



# The Use of BPJS Digitalization Programs to Improve Service Quality in Facing the Industrial Revolution 4.0 Era

Clinton Antony<sup>1</sup>, Ermi Girsang<sup>2</sup>, Sri Lestari Ramadhani Nasution<sup>3</sup>

<sup>1,2,3</sup>Universitas Prima Indonesia, Medan, North Sumatera, Indonesia

## Article Info

### Keywords:

BPJS Digitalization, Service Quality, Industrial Revolution 4.0

## ABSTRACT

The Industrial Revolution 4.0 era demands digital transformation in various sectors, including the health sector. One form of innovation in health services is the digitalization of the BPJS Health program, which aims to improve the efficiency and quality of services in health facilities. This study aims to assess the effectiveness of the use of BPJS program digitalization to improve the quality of services in facing the industrial revolution 4.0 era at Hospital Royal Prima Medan, as well as to identify obstacles faced in its implementation. The research method used is a qualitative study, where data was obtained through interviews with the hospital director, the head of the BPJS primary benefit guarantee division, and six patients using BPJS services. The results of this paper indicate that the use of BPJS digitalization at Hospital Royal Prima Medan has been running in accordance with the Standard Operating Procedure (SOP) and has had a positive impact on the acceleration of the administrative process, queue efficiency, and patient data integration. However, there are still several obstacles, such as technical disruptions in the system, limited patient understanding of technology, and instability of the internet network, which can affect the effectiveness of services. To overcome these obstacles, the hospital has made various efforts, such as providing a help desk, improving digital infrastructure, and education for patients and medical personnel. Overall, the digitalization of the BPJS Health program at Hospital Royal Prima Medan has proven effective in improving the quality of service, although further system optimization and innovation are still needed so that the implementation of this digitalization can run optimally in accordance with the demands of the Industrial Revolution 4.0.

This is an open access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.



### Corresponding Author:

Clinton Antony  
Universitas Prima Indonesia, Medan, Indonesia  
Email: [antonysitumeang79@gmail.com](mailto:antonysitumeang79@gmail.com)

## 1. INTRODUCTION

In this digital era, the use of information technology is very much needed and can be an indicator of the success of an agency, therefore organizations compete to develop and carry out information technology innovations in order to improve the quality of their agencies (Fonna, 2019). The development of information technology has given birth to innovations that certainly greatly support human life. One of the human innovations that we often use in this era is the internet. Mobile-based information systems are technological innovations that utilize the internet which is currently developing rapidly, one of the applications in hospital institutions that are close to the community regarding public services (Al Hasri & Sudarmilah, 2021). As with BPJS health services in hospitals. BPJS Health is a legal entity formed to organize a health insurance program. Health insurance is a guarantee in the form of health protection so that participants receive health care benefits and protection in meeting basic health needs provided to everyone who has paid contributions or whose contributions are paid by the government (Yasira & Jamlhir, 2019).

In running the health service program, BPJS Health collaborates with various health facilities such as community health centers, integrated health posts and hospitals to open the door to public health services (I Gusti, 2021). A hospital is an organization that through organized professional medical personnel and permanent medical facilities provides medical services, continuous nursing care, diagnosis and treatment of diseases suffered by patients (Chaeriah, Yaumul 2020). The industrial revolution 4.0 era is an era of massive internet and technology development that makes everything limitless and the data available is unlimited, this is the backbone of the movement and connectivity of machines and humans (Risdiyanto, 2019). The industrial revolution 4.0 began to be implemented in Indonesia to catch up with Indonesia's lag behind other countries. In line with the implementation of the industrial revolution 4.0 in Indonesia, the Indonesian Government is implementing steps called the Making Indonesia 4.0 roadmap (Risdiyanto, 2019).

The era of the industrial revolution 4.0, has a great influence on the development of the current health world, especially digital information technology in health services. Health services are heading towards the challenges of supporting information technology (Abdullah, 2019). BPJS Health continues to strive to improve services to all BPJS Health participants (I Gusti, 2021). In the current development of information technology that is directed towards mobile application users, BPJS Health provides innovation in the development of a JKN mobile application which is useful for facilitating JKN-KIS (National Health Insurance - Healthy Indonesia Card) services. This application utilizes information technology that can be downloaded via the Mobile JKN application on the Google Playstore or Apps Store. The purpose of Mobile JKN is that the public can enjoy services quickly. This application can be used anywhere, anytime without time limits (Self Service) (I Gusti, 2021).

With the steps in digitizing the BPJS program directly, it can improve the quality of health services in the era of the industrial revolution 4.0, the quality of health services is a priority for both service providers and the community as users of health services, the approach to quality assurance of health services has become a systemic strategy and is continuously evaluated and refined as one of the very useful tools for those who manage and plan health services (Nuryanti, 2018).

This approach is also part of the very basic skills for every health service provider who directly serves patients because the community expects health services that are more satisfaction-oriented in order to meet the basic needs of the community (Nuryanti, 2018). The quality of service and satisfaction of patients and BPJS participants must continue to be improved because this is the most important thing in determining the success of health services provided by health service providers (Damayanti NA, Jati SP, Fatmasari EY, 2018).

The digitalization of the BPJS Service System has been running for almost 5 years with the BPJS service system being digitalized gradually towards perfection, proven in addition to being easy and practical, services at BPJS at health centers or partner hospitals are good, both health facilities and so on (Ardiansyah, 2017). And this is proven for referral system services at health facilities have also started using integrated online services between Advanced Referral Health Facilities (FKRTL) such as hospitals.. The Social Security Administering Agency (BPJS) Health is trying to digitize health services related to the National Health Insurance program which will later utilize a cloud computing system to biometric access, will lead to the digitalization of the entire administration system to services slowly (Wulanadary, 2019).

Researchers have conducted a pre-survey to the research object, namely Hospital Royal Prima Medan by conducting interviews with BPJS health care users. The results of the pre-survey found that the problems commonly faced by BPJS Health patients or participants in obtaining services are limited operational time, it is also realized that the current condition of the implementation and management of

BPJS services is still carried out manually so that the public feels that the procedures are complicated, there is no certainty of the time period, non-transparent requirements, unprofessional officers, thus creating a bad image of BPJS health partner hospitals, then the problems often encountered by BPJS users are complaints about the nursing care provided, complaints in the community are not yet clear about the BPJS program, the service flow provided is also still unclear, such problems cause public perception of BPJS to be negative, the public only considers that the BPJS program is still pseudo, so that the service procedures provided are still complicated. Based on the background description above and the results of the pre-survey that the researcher has conducted at Hospital Royal Prima Medan, the researcher is interested in conducting research with the title "The use of digitalization of the BPJS program to improve the quality of service in facing the era of the industrial revolution 4.0 (Case study at Hospital Royal Prima Medan).

## 2. RESEARCH METHOD

This study uses a qualitative approach that is descriptive in nature. A qualitative approach is a research procedure that produces descriptive data in the form of written or spoken words from people and observed behavior, qualitative research focuses on social phenomena, giving voice to the feelings and perceptions of participants under study (Moleong, 2018). Descriptive is research that attempts to tell the solution to existing problems based on data (Moleong, 2018) This research will be conducted at Hospital Royal Prima Medan located at Ayahanda street No.68A, Sei Putih Tengah, Medan Petisah District, Medan City, North Sumatra 20118. This research was conducted since the author conducted a preliminary survey in March 2025 until data collection was continued with a results seminar. In this research, it was carried out in stages adjusted to the level of the author's needs, starting with preliminary preparations in the form of compiling research proposals, proposal seminars, improving proposal seminars, collecting interview data, data analysis and data processing followed by a results seminar. According to Arikonto (2018), research subjects are defined as objects, things or people where data for research variables are attached, and which are at issue. In a study, research subjects have a very strategic role because in the research subject, that is the data about the variables that the research observes. In qualitative research, respondents or research subjects are referred to as informants, namely people who provide information about the data desired by researchers related to the research being carried out. The subjects in this study are key informants, namely the Director of Hospital Royal Prima Medan, Head of the Primary Benefit Guarantee Division of BPJS Health Hospital Royal Prima Medan, and Patients or Participants of BPJS Health at Hospital Royal Prima Medan.

Table 1. Research Information

No	Informant	Method	Amount
1	Director of Hospital Royal Prima Medan.	In-depth Interview	1 Person
2	Head of Primary Benefit Guarantee Division of BPJS Health Hospital Royal Prima Medan.	In-depth Interview	1 Person
3	BPJS Health Patients or Participants at Hospital Royal Prima Medan.	In-depth Interview	6 Person
Total			8 Person

In determining informants for patients or BPJS Health participants at Hospital Royal Prima Medan using purposive sampling techniques. According to Sugiyono (2018), in qualitative research, purposive sampling is a sampling technique based on a specific purpose (the person who is considered to know best what is expected). Where the method of determining informants is determined unintentionally based on criteria that are in accordance with the needs of the researcher. In this study, the selection of informants for patients or BPJS Health participants at Hospital Royal Prima Medan based on the following criteria:

- BPJS participants who visited the Hospital Royal Prima Medan.
- BPJS participants are willing to become research informants.
- BPJS participants are in good health and willing to be interviewed.

According to Sugiyono (2018) The object of research is a scientific target to obtain data with a specific purpose and use about something objective, valid, and reliable about something (a certain variable). The object in this study is the use of digitalization of the BPJS program to improve the quality of service in facing the era of the industrial revolution 4.0.

The type and source of data are very important in research and are further used by researchers to obtain research data so as to minimize time and costs. The data sources in this study use primary data sources and secondary data sources.

#### a. Primary Data Sources

Primary data sources are data obtained by researchers directly from the research location through documentation and interviews. In this study, researchers used interview data collection techniques to interview informants in this study.

#### b. Secondary Data Sources

Secondary data sources are data obtained by researchers indirectly, either from the research location or outside the research location in the form of documentation. In this study, researchers used documentation data collection techniques and literature studies to collect secondary data.

The quality of research results is influenced by the quality of the research instrument. In qualitative research, the researcher becomes the instrument or research tool. In other words, in this research the researcher becomes the research instrument. According to Sugiyono (2088), in qualitative research the researcher becomes the instrument or research tool. The researcher must be validated to see the researcher's readiness. The researcher as an instrument must be validated, by understanding the qualitative research method, mastering the field being studied and being ready to enter the field. In this research, the researcher went directly to the location to interact with the research informants to conduct direct interviews equipped with interview guidelines, recording tools, writing tools and documentation tools.

### 4. RESULT AND ANALYSIS

#### Research Informants

In this study, the informants consisted of 8 people including 1 Director of Hospital Royal Prima Medan, 1 head of the primary benefit guarantee division of BPJS Kesehatan Hospital Royal Prima Medan and 6 patients or BPJS Health participants at Hospital Royal Prima Medan. The following is general information from the informants in this study.

Table 2. General Description of Research Informants

No Informant	Status	Age	Education	Gender
1	Informant 1	39 Years	S3	Man
2	Informant 2	37 Years	S2	Woman
3	Informant 3	36 Years	S2	Woman
4	Informant 4	29 years	SENIOR HIGH SCHOOL	Man
5	Informant 5	33 Years	S1	Woman
6	Informant 6	49 Years	S1	Man
7	Informant 7	38 Years	S1	Man
8	Informant 8	35 Years	D3	Woman

Table 2 explains the general description of the informants in this study. From the table it can be seen that the informants in this study whose age is the highest is 49 years and the lowest is 29 years, the majority of the informants' education in this study is S1 and the gender of the informants is dominated by male.

In this study, data analysis was conducted using the In Vivo Coding method, where direct quotes from informants were used to describe their experiences, views, and challenges they faced regarding the implementation of the digitalization of the BPJS Health program at Hospital Royal Prima Medan. The In Vivo Coding table presented provides an overview of various important aspects in the implementation of BPJS Health digitalization, including the implementation process, perceived impacts, changes in the service system, and patient responses in the digitalization of the BPJS program. By grouping data based on main themes, this analysis aims to understand the extent to which digitalization has contributed to improving the quality of health services and how the application of this technology can continue to be developed to be more optimal.

The following is a more detailed explanation of the contents of the In Vivo Coding table that has been created, covering the perspectives of the hospital, BPJS Health, and patients as service users.

Table 3. Results of In Vivo Table Analysis of the Role in Facing the Industrial Revolution 4.0 Era

Category	In Vivo Quotes (Direct from the interview)	Informant
Implementation of BPJS Digitalization	"We have implemented the digitalization of the BPJS Health program in stages."	Informant 1
	"BPJS Kesehatan digitalization has been implemented in patient registration and payment claim systems."	Informant 2
	"I can register online without having to queue for too long at the hospital."	Informant 5
	"The system is quite good, but sometimes there are technical problems."	Informant 6
Time of Digitalization Implementation	"The use of digitalization of the BPJS Health program has begun to be implemented gradually."	Informant 1
	"We started implementing the BPJS Kesehatan digitalization system several years ago."	Informant 2
	"I started to feel the changes about a few years ago."	Informant 5
	"If I'm not mistaken, I started to notice changes around last year."	Informant 6
Changes That Occur	"The administrative process is faster, patient queues are more organized."	Informant 1
	"Patients can register online, medical records can be accessed faster."	Informant 2
	"Now the service at the hospital is faster and less complicated."	Informant 6
	"The doctor was able to access my medical history more quickly."	Informant 8
Patient Response	"Patient response has generally been very positive."	Informant 2
	"Overall, patients feel helped."	Informant 4
	"I was a bit confused with this system at first, but after it was explained it turned out to be easier and faster."	Informant 6
	"I'm not very familiar with technology, so it was a bit difficult at first."	Informant 7

From the table above, it can be explained that related to the implementation of BPJS digitalization from the hospital management, the Director of Hospital Royal Prima Medan emphasized that digitalization is implemented gradually. The BPJS patient registration and claim systems have been digitally integrated, simplifying administration and accelerating services. The Head of the BPJS Health Primary Benefit Guarantee Division also emphasized that digitalization is already underway, especially in patient registration and the payment claim system. This shows the hospital's commitment to adopting technology to improve service efficiency. From the patient's perspective, many people feel helped by the digital system. For example, Informant 3 (BPJS patient) stated that online registration reduces queue time at the hospital.

From the time of the hospital's digitalization implementation, the Director of Hospital Royal Prima Medan explained that the implementation was carried out in stages, starting from online registration to the development of an electronic medical record system. This shows that the hospital did not immediately implement the system as a whole, but was carried out in stages to adjust to the needs and readiness of the technology. The Head of the BPJS Health Primary Benefit Guarantee Division revealed that digitalization began several years ago. In the early stages, the implementation focused more on patient registration and electronic medical record recording before finally developing into the BPJS claim and payment system. From the patient side, many have begun to feel the benefits of digitalization in the last few years. Informant 3 and Informant 4 stated that the changes began to be felt around the last 1-2 years, where they could register faster without having to queue for a long time.

As for the changes that occurred from this digitalization, the most significant change is the efficiency in the administration process and management of patient queues. The Director of Hospital Royal Prima Medan stated that the administration is faster and the queue system is more organized, which means that patients can

receive better service. The Head of the BPJS Health Primary Benefit Guarantee Division also emphasized that previously BPJS registration and verification were done manually and took a long time, but now with the digital system, patients can register online and BPJS claims are processed more easily. From the patient's perspective, the changes they feel most are the speed of service and ease of access to medical data. Informant 4 stated that now the service is faster and less complicated, while Informant 7 highlighted that doctors can now access their medical history more quickly, which makes the examination process more effective.

The response felt by patients from this digitalization where the hospital saw that the patient response was generally very positive. The Director of Hospital Royal Prima Medan stated that patients felt more comfortable and helped by this digital system. From the patient's perspective, some of them experienced difficulties at first, especially those who were not used to technology. Informant 3 and Informant 6 stated that they were initially confused or had difficulty, but after getting an explanation from the officer, they were finally able to use this system more comfortably. Patients with a better technological background, such as Informant 7, welcomed this system because it made it easier to access services. However, he also admitted that elderly patients or those who did not understand technology still needed help in using the digital system.

From the explanation above, it can be concluded that the digitalization of the BPJS program at Hospital Royal Prima Medan had a positive impact on improving the quality of health services, especially in terms of administrative speed, queue efficiency, and ease of access to medical records.

#### **Analysis of the Effectiveness of Using BPJS Program Digitalization in Improving Service Quality in Facing the Industrial Revolution 4.0 Era at Royal Prima Medan Hospital**

In this study, interviews were conducted with several informants regarding the effectiveness of the digitalization of the BPJS Health program in improving the quality of service at Hospital Royal Prima Medan. The informants interviewed consisted of hospital management, BPJS Health representatives, and BPJS Health patients or participants who directly experienced and felt the impact of the implementation of this digitalization system.

To analysed the interview data more systematically, an in vivo table was created, which displays direct quotes from the informants' answers. This table aims to capture the original perspective of each informant, without changing their meaning or interpretation of the BPJS Health digitalization in this hospital. This table categorizes the answers based on the effectiveness of BPJS Health digitalization in improving the quality of service, both in terms of administration, patient queues, service accessibility, and the challenges that are still being faced. Through this in vivo table, we can see the general pattern of the informants' answers as well as various aspects that still need to be improved in the implementation of this digitalization system.

**Table 4.** Results of the In Vivo Table of Effectiveness Analysis of the Use of BPJS Program Digitalization in Improving Service Quality in Facing the Industrial Revolution 4.0 Era at Hospital Royal Prima Medan

<b>Informant</b>	<b>In Vivo Quotes (Direct from the interview)</b>	<b>In Vivo Code</b>
Informant 1	"In general, the use of digitalization of the BPJS Kesehatan program at RSU Royal Prima Medan has been quite effective in improving the quality of service." "Patients can register online, check their BPJS membership status, and reduce long queues at the counter." "Patient data integration is also better, speeding up the administration process and doctor examinations." "There are still some obstacles, such as the difficulty of elderly patients in using this system and some technical glitches."	Quite effective in improving service quality Register online, reduce queues Better data integration Elderly patient challenges and technical difficulties
Informant 2	"BPJS Kesehatan digitalization has been very helpful in speeding up the service process." "Patients do not need to bring a lot of physical documents, just with their NIK or BPJS card they can register." "The queue is more organized, so patients can be more comfortable." "Still facing some obstacles, such as the network which is sometimes unstable and patients who are not familiar with	Speed up service Without physical documents, just NIK More organized queues Network constraints and

	the technology."	lack of technology familiarity
Informant 3	"This system is quite effective because I can register faster and don't have to queue for long."	Fast registration, reduced queues
Informant 4	"I feel quite helped by this digitalization, but initially I had some difficulties when I first used it."	Helpful, initially difficult to use
Informant 5	"This digitalization is quite good, but I have experienced technical problems when the system errors."	Good enough, some technical issues
Informant 6	"For me who is not used to technology, it was difficult to use at first. But with the help of the officer, I was finally able to understand the system."	It was difficult at first, but the officer helped
Informant 7	"Previously I had to come early in the morning to get an early queue number, now I can register online and come according to schedule."	No need to come early, register online
Informant 8	"Very effective."	Very effective

The table above shows how the digitalization of the BPJS Health program at Hospital Royal Prima Medan has an impact on the quality of service. The in vivo code is taken directly from the informant's answers to highlight the main aspects of the implementation of this digital system.

Based on interviews with informants 1 and 2, the digitalization of the BPJS system brings several advantages, including online registration makes it easier for patients to register without having to come to the hospital early (Register online, reduce queues), faster administration because patient data is integrated into the hospital system (Better data integration), more organized queues, so patients feel more comfortable while waiting for their turn (Queues are more organized), no need to bring a lot of physical documents, just use NIK or BPJS card (Without physical documents, just NIK).

Patients' views on this digital system vary, but the majority feel helped by digitalization where most patients feel that the queue is faster and more orderly (Quick registration, reduced queue), Some patients initially had difficulty using the system, but after being given directions by the officer, they began to get used to it (Helpful, initially difficult to use), some patients experienced technical problems when using the digital system, for example when the network was disrupted or had an error (Quite good, there were technical problems), Most patients felt that this system was effective and made it easier for them to access health services (Very effective), This shows that even though there are still technical problems, the majority of patients feel the benefits of this digital system and hope that it will continue to be improved to improve the quality of service.

Based on the interviews and in vivo codes analyzed, it can be concluded that the digitalization of the BPJS Health program at Hospital Royal Prima Medan has been quite effective in improving the quality of service. The following in vivo table presents the results of interview analysis related to the use of BPJS Health program digitalization at Hospital Royal Prima Medan. The data compiled in this table is a summary of various responses obtained from the hospital, BPJS Health, and patients using the service. Through this table, we can see the experiences and perspectives of each informant in dealing with the digitalization of health services, including the obstacles faced, the solutions implemented, and the suitability of the system with the Standard Operating Procedure (SOP). This table also describes patient perceptions of the effectiveness of the digitalization system, especially in terms of ease of access, speed of service, and technical obstacles that still need to be fixed.

#### **Analysis Role Digitalization of BPJS Program in Improving Service Quality in Facing the Industrial Revolution 4.0 Era at Royal Prima Medan Hospital**

The Industrial Revolution 4.0 era brings various changes in the health service sector, especially in the application of digitalization to improve efficiency and quality of service. Digitalization of the BPJS Health program is one of the strategic steps implemented at Hospital Royal Prima Medan to optimize patient administration, accelerate medical services, and increase transparency and patient satisfaction. This study aims to explore the role of digitalization of the BPJS program in improving the quality of service at Hospital Royal Prima Medan.

Based on interviews with the Director of Hospital Royal Prima Medan and the Head of BPJS Health Primary Benefit Guarantee Division, it is known that the digitalization of the BPJS program has been implemented gradually. The initial digitalization process included online registration, then developed into electronic medical records and an integrated claim system. Currently, most of the administration is digital-based, although it is still in the refinement stage to ensure optimal service.

The digitalization of the BPJS Health program at Hospital Royal Prima Medan has various positive impacts on the quality of service, including the online registration system reduces queues and speeds up service, electronic medical records help medical personnel in providing more accurate diagnoses and treatments. On the patient side, the results of the study showed that patients felt the service process was faster and easier, without having to bring a lot of physical documents, Transparency in the BPJS registration and claim process increased, thereby reducing uncertainty for patients, patient data is stored in a digital system so that it is easier to access by medical personnel when needed and also an integrated claim system reduces the potential for administrative errors.

The digitalization of the BPJS Health program at Hospital Royal Prima Medan has shown a significant role in improving the quality of health services in the Industrial Revolution 4.0 era. With a digital system, the administration process becomes faster, patient queues are more organized, and medical records and BPJS claims are more efficient. With continuous improvement and development, the digitalization of the BPJS Health program at Hospital Royal Prima Medan is expected to further improve the quality of health services and provide broader benefits for patients and medical personnel.

## 5. CONCLUSION

The conclusions of this study are as follows:

1. Overall, the digitalization of the BPJS Health program at Hospital Royal Prima Medan has had a positive impact in improving the quality of health services, although further improvements and innovations are still needed so that this system can run more optimally in the future. This digital transformation not only helps hospitals in providing faster and more effective services, but is also part of the readiness of the health industry in facing technological developments in the Industrial Revolution 4.0 era.
2. The digitalization of the BPJS Health program at Hospital Royal Prima Medan can be said to be effective in improving the quality of health services, although improvements and innovations are still needed so that this system can run more optimally. This digital transformation is part of the health industry's readiness to face the Industrial Revolution 4.0, which demands increased efficiency, service quality, and maximum utilization of technology in the health sector.
3. Although the implementation of the digitalization of the BPJS Health program at Hospital Royal Prima Medan has had a positive impact in improving the quality of service, system optimization and infrastructure improvements are still needed so that existing obstacles can be minimized. This effort is very important so that the hospital can fully adapt to the demands of the Industrial Revolution 4.0 and provide faster, more effective, and more efficient health services for all patients.



## REFERENCES

- [1] Aldianto, L., Mirzanti, IR, Sushandoyo, D., & Dewi, EF (2018). Development of Science and Technopark in Facing the Industrial Era 4.0 - A LITERATURE STUDY. *Indonesian Management*, 18(1), 68–76.
- [2] Abdullah, F. (2019) 'Digital phenomena in the era of the industrial revolution 4.0.', *Journal of Visual Communication Design Dimensions of Fine Arts and Design*, 4(1), pp. 47–58.
- [3] Ahmad, F. (2019). The Influence of Perception of Service Quality on Patient Satisfaction Levels at Titi Papan Health Center, Medan Deli District in 2019.
- [4] Alfiana, Alfina T. (2019). "Analysis of Health Service Quality at Level IV Hospitals in Madiun City in 2019". Public Health Thesis, Stikes Bhati Husada Mulia. Stikes Bhakti Husada Mulia Madiun: Published.
- [5] Al Hasri, MV, & Sudarmilah, E. (2021). Population Administration Service Information System Based on Banaran Village Website. *MATRIK: Journal of Management, Informatics Engineering and Computer Engineering*, 20(2), 249–260. <https://doi.org/10.30812/matrik.v20i2.1056>
- [6] Ardiansyah, Sulasno. Implementation of Health Services for Patients Using Social Security Administration Agency (BPJS) at Cilegon City Regional General Hospital. *Niagara Scientific Journal*. 2017;9(1):40–6. 2.
- [7] Arikunto, S. 2018. *Research Procedure: A Practical Approach*. Jakarta: Rineka Cipta
- [8] Chaeriah, Yaumil, et al. 2020. "Implications of the Position of Medical Personnel (Informed Consent) on Hospital Accountability." 8(April):1–19.
- [9] Damayanti, NA, Jati, SP, & Fatmasari, EY 2018. Analysis of Differences in Patient Satisfaction Levels on the Quality of Outpatient Services at Primary and Full Accredited Health Centers in Semarang City. *Journal of Public Health, Faculty of Public Health, Diponegoro University*, 6(5): 124–134.
- [10] Fonna, Nurdianita. (2019). Development of the Industrial Revolution 4.0 in Various Fields. Bogor: GUEPEDIA.
- [11] Hatta, G. (2017). *Health Information Management Guidelines in Health Service Facilities*. Jakarta: UI-Press.
- [12] Hamdan. (2018). Industry 4.0: The Influence of the Industrial Revolution on Entrepreneurship for Economic Independence. *NUSAMBA*, 3.
- [13] Irwandy. 2019. *Hospital Efficiency and Productivity*. edited by AK Muzzakir. Makassar: CV. Social Public Genius (SIGn).
- [14] I Gusti, AIL, I Gede, S. 2021. The Use of BPJS Program Digitalization to Improve Service Quality in Facing the Industrial Revolution 4.0 Era. *Bali Health Journal* ISSN 2599-1280 (Online); ISSN 2599-2449 (Print) <http://ejournal.unbi.ac.id/index.php/BHJ>
- [15] Muliana, Y. (2019). Comparison of Satisfaction Levels of Outpatient Health Services in BPJS and Non-BPJS Patients Based on the Servqual Method at Dumai City Hospital. <http://repository.usu.ac.id/handle/123456789/14349>
- [16] Moleong, Lexy J. 2018. *Qualitative Research Methodology*. Bandung: PT Rosdakarya.
- [17] Nuryanti, Tutik and Slamet Djauhari. 2017. Analysis of the Influence of Service Quality on Inpatient Satisfaction at Karanganyar District Hospital. *Smoothing Journal of Research and Scientific Studies, Faculty of Economics, University of Surakarta* Vol.15 No.3 July 2017: 63-71.
- [18] Putra, Dimas Fannyrza Yuriant. 2020. "Hospital Liability for Doctors' Actions Performing Surgery on Patients Without Medical Consent." *Education and Development* 8(2):218–26.
- [19] Prasetyo, H., & Sutopo, W. (2018). INDUSTRY 4.0: Review of Aspect Classification and Direction of Research Development. *Journal of Industrial Engineering*, 13(1), 17–26. <https://doi.org/10.2307/1782970>
- [20] Risdianto, Eko. (2019). *Analysis of Indonesian Education in the Era of the Industrial Revolution 4.0*. Bengkulu: University of Bengkulu.
- [21] Solechan. 2019. Social Security Administering Body (BPJS) Health as Public Service. *Administrative Law & Governance Journal*. Volume 2 Issue 4, Nov 2019.
- [22] Schawab, K. (2019). *The fourth industrial revolution*. Crown Business Press.
- [23] Suharman & Hari Wisnu Murti, "Study of Industry 4.0 for its Implementation in Indonesia", *Journal of Industrial Management and Logistics*, Vol.03 No.01, May 2019.
- [24] Sugiyono. (2018). *Quantitative, Qualitative, and R&D Research Methods*. Bandung: Alfabeta, CV.
- [25] Supartiningsih, S. 2017. Quality of Hospital Patient Satisfaction Service: Case Study of Outpatients. *Journal of Medicoeticolegal and Hospital Management*, 6(1), pp.9-15.

- 
- [26] Tjiptono. 2018. Promotional Advertising: Additional Aspects of Integrated Marketing Communications, 5th Edition. Jakarta: Erlangga.
- [27] Umar, F. (2018). Marketing Management II on the Industrial Revolution 4.0.
- [28] Wandu Adiansah, Eko Setiawan, Wina Nurdini Kodaruddin, Hery Wibowo, Adolescents in the Era of the Industrial Revolution 4.0, Journal of Social Work, Vol.2 No.1, July 2019.
- [29] Wulanadary A, Sudarman S, Ikhsan I. BPJS Health Innovation in Providing Services to the Community: Jkn Mobile Application. J Public Policy [Internet]. 2019;5(2):98. Available from:<http://jurnal.utu.ac.id/jppolicy/article/view/1119>
- [30] Yasira, R., & Jamhir, J. (2019). Social Security Administration Agency Services. Justisia Journal: Journal of Law, Legislation and Social Institutions, 3(2), 276.<https://doi.org/10.22373/justisia.v3i2.5933>