Ease of Use Technology as a Dominant Factor in Technology Acceptance Hospital Information System by Officers at the Jambi Provincial Government Hospital

Aris Yulianto
Student
ASEAN Institute for Health Development
Mahidol University, Thailand
aris.yul@student.mahidol.edu
Researcher
National Research and Innovation Agency, Republic of Indonesia

Ahmad Subhan
Lecturer
Faculty of Social and Political Sciences
Nurdin Hamzah University, Jambi Indonesia
subhanlitbang@gmail.com

Lelly Andayasari, Novia Susianti
Researcher
National Research and Innovation Agency, Republic of Indonesia
lelly.andayasari@brin.go.id, novia.susianti@brin.go.id

Abstract

Technology Acceptance Model (TAM) is one of the valid models to analyze factors that influence the acceptance of technology information, utterly in hospitals. This study aimed to analyze factors that influence the acceptance of the Hospital Information System (HIS) by its staff owned by the Jambi Provincial Government. A cross-sectional quantitative study design chose its sites by purposive sampling with B-type hospitals criterion owned by Jambi Provincial Government, namely Raden Mattaher District Hospital and H. Hanafie District Hospital, in 2019. Population and sample were selected hospital staff based on a purposive sampling of as many as 104 respondents. Factors that can affect HIS acceptance based on TAM theory are the perception of convenience and utility and motivation's staff. Data analysis using version 23 SPSS software, Chi-square analysis to obtain the significance of factors and logistic regression to determine dominance factor. Results showed that the three factors affect significantly HIS acceptance for hospital staff, with OR=5 and p-value=0.003 for ease of use perception, OR=9.8 and p-value=0.003 for usefulness perception, OR=3.4 and p-value=0.04 for staff's motivation. At the same time, the most dominant factor that influences HIS acceptance where evaluated HIS was easy to use for staff would be accepted 10.46 times compared to hard one. Emphasizing the convenience aspect of applying HIS to support the work and performance of staff was urgent for hospital management and Jambi Provincial Government.

Keywords:

Hospital Information System (HIS), Technology Acceptance Models (TAM), Ease of Use Perception, Usefulness Perception, Jambi Province

1. Introduction

The application of information and communication technology (ICT) has proven to be able to improve the quality, accessibility, and sustainability of health efforts as well as the speed of work processes, especially in health service facilities. Hospital Information System (HIS) is part of the Health Information System is a form of ICT application in health services by processing and integrating the entire flow of hospital services to obtain information precisely and accurately in making decisions about an action by health workers and management. The complexity of services that has always been a challenge in providing services in hospitals so far can be overcome through the application of ICT (Hackl, Hoerbst and Ammenwerth 2011; Alipour *et al.* 2016; Setyohadi and Purnawati 2018).

Considering the importance of implementing ICT in the development of the global health world, the Minister of Health issued Minister of Health Regulation Number 82 of 2013, which requires all hospitals to use HIS in an integrated manner with several services from the government (interoperability), such as the State Asset Management and Accounting Information System (SIMAK BMN) specifically for government-owned hospitals, reporting of the Hospital Information System (SIRS), INA-CBGs, other government-developed applications, and other health care facility management information systems. The goal is that all data in the hospital can be reported to the Ministry of Health easily (Anonim 2021).

Indonesia currently has more than 3,039 hospitals with 43% of them not utilizing HIS. This condition is still coupled with the existence of HIS which has not fully functioned in daily operations (Puspita 2021). There are many factors cause, starting from the ability of HIS software developed by RS in integrating and accommodating all the needs of the type of service, hardware that must be able to accommodate the needs of the system to be built, and of course determined by *brainware* as a determinant of the running of the system built which requires commitment (Buntin *et al.* 2011; Srinivasan 2013; Harsono 2015; Maya 2018).

Related to *brainware*, one of the most frequently used theories to know how users can accept then adopt and use information technology is the Theory of Acceptance Model (TAM) (Alipour *et al.* 2016). TAM was first introduced by Davis et al. in 1986 (Davis 1989). This model provides a traditional point of view on the acceptance of technology from the user aspect. The model states that a person's behavioural intention to use a particular technology can be predicted by their assessment of "perceived ease of use" and "perceived usefulness." (Davis 1989; Holden and Karsh, 2010; Priyanka S and Kumar MA 2014; Sayekti and Putarta 2016; Kusumawati and Sulistyawati 2018; Setyohadi and Purnawati 2018).

A study of the hospital that has utilized HIS for approximately two years, states that the convenience of HIS in hospital-based on the perceived ease of use dimension, is quite easy and useful to produce information on users (Putra and Kurniawati, 2019). Meanwhile, based on an assessment of the perceived of usefulness dimension, it is stated that the perception of the usefulness of HIS in the RS towards users is sufficient to produce the use of technology that can help performance (Putra and Kurniawati, 2019). The results of Supriyati and Cholil's research, (2017), state that computer self-efficacy has a positive and significant effect on the perception of the benefits and ease of use of information system technology in hospitals which will further determine the intention to behave using the technology in daily work (Supriyati and Cholil 2017).

This study was conducted at type B hospitals owned by the Jambi Provincial Government, namely Raden Mattaher Hospital (RM) and H. Hanafie Hospital (HH), where HIS has been implemented in both hospitals but still requires the development of HIS. And for that, of course, it is important to know how to accept hospital officers (users) to use HIS in supporting their performance. So that this study aims to analyze what factors affect the acceptance of a HIS by workers in hospitals owned by the Jambi Provincial Government.

1.1 Objectives

This study aimed to analyze factors that influence the acceptance of the Hospital Information System (HIS) by its staff owned by the Jambi Provincial Government. A cross-sectional quantitative study design chose its sites by purposive

sampling with B-type hospitals criterion owned by Jambi Provincial Government, namely Raden Mattaher District Hospital and H. Hanafie District Hospital, in 2019.

2. Literature Review

HIS Concept

Hospital Information System (HIS) is an essential part of health care service with performing several activities such as collecting data, processing, storing and visualizing to support decision-maker in planning the health care services such as data collection, service processes and visualization in the collection of valid data for decision making by both health workers and management in hospitals (Yazdi-Feyzabadi, Emami and Mchrolhassani 2015).

TAM Concept

Technology Acceptance Model (TAM) is how users receive and use technology. This distinguishes two concepts. First, the perceived benefits reflect the expected benefits of the use of certain technologies. Secondly, the perception of ease of use reflects almost the same thing as the perceived control of behaviour in the theory of planned behaviour. It models the understanding of how users receive and use technology. The model puts forward an understanding of several factors, which influence their decisions about how and when they will use new technologies exceptionally. Attitudes towards adoption will determine the positive or negative behaviour of future adopters regarding new technologies (Davis 1989; Priyanka S and Kumar MA 2014; Alipour *et al.* 2016; Supriyati and Cholil 2017).

3. Methods

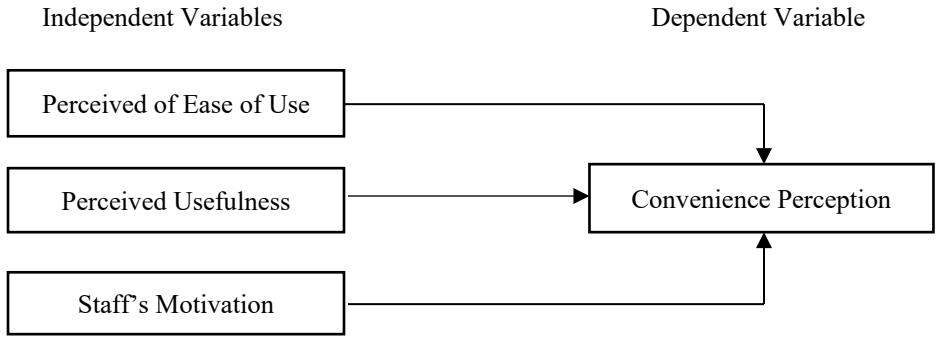
Study Design

This research is part of the Hospital Information System and Service Quality research at two Government Hospitals in Jambi Province in 2019. The research design is quantitative cross-sectional with the research location selected by Purposive Sampling with the criteria of Jambi Provincial Government hospitals, both provincial and regency governments, type B referral hospitals where Raden Mattaher Hospital is a referral centre for the eastern region and cities within Jambi Province, while H. Hanafie Hospital is a referral centre for the western region of Jambi Province.

Population and Sample

The population are all employees in both hospitals, while the sample is determined by purposive sampling with the criteria that the officer has a service period of more than a year and is responsible for operationonal of HIS, the head of the room and the health officer in the service room. The number of samples found was 57 people for Raden Mattaher Hospital (RM) hospital and 55 people for H. Hanafie Hospital (HH).

Conceptual Framework



Operational Definition

Table 1. Operational Definition of Independent and Dependent Variables

Variable	Operational Definition	Tools	Measurement	Scale
Independent Variable				
Technology Acceptance	Acceptance and use of HIS by officers	Questionnaire, question 16-19	1. Less, if < med=10 2. Good, if ≥ med=10	Ordinal
Dependent Variable				
Perceive Ease of Use	Perceptions of the ease of use of HIS by hospital staff, including the ease of learning and alienating	Questionnaire, question 1-5	1. Less, if < med=11 2. Ease, if ≥ med=11	Ordinal
Perceived Usefulness	Perception of the benefits of HIS in the completion of work	Questionnaire, question 6-10	1. Less, if < med=11 2. Good, if ≥ med=11	Ordinal
Motivation of Staff	Encouragement from officers in using HIS for job completion	Questionnaire, question 11-15	1. Low, if ≥ med=10 2. High, if < med=10	Ordinal

4. Results and Discussion

4.1 Description of Sample Characteristics based on Research Variables

The acceptance of HIS technology by employees at the Type B Hospital in Jambi Province through this study showed that as many as 57 people from respondents (54.8%) could receive and use HIS technology in their work and only 47 people (45.2%) were less accepting. Based on the perception of the ease of HIS technology developed, it shows that as many as 55 people (52.9%) stated that the HIS application was easy to use, but there were still 49 people (47.1%) who stated that it was not easy. According to the usefulness of the HIS application in supporting the daily work of respondents, as many as 53 respondents (51%) stated that the use of the application was good but still 51 people (49%) stated that it was still not good. As for the motivation of staff in receiving and using HIS technology, it was found that 57 respondents (54.8%) had high motivation, while 47 people (45.2%) respondents with less motivation to use HIS technology. For more details, you can see the following table:

Table 2. Frequency Distribution of Employee Characteristics

Characteristic	n	%
Technology Acceptance		
Low	47	45.2
High	57	54.8
Perceived Ease of Use		
Less	49	47.1
Ease	55	52.9
Perceived Usefulness		
Less	51	49
Good	53	51
Motivation of Staff		
Low	47	45.2
High	57	54.8

Source: Processed Primary Data, 2019

4.2 Association of Independent Variables to Dependent Variable

The results of the statistical test showed that there was a significant association between the perception of convenience and the acceptance of HIS technology (p-value = 0.000), where respondents who stated that the technology was less easy to use tended not to accept by 5 times compared to respondents who thought the technology was easy to use (OR = 5,020). It was found that of the 49 respondents who stated that the HIS application was not easy to use, it turned out that 32 of them (65.3%) were less accepting of the technology and only 17 people (34.7%) were accepting. Meanwhile, of the 55 respondents who stated that HIS technology is relatively easy to use, it was found that 40 people (72.7%) received the technology and only 15 people (27.3%) were less accepting.

The results of the statistical factor test of respondents' perception of the usefulness of HIS technology also showed that there was a significant relationship between the perception of the usefulness of the technology and the acceptance of the technology (p = 0.003). Respondents who stated that technology was less useful were less likely to not accept and use HIS technology by 3.5 times compared to respondents who stated the technology was already useful for their work (OR=3,584). This significant relationship can be seen from the distribution of respondents, where of the 51 people who thought technology was less beneficial for their work, it turned out that as many as 31 people (60.8%) did not accept, and only 20 people (39.2%) received it. Meanwhile, of the 53 people who stated that technology was useful, only 16 people (30.2%) were less receptive and the remaining 37 people (68.4%) had received and used HIS technology.

On the staff motivation factor, the results of the statistical test showed that there was a significant relationship between staff motivation and acceptance of HIS technology (p-value= 0.003), with a relationship density of 3,491 which showed that staff with low motivation were less likely to accept and use technology by 3.4 times compared to staff with high motivation. The distribution of respondents showed that of the 47 respondents with low motivation, 29 of them (61.7%) were among those who were less accepting of HIS technology and who received only 18 people (38.3%). Meanwhile, of the 57 respondents who had high motivation, there were 39 people (68.4%) including receiving and only 18 people (31.8%) still did not receive. A detailed explanation is shown in the following table:

Table 3. Association Between Perception Ease of Use, Perception Usefulness and Motivation of Staff with Acceptance of HIS Technology at the Government-owned Type B Hospital in Jambi Province

Variable	HIS Acceptance				Total		OR	95% CI	p-value
	Less		Accept		Sum	%			
	n	%	n	%					
Perceived Ease of Use									
Less	32	65.3	17	34.7	49	47.1	5.020	2.177-11.576	0.000
Ease	15	27.3	40	72.7	55	52.9			
Perceived Usefulness									
Less	31	60.8	20	39.2	51	49	3.584	1.591-8.076	0.003
Good	16	30.2	37	69.8	53	51			
Motivation of Staff									
Low	29	61.7	18	38.3	47	45.2	3.491	1.551-7.855	0.004
High	18	31.8	39	68.4	57	54.8			

Source: Processed Primary Data, 2019

Based on the results of the analysis, it was found that staff perceptions of the ease and usefulness of HIS technology as well as the motivation of officers will determine the acceptance of the technology for use in daily work. The results of this study are in line with the results of research by Kumar and Priyanka (2014), which found a significant relationship between perceived usefulness, attitude toward usage and behavioral attention to use the e-recruitment system with the basis of research using Technology Acceptance Model (TAM) (Fatmasari 2014; Priyanka S and Kumar MA 2014). Another study by Susilo and Mustofa (2019) concluded that one of the factors that affect the use of HIS by officers is the human factor, where the assumption that an easy-to-use application will determine the use of the application or not (Susilo and Mustofa 2019).

The perception of the ease of use of technology is a measure by which a person believes that technology can be easily used. The measure of ease consists of ease to learn, ease to apply to work, ease to improve skills and ease to operate. Meanwhile, the perception of the usefulness of technology is a measure of the benefits received by users, including technology helping work to be easier, increasing productivity, increasing effectiveness and developing one's performance.

These judgments on a person will affect his acceptance of using a technology to achieve the expected performance goals (self-efficacy), which will further affect the motivation of the person. Individuals with low self-efficacy will undermine their motivation to do a job by believing that they are unable to complete the work. This has also been proven in this study, where in respondents with low motivation it turns out that there is also a low level of acceptance of using HIS technology. Meanwhile, respondents with high motivation increased their acceptance of to use of HIS technology in improving performance. The results of this study are supported by Cholil's research (2017) which concludes attitudes, intentions and behaviors that are a reflection of a person's motivation have a significant effect on the acceptance and use of HIS technology by employees at RSO Prof. Dr. R. Soeharso Surakarta (Supriyati and Cholil 2017).

4.3 Multivariate Modeling

In the results of the selection of bivariate variable analysis, the three independent variables have a role as multivariate candidates, so the three variables are included as models (p-value <0.25).

Table 4. Multivariate Candidate Variable Selection

Variable	p-value	Information
Perceived Ease of Use	0.000	Multivariate Candidate
Perceived Usefulness	0.002	Multivariate Candidate
Motivation of Staff	0.022	Multivariate Candidate

Source: Processed Primary Data, 2022

Multivariate modeling is only done through one stage with the final result as in the following table:

Table 5. Final Model of Multivariate Analysis

Variable	B	POR (95% CI)	P-Value	Omnibus	Overall Percentage
Perceived Ease of Use	4.159	10.464	0,001	20.889	69.2
Perceived Usefulness	2.769	5.336	0,000		

Source: Processed Primary Data, 2019

Based on the results of the analysis, it was found that the final model of factors that affect the acceptance of HIS technology by Employees of Type B Hospital in Jambi Province is the perception of convenience and perception of the benefits of HIS technology. The dominant factor in determining the acceptance of technology in this study was the perception of the ease of HIS. HIS which is considered easy to use will be 10 times more accepted and used than HIS which is considered difficult to use. Meanwhile, information technology that is considered to be of high usefulness will determine the use by respondents by 5 times compared to the technology that is considered less useful.

According to Davis (1989), convenience is the level at which a person believes that using a certain system is free from effort. Ease of use is one of the concepts of user satisfaction with a system or technology. An easy-to-use system will increase the intention to use. And from some research results, it is stated that the use of information technology by a person is not born from the element of pressure, but rather easy to use (Davis 1989; Priyanka S and Kumar MA 2014).

The usefulness of technology for a person in supporting their performance is also no less decisive for a person to receive a system or information technology. Several research results support the findings of this study, which states that the usefulness of technology in helping work become easier, increase productivity, increase effectiveness and develop a person's performance will determine the acceptance of the technology and determine the intensity of use (Eki and Misfariyan 2015; Alipour *et al.* 2016; Kusumawati and Sulistyawati 2018).

5. Proposed Improvements

Understanding the determinants of the acceptance of health workers in the use of the HIS is an important thing to do. The factors of ease, usefulness and motivation of officers are factors that have been proven to determine acceptance. However, emphasizing the convenience aspect of applying HIS to support the work and performance of staff is an urgent matter for the development of HIS technology in hospitals in Jambi Province.

6. Validation

Validity and reliability tests were carried out on 30 respondents, so that the table r value used a degree of freedom (value df=n-2=30-2=28), at a meaningfulness level of 5% which was 0.361. Meanwhile, for reliability, by comparing r the result in the form of an Alpha value, with the provision that if the value of r Alpha> r of the table, then the question is reliable. The validity and reliability test of the questionnaire for independent variable to 3 indicators of the TAM model (perceived ease of use, perceived usefulness and motivation) was measured through 15 questions, and 4 questions for dependent variable with the result of the validity test i.e. the value of r result (0.362-0.687) is greater than r table (r=0.361), so it can be concluded that the statement is declared valid. For reliability, the test results show the value of r Alpha (0.749) is greater than the r of the table (0.361) so the statement is declared reliable.

Conclusion

HIS is an important part of providing accurate and valid data to support decision-making by health workers in providing health services, while also being important for management in making policies. Challenges in the use of HIS technology can be answered by studying the factors that determine the acceptance of the technology. The study found that the ease of technology, usefulness and motivation of officers will determine the acceptance of HIS technology by health officers in hospitals. The dominant factor is the ease of HIS technology where HIS technology which is considered easy will increase the acceptance of officers by 10 times compared to HIS technology which is considered difficult. At the same time, the most dominant factor that influences HIS convenience perception, where evaluated HIS was easy to use for staff would be accepted 10.46 times compared to hard one. Emphasizing the convenience aspect of applying HIS to support the work and performance of staff was urgent for hospital management and Jambi Provincial Government.

References

Alipour, J. *et al.*, 'Factors affecting hospital information system acceptance by caregivers of educational hospitals based on technology acceptance model (TAM): A study in Iran', *IIOAB Journal*, 7(8Special Issue), pp. 119–123, 2016.

Anonim, *Simak Regulasi SIMRS di Indonesia dari Kemenkes*, *Blog Lintasarta*, 2021. Available at: https://blog.lintasarta.net/article/solution/smart-city/simrs//simak-regulasi-simrs-di-indonesia-dari-kemenkes (Accessed: 12 July 2022).

Buntin, M. . *et al.*, 'The benefits of health information technology: A review of the recent literature shows predominantly positive results', *Health Affairs*, vol. 30, no.3, pp. pp. 464–471, 2011. doi: 10.1377/hlthaff.2011.0178.

Davis, F., 'Perceived Usefulness, Perceived Ease ofUse, and User Acceptance of Information Technology', *Management Information Systems Research Center*, vol. 13, no.3, pp. 319–340, 1989.

Eki, S. and Misfariyan (2015) 'UMUM DAERAH BANGKINANG MENGGUNAKAN METODE TECHNOLOGY ACCEPTANCE MODEL (TAM) Usage). Secara skematik teori TAM dapat dilihat pada gambar 1 berikut ini ':

Fatmasari, A. M. (2014) 'PENERAPAN METODE TECHNOLOGY ACCEPTANCE MODEL (TAM) TERHADAP PENERIMAAN KRS ONLINE (STUDI KASUS : Mahasiswa Ilmu Komputer Universitas Bina Darma Palembang)', *Jurnal Imiah MATRIK*, 16(2), pp. 1–9, 2014.

Hackl, W. O., Hoerbst, A. and Ammenwerth, E., '"Why the hell do we need electronic health records?": EHR acceptance among physicians in private practice in Austria: A qualitative study', *Methods of Information in*

Medicine, vol. 50, no.1, pp. 53–61, 2011. doi: 10.3414/ME10-02-0020.

Harsono, A., 'Sistem Informasi Manajemen Rumah Sakit Umum Daerah (SIM-RSUD) Terintegrasi Di Provinsi', *Eksplora Informatika*, 5, pp. 11–22, 2015.

Holden, R. J. and Karsh, B. T., 'The Technology Acceptance Model: Its past and its future in health care', *Journal of Biomedical Informatics*. Elsevier Inc., vol. 43,no.1, pp. 159–172, 2010. doi: 10.1016/j.jbi.2009.07.002.

Kusumawati, N. I. and Sulistyawati, S. , 'Acceptance of Health Information System for Public Health Centre in North Borneo, Indonesia', *International Journal of Public Health Science (IJPHS)*, vol. 7, no.3, p p. 168 , 2018. doi: 10.11591/ijphs.v7i3.14315.

Maya, O., 'Pengembangan Kapasitas Organisasi Melalui Penerapan Sistem Informasi Manajemen Rumah Sakit (SIMRS) Untuk Meningkatkan Mutu Pelayanan Kesehatan di RSUD dr. Mohamad Soewandhie Surabaya', *Kebijakan dan Manajemen Publik*, 6(April), pp. 1–8, 2018.

Priyanka S and Kumar MA., 'Astudy on Adoption of E-Reccrukment Using TechnologyAcceptanceModel (TAM) With Reference to Graduating Students in IniversitiesinBahrain', *International Journal of Advance Research in Computer Scienceand Management Studies*, vol. 2, no.9, pp. 2321–7782, 2014. .

Puspita, R. (2021) *Kemenkes: Baru 1.000 Rumah Sakit Aktif Isi Siranap*, *Republika Online*. Available at: https://www.republika.co.id/berita/qwiwj0428/kemenkes-baru-1000-rumah-sakit-aktif-isi-siranap (Accessed: 11 July 2022).

Putra, D. S. H. and Kurniawati, R. , 'Evaluasi Sistem Informasi Manajemen Rumah Sakit Dengan Metode Technology Acceptance Model (TAM) di Rumah Sakit X', *J-REMI : Jurnal Rekam Medik dan Informasi Kesehatan*. Politeknik Negeri Jember, 1(1), pp. 31–36, 2019. doi: 10.25047/j-remi.v1i1.1933.

Sayekti, F. and Putarta, P., 'Penerapan Technology Acceptance Model (TAM) Dalam Pengujian Model Penerimaan Sistem Informasi Keuangan Daerah', *Jurnal Manajemen Teori dan Terapan| Journal of Theory and Applied Management*, vol. 9, no.3,pp. 196–209, 2016. doi: 10.20473/jmtt.v9i3.3075.

Setyohadi, D. B. and Purnawati, N. W., 'An investigation of external factors for technological acceptance model of nurses in Indonesia', *IOP Conference Series: Materials Science and Engineering*, vol. 403, no.1, 2018. doi: 10.1088/1757-899X/403/1/012064.

Srinivasan, D. (2013) *Impact of Healthcare Informatics on Quality of Patient Care and Health Services*.

Supriyati and Cholil, M., 'Aplikasi Technology Acceptance Model pada Sistem Informasi Manajemen Rumah Sakit', *Jurnal Bisnis & Manajemen*, vol. 17, no.1,pp. 81–102, 2017. doi: https://doi.org/10.20961/jbm.v17i1.12308.

Susilo, B. B. B. and Mustofa, K. , 'Evaluasi Penerapan Sistem Informasi Manajemen Rumah Sakit (SIMRS) di RSUD Praya Kabupaten Lombok Tengah Nusa Tenggara Barat', *Journal of Information Systems for Public Health*, 4(1), pp. 1–15, 2019.

Yazdi-Feyzabadi, V., Emami, M. and Mchrolhassani, M., 'Health Information Sustem in Primary Health Care: The Challenges and Barriers from Local Provides, Perspective of an Area in Iran', *Int J Prev MedJ Prev Med*, 6(57), 2015. .

Biography

Aris Yulianto is a Researcher from National Research and Innovation Agency. Before, he was exposed to health research at the National Institute of Health Research and Development, Ministry of Health, Republic of Indonesia. He studied Chemistry at the Faculty of Mathematics and Natural Sciences, Brawijaya University. He is now a student at the Master of Primary Health Care Management, ASEAN Institute for Health Development, Mahidol University. His passion concerns traditional health service, disease registry and health information system (HIS).

Lelly Andayasari is currently employed at the National Research and Innovation Agency as researcher. From 1998-2021 she worked at the National Institute of Health Research and Development, Indonesian Ministry of Health. She received a magister of health in 2003 at the Gajah Mada university. Her research interests mainly concern on noncommunicable diseases and health Services.

Ahmad Subhan is currently a lecturer at the Faculty of Social and Political Sciences, Nurdin Hamzah University, Jambi. He was a researcher at the Jambi Provincial Government Research and Development Agency from 2010 to 2019. He graduated from the Doctoral program in government administration at Padjadjaran University in 2017. His research interest are in, public policy, governance, and institutional networks.

Novia Susianti is currently employed at the National Research and Innovation Agency as a researcher. From 2016-2020 she worked at the Jambi Province Research and Development Agency, and in 2021 at the National Institute of Health Research and Development, Indonesian Ministry of Health as researcher. She received a magister of biomedic in Andalas University in 2007. Her research interests mainly concern with public health, health services and management.