era 4.0 that have been developed and utilized by various service facilities include artificial intelligence, blockchain, IoT (internet of things), and robotic services. many health companies view technology not only as an infrastructure but also as a strategic asset. From this fact, the idea arises that

optimally utilized technology will provide insight or input that is very useful for business progress. Appropriate data analysis can be used to improve service access to the community, increase the effectiveness of human resources, improve service quality, and reduce health care costs.

According to Maiurova et al. (2022); Pappas et al. (2018); Ricciardi et al. (2019); Tortorella et al. (2022) The use of health technology among consumers also opens up opportunities for patients and their families, so that it is easier to get information and understanding about diseases, treatment options, and to easily access and choose hospitals or health facilities that suit their needs. By realizing the benefits of this digital transformation, more and more companies operating in the health sector, including hospitals, are taking the initiative to adopt this digital transformation into their management systems to produce better quality health services. According to Kruszyńska et al. (2022); Clinker et al. (2020) not all health facilities are ready to welcome the era of disruption 4.0 which is full of digitization. Various obstacles related to human resources, funding sources, business processes, government regulations and regulations, as well as the absence of a data integration system are often challenges in realizing this. These are relevant ministries, professional associations, and implementing doctors to be able to always collaborate and be open to the process of renewal and learning. The Ministry of Health always supports efforts to digitize hospitals, which is shown in various existing innovations, including smart e-health concepts such as telemedicine, and e-medical records. Of course, this digitalization cannot be separated from the need for clear regulations and support the growth of the system with one goal, namely improving the quality of Indonesian public health services.

This research is a literature review research that focuses on digital transformation strategies. The review is drawn from several studies that have been found and concludes which strategies can be used to carry out digital transformation in organizations with the highest success rates. Furthermore, the identification process will be carried out on which strategies can be applied to organizations in Indonesia. This research will provide insight into digital transformation strategies that can be applied to organizations in Indonesia with the highest success rates. This research will also provide recommendations for initial actions that organizations need to take when they want to carry out the digital transformation process to make it easier for organizations to identify problems that exist within the organization so that errors or failures that occur in the digital transformation process can be avoided.

## 2. METHOD

The design of this research is a literature review. Literatures review is a description of the theory, findings and other research materials obtained from reference materials to be used as the basis for research activities. Literature review contains reviews, summaries, and thoughts of the author about several library sources (articles, books, slides, information from the internet, etc.) about the topics discussed. A good literature review must be relevant, current, and adequate. Researchers collect data through databases such as Pubmed, Sciencedirect, and Garuda. After collecting data through the database, the researcher used the PRISMA (Preferre Reporting Items for Systematic Reviews and Meta Analysis) method to get the desired article to be studied. Data analysis is very important when conducting research, because data processing will relate to drawing conclusions.

Analysis of the data used is by using thematic analysis. Thematic analysis is one way to get results by conducting data analysis that aims to identify patterns or determine themes through data that has been collected by researchers. There are 3 stages including:

1. Compare: find similarities between several literatures.
2. Contrast: find differences between several literatures and draw conclusions.
3. Criticize: give your own opinion based on the sources read.

### 3. DISCUSSION AND OPINION

The healthcare industry is entering an era of digital innovation where patients are looking for services that can directly answer their needs because they are limited by their daily activities. Consumers who are looking for medical information on the internet, looking for information about doctors, booking a schedule of health checks. Based on these facts, it is necessary for the hospital management team to find out the needs of target consumers or patients and incorporate them into a digital system (eg ease of access using a smartphone). This market need is being exploited by several health technology companies, which are currently growing in the community. According to Klinker et al. (2020); Marques and Ferreira (2020); Maiurova et al. (2022); Pappas et al. (2018); Ricciardi et al. (2019); Tortorella et al. (2022) Big data combines very large amounts of information and various formats, namely from the use of social media, e-commerce, online transactions, financial transactions, as well as identifying trends and business patterns in the future. According to Maiurova et al. (2022); Pappas et al. (2018); Ricciardi et al. (2019); Tortorella et al. (2022) In the healthcare industry, big data can provide several advantages, including lower medical error rates, facilitating preventive healthcare, and more accurate predictions for recruiting human resources (e.g. by helping hospitals and clinics predict an

increase in the number of patients over a given period of time). thereby helping management decide to increase the number of staff at that time). In addition to the need for investment in the field of big data, processing and analysis of the data is also needed to identify business weaknesses and help management to better understand the intended target patient.

In today's digital era, patients have started to focus on preventive health and are more concerned about knowing various things related to medical information. The implication is that several companies have invested in the field of medical devices that can be used by patients to determine their health status. Existing medical devices include heart rate detectors, exercise trackers, sweat discharge measuring devices, tools to measure blood sugar levels, and oxygen levels. According to Filgueiras et al. (2019); Maiurova et al. (2022); Pappas et al. (2018); Ricciardi et al. (2019); Tortorella et al. (2022) Big information gathered from big data and other sources (such as social media) can help companies to develop health recommendation services to patients. This is what is called predictive health care, where we can now predict what diseases and disorders may become epidemic in the future. From the estimation of the disease or outbreak that will occur, health facilities can certainly anticipate this and prepare the necessary prevention or handling steps.

The advent of digital transformation in the business world is important to implement. Here are the reasons why transformation is important in the Healthcare Industry:

#### 1. Faster Work

With this digital transformation, work will be faster. The technology that exists today, so a lot of help is obtained. The easiest example is the internet, where it is clear that communication will run smoothly and quickly. So the work will be faster.

## 2. Improve company performance

Digital transformation is very important to improve business performance. Especially with developments like now which also causes new competition. If you don't do digital transformation quickly, your business will lose competitiveness.

## 3. Customer Expectations

Digital transformation is very important because it can meet customer needs. Because customer satisfaction is the most important thing to run a business. With faster work and better company performance, it is certain that customers will be satisfied.

## 4. Increase mobility

In today's digital era, many customers spend their time using smartphones and other devices such as tablets and laptops. So that not a few companies take advantage of this to increase the productivity and capacity of these devices by adapting digital transformation. Which in the end, aims to increase customer satisfaction.

## 5. Make data more secure

Another benefit of digital transformation is the realization of a commitment to data security by the company. Company leaders must be able to protect consumer information, especially in large quantities and if it contains confidential or sensitive information.

## 6. Drive productivity

With digital transformation, employee productivity can be increased thanks to the use of tools that simplify and speed up their work processes. Not only that, the costs incurred by the company for labor can also be lower

## 4. CONCLUSION

In preparation for the era of disruption 4.0, there are still many hospitals and health care facilities that face various challenges. The main challenges are felt in terms of

the ambiguity of laws and regulations and the lack of harmonization of regulations between related ministries. In addition, from internal factors, the lack of openness, motivation, and good knowledge management on the part of hospital management, medical service doctors, and IT teams in the organization also need to be addressed. Hospitals need to be motivated to immediately implement SIMRS in their management in order to realize optimal data integration on a national scale. The problem of using big data, data security and protection, data privacy, and the use of cloud computing systems is also one of the issues that is quite challenging to understand and apply in business. Various recommendations to related parties have been formulated in the focus group discussion. Recommendations are addressed to the government, especially those authorized to issue regulations and financial support, as well as hospital management to increase implementation commitment, knowledge management of big data analysis and cloud systems, as well as empowering human resources within the organization. These recommendations are expected to be the first step in realizing a digital-based health system that is able to provide quality health services for the people

## 5. REFERENCES

1. Filgueiras, F., Flávio, C., & Palotti, P. (2019). Digital transformation and public service delivery in Brazil. *Latin American Policy*, 10(2), 195-219.
2. George, G., & Schillebeeckx, S. J. (2022). Digital transformation, sustainability, and purpose in the multinational enterprise. *Journal of World Business*, 57(3), 101326.
3. Gopal, G., Suter-Crazzolaro, C., Toldo, L., & Eberhardt, W. (2019). Digital transformation in healthcare—architectures of present and future information

- technologies. *Clinical Chemistry and Laboratory Medicine (CCLM)*, 57(3), 328-335.
4. Kraus, S., Durst, S., Ferreira, J. J., Veiga, P., Kailer, N., & Weinmann, A. (2022). Digital transformation in business and management research: An overview of the current status quo. *International Journal of Information Management*, 63, 102466.
  5. Kruszyńska-Fischbach, A., Sysko-Romańczuk, S., Napiórkowski, T. M., Napiórkowska, A., & Kozakiewicz, D. (2022). Organizational e-Health Readiness: How to Prepare the Primary Healthcare Providers' Services for Digital Transformation. *International Journal of Environmental Research and Public Health*, 19(7), 3973.
  6. Klinker, K., Wiesche, M., & Krcmar, H. (2020). Digital transformation in health care: Augmented reality for hands-free service innovation. *Information Systems Frontiers*, 22(6), 1419-1431.
  7. Marques, I. C., & Ferreira, J. J. (2020). Digital transformation in the area of health: systematic review of 45 years of evolution. *Health and Technology*, 10(3), 575-586.
  8. Maroufkhani, P., Desouza, K. C., Perrons, R. K., & Iranmanesh, M. (2022). Digital transformation in the resource and energy sectors: A systematic review. *Resources Policy*, 76, 102622.
  9. Maiurova, A., Kurniawan, T. A., Kustikova, M., Bykovskaia, E., Othman, M. H. D., Singh, D., & Goh, H. H. (2022). Promoting digital transformation in waste collection service and waste recycling in Moscow (Russia): Applying a circular economy paradigm to mitigate climate change impacts on the environment. *Journal of Cleaner Production*, 354, 131604.
  10. Pappas, I. O., Mikalef, P., Giannakos, M. N., Krogstie, J., & Lekakos, G. (2018). Big data and business analytics ecosystems: paving the way towards digital transformation and sustainable societies. *Information Systems and e-Business Management*, 16(3), 479-491.
  11. Purwanto, A., Purba, J. T., Sijabat, R., & Bernarto, I. (2021). The Role of Transformational Leadership, Organizational Citizenship Behaviour, Innovative Work Behaviour, Quality Work Life, Digital Transformation and Leader Member Exchange on Universities Performance. *Organizational Citizenship Behaviour, Innovative Work Behaviour, Quality Work Life, Digital Transformation and Leader Member Exchange on Universities Performance* (December 17, 2021).
  12. Purwanto, A. (2022). How The Role of Digital Marketing and Brand Image on Food Product Purchase Decisions? An Empirical Study on Indonesian SMEs in the Digital Era. *Journal of Industrial Engineering & Management Research*, 3(6), 34-41.
  13. Purwanto, A., Purba, J. T., Bernarto, I., & Sijabat, R. (2021). Effect of Management Innovation, Transformational Leadership, and Knowledge Sharing on Market Performance of Indonesian Consumer Goods Company. *Jurnal Aplikasi Manajemen*, 19(2), 424-434.
  14. Purwanto, A., Novitasari, D., & Asbari, M. (2022). Tourist Satisfaction and Performance of Tourism Industries: How The Role of Innovative Work Behaviour,

- Organizational Citizenship Behaviour?. *Journal of Industrial Engineering & Management Research*, 3(1), 1-12.
15. Purwanto, A., Kusumaningsih, S. W., & Prasetya, A. B. (2020). Did Transformational Leadership Elitist and Antidemocratic? A Literature Review. *International Journal of Social, Policy and Law*, 1(1), 1-11.
  16. Ricciardi, W., Pita Barros, P., Bourek, A., Brouwer, W., Kelsey, T., & Lehtonen, L. (2019). How to govern the digital transformation of health services. *European journal of public health*, 29(Supplement\_3), 7-12.
  17. Tortorella, G. L., Fogliatto, F. S., Tlapa Mendoza, D., Pepper, M., & Capurro, D. (2022). Digital transformation of health services: a value stream-oriented approach. *International Journal of Production Research*, 1-15.