EVALUATION OF THE UTILIZATION OF ELECTRONIC-BASED RECORDING AND REPORTING SYSTEMS AT PUBLIC HEALTH CENTERS (PUSKESMAS)

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Abstract. The recording and reporting system at public health centers (puskesmas) continues to develop. Until now, electronic-based system and information technology have been used in the recording and reporting system at puskesmas. In this regard, the Puskesmas Management Information System (SIMPUS) appears to be an application that helps recording and reporting activities at the public health centers. SIMPUS is expected to improve the quality of service to the community. Various studies have been conducted to analyze its use, but no direct comparison has been made on the evaluation results of the SIMPUS implementation. Therefore, this study aimed to describe different research results on evaluating the implementation of SIMPUS using the Human-Organization-Technology Fit (HOT Fit) Model. The literature review was conducted using the Google Scholar search engine and choosing the topic of evaluating the implementation of the SIMPUS using the HOT FIT Model. The selected articles should discuss SIMPUS implementation in Indonesia, provide original research, provide full text, and be published between 2012 and 2022. By using certain keywords, many articles were obtained, and seven of them met the criteria. A review of various previous research articles has suggested that the implementation of SIMPUS in various public health centers encounters various obstacles, challenges, and difficulties specifically in terms of human, organizational, and technological environment. To improve SIMPUS implementation, the researchers recommend continuous training for workers who use the system; more efforts to improve the system to make it easy to use and increase the productivity of workers; developing application features

to make the system more attractive and helpful for data recapitulation; modification of system according to the needs; regular monitoring and evaluating; establishment of policies regarding the writing process and accuracy of data input/SOPs; provision of easy-to-understand manuals; support from management; building communication groups for easy coordination; provision of technology infrastructure; and a leadership style.

Keywords: health information system, public health center, electronic-based report

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INTRODUCTION

Health information system is a set of arrangements that include data, information, indicators, procedures, devices, technology, and human resources that are interrelated and managed in an integrated manner to provide guidance on taking necessary actions or decisions in supporting development in the health sector. The assessment results of the six components of the Indonesian Health Information System based on the Health Metrics Network in 2016 were as follows: 58% for resources, 76% for indicators, 69% for data sources, 56% for data management, 72% for information products, and 84% for usage (MOH RI, 2016).

In accordance with the Regulation of the Minister of Health of the Republic of Indonesia Number 31 of 2019, the public health center's information system is an arrangement that provides information to assist the decision-making process in managing the public health center to achieve its target. Recording refers to a series of activities to document the results of observations, measurements, or calculations at every step of health effort carried out by the public health center (MOH RI, 2019b). Public health

center or puskesmas is a health service facility that organizes public health efforts and first-level individual health efforts by prioritizing promotive and preventive efforts in its working areas (MOH RI, 2019a). The Puskesmas Management Information System (SIMPUS) is an application that facilitates recording and reporting activities in a public health center. Computerized SIMPUS will significantly assist workers in presenting information quickly, accurately, and reliably. Therefore, the information presented by the public health center can be the basis for decision-making at various levels of the health system and various types of health management, improving the quality of service to the community (Hakam, 2016).

SIMPUS can simplify and accelerate services, standardize procedures and service standards, and collect accurate data and information. SIMPUS is expected to improve public health center's management more effectively and efficiently. SIMPUS data processing procedures are based on timely, accurate, complete, and effective information technology to support management decision-making processes (MOH RI, 2002). Public health center serves as the primary data source of the health information system, which plays an important role in the regional health information system. Thus, improving the quality of the health information system should start from building an information system in public health center as a basic service unit producing health data.

Evaluation of information systems is a process to explore and find out the extent to which an information system implementation activity, whether in the aspects of perceptions, users, organizations, or information and technology systems (MOH RI, 2002). One of the models to evaluate information systems is the Human Organization Technology Fit (HOT Fit) Model. The important components in this evaluation model are humans, which includes system use and user satisfaction; organization, which includes organizational structure and environment; and technology, which includes system, information, and service quality (Khotimah and Lazuardi, 2018).

Whether the implementation of SIMPUS is in accordance with the operational needs of health services and management at the public health

center, this study, therefore, examined different SIMPUS implementations in various parts of Indonesia. The purpose of this literature review was to evaluate the implementation of the SIMPUS with the Hot Fit Model.

MATERIALS AND METHODS

This study serves as a literature review. A literature review is a methodological tool to evaluate a theory or test the validity or accuracy of a particular theory (Snyder, 2019). The systematic review is a method used to interpret and evaluate previous research. Researchers can search for references based on keywords that will be used in research (Priharsari, 2022). To identify the significant researches in the field of management system information and Hot Fit method, databases such as Google Scholar were searched. The keywords used for the search included a combination of 'evaluation', 'puskesmas information management system (SIMPUS)' and 'Hot-Fit method'. The inclusion criteria of the search results of articles according to the purpose of this study were set as follows: (a) the article was either the original manuscript or systematic review, (b) containing aspects of puskesmas information system, (c) full text article, and (d) the article should be published during 2012-2022. A total of 176 articles met the inclusion criteria. After a second consideration of all selected documents, there were 11 articles that related to the aims of this study. Therefore, 11 articles were further reviewed.

RESULTS

The result will be presented into three sections, namely human factor, organization factor and technology factor.

Human factor

Studies across districts in Indonesia, namely Demak, Jakarta,

Bogor, Mulyorejo and also at Riau Province, on the correlation between human factors and puskesmas information management systems (SIMPUS) revealed a positive correlation between human factors and the net benefits of puskesmas health information system (Aulia, 2017; Hikmah *et al*, 2021; Fauzan and Noviandi, 2020; Fitriana, 2020; Delfia *et al*, 2022). However, the studies conducted in several big cities indicated satisfaction levels of approximately 50% (Delfia *et al*, 2022). Many registration clerks were still not satisfied with the application. It is understandable because the clerks' knowledge and skills in operating computer applications were low.

Another study found that although the level of user satisfaction did not reach a relatively high number, the application was used regularly (Hikmah *et al*, 2021). The human factors determining the proper use of SIMPUS are the experience and acceptance of the workers towards the application. On the contrary, the unfavorable factor is the low knowledge and satisfaction of the workers. The human aspect affects the level of satisfaction of the SIMPUS (Aulia, 2017; Hikmah *et al*, 2021; Fauzan and Noviandi, 2020; Fitriana, 2020; Delfia *et al*, 2022).

Organization

The organizational factors that determine the proper use of SIMPUS are the ease of adopting technology, the habit of sharing information, active participation in proposing improvements, teamwork, top management feedback, and the availability of full term (SOPs). Organizational factors that have not been taken into account properly include data rechecking and lack of routine evaluations (Thenu *et al*, 2016; Hikmah *et al*, 2021; Fauzan and Noviandi, 2020; Fitriana, 2020; Cahyani *et al*, 2020).

Compatibility among humans, technology, and organization is highly influential for information systems. It is expected that there will be regular training related to SIMPUS for easier use of the application (Fitriana, 2020; Hikmah *et al*, 2021; Cahyani *et al*, 2020)

Table 1
Result of article review

Reference	Research method	Study cite	Relevant factor	Result
Hikmah *et al* (2021)	Quantitative	Dempet Health Center and Gajah 2 Health Center, Demak Regency	Human factors	The human factor in the use of information systems was still lacking at 67.4%. Human factors choose a positive relationship with the net benefit of using information systems with a p-value = 0.021 and r = 0.351. The better the human factor in using information systems, the higher the net benefit obtained.
Fauzan and Noviandi (2020)	Quantitative	Johar Baru Health Center, Central Jakarta	Human factors	Half of the service quality provided is good at 50.63%. Officers still need to adapt and carry out training related to the use of information systems so that service delays will be reduced.
Fitriana *et al* (2020)	Quantitative	Tanah Sareal Health Center, Bogor	Human factors	System usage has a significant relationship with SIMPUS performance, information system users feel that using the information system is easy and meets their needs.
Fitriani *et al* (2022)	Literature review	Public health centers in Indonesia	Human factors	The implementation of a health service information management system that uses the human organization fit model (Hot Fit model) in various health centers in Indonesia has various challenges, obstacles, and difficulties. There needs to be training for officers who work using the information system supported by a system that is easy to learn.

Table 1 (cont)

Reference	Research method	Study cite	Relevant factor	Result
Sari *et al* (2020)	Quantitative	Health centers in Riau Province	Human factors	The low knowledge of the registration officer was caused by low education levels. It can be seen that most of the registration officers in the primary clinics in Riau Province were senior high graduates. The unreadiness of the P-care users can also influence the level of user satisfaction. The acceptance and the resistance towards the application were caused by low knowledge of the application users. Consequently, it extremely influenced the action of using the application, especially when an error occurred on the application. Hence, humans (knowledge, attitude, and the action of using the application) could influence the satisfaction of the P-care users.
Aulia (2017)	Descriptive	Mulyorejo Health Center, Surabaya	Human factors	The use of the SIMPUS application at the Mulyorejo Health Center in Surabaya for patient registration has not been optimal. The condition human factor that determines the suitability of using the SIMPUS application is the experience and acceptance of the SIMPUS application staff. Conversely, what is not good is the knowledge and satisfaction of officers. So that there is a need for training for officers in the use of information systems

Table 1 (cont)

Reference	Research method	Study cite	Relevant factor	Result
Hikmah *et al* (2021)	Quantitative	Dempet Health Center and Gajah 2 Health Center, Demak Regency	Organization	Based on the spearman correlation test, it was found that there was no relationship between organizational factors and net-benefit on information system user officers (p-value = 0.392, r = 0.194). It is recommended to increase organizational factors in SIKP; it is necessary to carry out periodic monitoring and evaluation both from within the puskesmas and from the District Health Office so that it can be monitored for certain the use of the SIKP application properly.
Fauzan and Noviandi (2020)	Quantitative	Johar Baru Health Center, Central Jakarta	Organization	Organizational factors that have not been taken into account properly include data rechecking and lack of routine evaluations. Compatibility among humans, technology, and organization is highly influential for information systems.
Fitriana *et al* (2020)	Quantitative	Tanah sareal Health Center, Bogor	Organization	The organizational factors that determine the proper use of SIMPUS are the ease of adopting technology, the habit of sharing information, active participation in proposing improvements, teamwork, top management feedback, and the availability of SOPs. It is expected that there will be regular training related to SIMPUS for easier use of the application.

Table 1 (cont)

Reference	Research method	Study cite	Relevant factor	Result
Fitriani *et al* (2022)	Literature review	Public health centers in Indonesia	Organization	It is necessary to monitor and evaluate routine use, make policies regarding the process of writing and the accuracy of data input, create easy-to-understand manuals, and various efforts to improve.
Sari *et al* (2020)	Quantitative	Health centers in Riau Province	Organization	A leadership style with support from top management, and supports from the staff was a vital part of measuring the success of the system or application used. Like P-care that was used by the primary clinic in Riau province, the role of a leader was very important for decision-making in monitoring, planning, implementing, and decision-making in applying P-care. Besides, good communication between supervisors and colleagues was required, especially when an error occurred and there was a problem in data entry.

Table 1 (cont)

Reference	Research method	Study cite	Relevant factor	Result
Cahyani *et al* (2020)	Quantitative	Gatak Health Center	Organization	Support from the organization is good, support from all aspects in the form of facilities for computer needs and its completeness in planning, recording, and reporting is done online. Organizational policies greatly determine the development of information systems, it can also be said that the success or failure of the application of information depends on the policies and support provided by the leadership. One form of management support is providing facilities in the form of training and assisting system users when facing related problems.
Hikmah *et al* (2021)	Quantitative	Dempet Health Center And Gajah 2 Health Center, Demak Regency	Technology	62.8% of SIKP users feel that the technological factor in using SIKP is still lacking. There is no relationship between organizational factors and net benefit for SIKP user officers (p-value = 0.994, r = 0.001). There needs to be an increase in technological factors by changing SIKP to an online basis to facilitate P-care online input and future bridging system with the health office.

Table 1 (cont)

Reference	Research method	Study cite	Relevant factor	Result
Fauzan and Noviandi (2020)	Quantitative	Johar Baru Health Center, Central Jakarta	Technology	The quality of the SIKDA Optima system in the Johar Baru Jakarta Health Center area was already said to be good at 67.09% and not good at 32.91% this is because the SIKDA Optima System experienced an error (53.2%). The information quality category also showed a good performance of 62.03% and not good at 37.97%, this is because the information generated by SIKDA Optima was incomplete and not detailed (29.1%).
Fitriana *et al* (2020)	Quantitative	Tanah Sareal Health Center, Bogor	Technology	System quality has a significant relationship with SIMPUS performance. A system can improve the performance of an information system if the system is of good quality in the sense that the system is designed to meet user satisfaction through the ease of using the system.
Fitriani *et al* (2022)	Literature review	Public health centers in Indonesia	Technology	The public health center information system should be improved. The features of the system should more attractive and facilitate data recapitulation and modifications.

Table 1 (cont)

Reference	Research method	Study cite	Relevant factor	Result
Aulia (2017)	Descriptive	Mulyorejo Health Center, Surabaya	Technology	Technological factors that have not gone well are system speed, completeness of information, application quality assurance, repair response speed, and troubleshooting follow-up. Technological factors that are already running well include applications that are easy to use, easy to learn, flexible, accurate, and available whenever needed. There is a need for system development to avoid data errors.

P-care: Primary care application; r: Spearman correlation; SIKDA: Regional health information system; SIKP: Health center information system; SIMPUS: Health center management information system; SOP: standard operating procedures

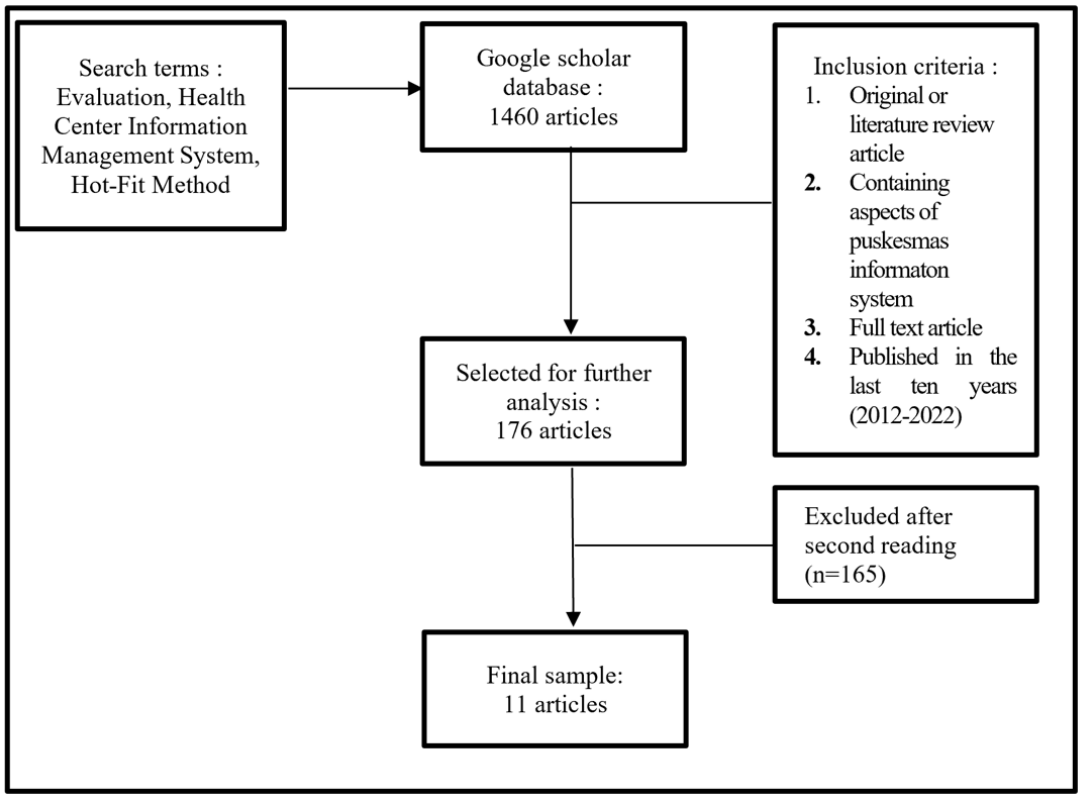

Fig 1 - Flow chart article screening

Technology

The function of information technology is to provide information as needed. Technological factors that have been taken into account properly include applications that are easy to use, easy to learn, flexible, accurate, and always available. Technological factors that have not been taken into account properly are system speed, completeness of information, application quality assurance, repair response speed, and follow-up for handling disturbances (Nurhayati and Hidayat, 2015; Thenu *et al*, 2016; Aulia, 2017; Hikmah *et al*, 2021; Fauzan and Noviandi, 2020; Fitriani *et al*, 2022; Sari *et al*, 2020; Delfia *et al*, 2022; Cahyani *et al*, 2020).

Other studies indicated a correlation between system use and net benefit, between user satisfaction and net benefit, and between the organization and net benefit (Fauzan and Noviandi, 2020; Fitriani *et al*, 2022; Sari *et al*, 2020; Delfia *et al*, 2022; Cahyani *et al*, 2020). Moreover, it was found that the quality of the information produced was not accurate and incomplete since it did not contain service data at public health sub-center and village health polyclinic. The information accuracy and completeness were important issues in SIMPUS usage (Nurhayati and Hidayat, 2015; Thenu *et al*, 2016; Aulia, 2017; Hikmah *et al*, 2021; Fauzan and Noviandi, 2020; Fitriani *et al*, 2022; Sari *et al*, 2020; Delfia *et al*, 2022; Cahyani *et al*, 2020; Jambago *et al*, 2022).

DISCUSSION

According to the evaluation results of the implementation of SIMPUS using the Hot-Fit Model from 11 journals based on the predetermined inclusion criteria, it can be concluded that there was a correlation between humans, organizations, and technology and the benefits of SIMPUS. Two articles stated that there was no correlation between the organization and the benefits of SIMPUS. HOT-Fit Model has three aspects with different dimensions in each aspect. In the technological aspect, there are three dimensions: system quality, information quality, and service quality. In the human aspect, there are two dimensions: the use of the system and user satisfaction. In the organizational aspect, there are two dimensions: structure and environment. The application of information management systems can be the key to capturing patient health information, supporting clinical decisions, and reporting the quality of action to inform quality improvement efforts and to facilitate treatment costs. Users of the system can be assessed based on the work effect, system efficiency and effectiveness, communication, and low error rate by controlling expenses and costs. "Fit" is measured and analyzed using three factors, namely people, organization, and technology.

The human factor can be seen from the aspect of system user and user satisfaction. System user variables include the experience, knowledge, and acceptance of the respondents to SIMPUS, and user satisfaction variables include the benefits received by SIMPUS users (Aulia, 2017). There are direct benefits obtained from using health information system, including effectiveness, success in reducing errors, effects on their work, and fewer budgets. The users admitted that the health information system facilitated their process of finding information and eased their routine work (Delfia *et al*, 2022). The human variable requires continuous training to increase knowledge about the system and provide guidance on implementing the system so it can be applied effectively (Thenu *et al*, 2016; Fitriani *et al*, 2022; Purnama *et al*, 2020; Aulia, 2017). The absence of routine monitoring and a team that monitors the implementation of the system appears to be the obstacle encountered in the field (Thenu *et al*, 2016).

Organizational factors include organizational structure and organizational environment. The organizational structure affects not only the benefits of the system but also the organizational environment. Increasing the value of the organizational structure will also increase the environmental impact of the system's organization (Delfia *et al*, 2022). Another study states that organizational factors include organizational structure variables with sub-variables of organizational culture, teamwork, management support, and standard operating procedures (SOPs). Variables of organizational culture include the indicators of ease of access in adopting technology, the habit of sharing information, the habit of rechecking the data entered, an active role in the organization, which greatly determines the development of information systems. In other words, the success or failure of the application of information depends on the policies and support provided by the leaders or management in the organization (Cahyani *et al*, 2020). The organizational environment must help align problems that may occur during the implementation of information systems to reduce problems in controlling change. Support from top management and staff are important parts of measuring the success of the system (Bandiyono and Naufal, 2020; Erlirianto

et al, 2015). The management must formulate plans and policies related to the system, motivate the workers, as well as build effective cooperation and communication between management and workers in the field (Jambago *et al*, 2022; Purnama *et al*, 2020; Aulia, 2017; Delfia *et al*, 2022).

Technological factors consist of system quality variables, information quality, and SIMPUS application service quality. System quality variables include system speed in service and information processing, ease of using SIMPUS, ease of learning SIMPUS, the flexibility of changing SIMPUS, and security of accessing SIMPUS (Aulia, 2017). The function of information technology is to make the information needed more available (Delfia *et al*, 2022). A system is considered effectively run if it is able to meet the needs and conditions of information quality to users in the company, both individually and in groups. The information is regarded as quality if it demonstrates accurate, punctual, complete, and concise characteristics (Ikhsan and Bustamam, 2016). It was found that there was a correlation between system quality and SIMPUS performance since the system is designed to content user satisfaction through seamless use. Therefore, the users of the information system can experience easy use of the information system fitting their needs (Fitriana *et al*, 2020). However, several setbacks in information systems remain to emerge due to system errors, network issues, and incomplete and unclear generated information (Fauzan and Noviandi, 2020; Thenu *et al*, 2016; Fitriani *et al*, 2022; Jambago *et al*, 2022; Purnama *et al*, 2020; Aulia, 2017).

In summary, studies on the use of SIMPUS from various research results suggested that, in general, the implementation of SIMPUS in a wide range of regions has not achieved maximum benefits in supporting the management process of puskesmas. In the human aspect, users have already been capable of operating SIMPUS, but some identified it as dissatisfied. This dissatisfaction is primarily due to a lack of skills and support from the system, which is sometimes not in accordance with reporting needs comprehensively. Organizational aspects turn out to be critical in supporting SIMPUS to run seamlessly. Further, organizational aspects requiring more

attention cover the monitoring and evaluation of system use, funding support for maintenance, and support for regular training for officers. On the other hand, the critical aspects of the technological factor suggest the ease of use and its capacity to satisfy the need for appropriate and quality information. Therefore, in general, the SIMPUS implementation remains limited in the operational service aspect; the net benefit in decision-making support remains unsatisfactory.

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CONFLICT OF INTEREST DISCLOSURE

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REFERENCES

Aulia NR. Human, organizational, and technology factors in using the SIMPUS application for patient registration at the Mulyorejo Health Center Surabaya, 2017 [cited 2021 May 18]. Available from: URL: https://e-journal.unair.ac.id/IJPH/article/view/7598/4494 [in Indonesian]

Bandiyono A, Naufal M. Hot-fit model framework in central government employee data management systems. *Int J Sci Technol Res* 2020; 9: 1780-7.

Cahyani APP, Hakam F, Nurbaya F. Evaluation of the implementation of the Health Center Management Information System (SIMPUS) with the HOT-Fit method at the Gatak Health Center, 2020 [cited 2021

June 01]. Available from:. URL: https://journal.univetbantara.ac.id/index.php/jmiak-rekammedis/article/view/1003/711 [in Bahasa Indonesian]

Delfia F, Adi K, Purnami CT. Evaluation of Health Information System with HOT-Fit Model: literature review, 2022 [cited 2022 Jul 18]. Available from: URL: https://jurnal.unismuhpalu.ac.id/index.php/MPPKI/article/view/2344/2129 [in Indonesian]

Erlirianto LM, Ali AHN, Herdiyanti A. The implementation of the Human, Organization, and Technology-Fit (HOT-Fit) framework to evaluate the electronic medical record (EMR) system in a hospital. *Procedia Comp Sci* 2015; 72: 580-7.

Fauzan A, Noviandi N. Evaluation of Optima Regional Health Information System with HOT-Fit on technology aspects approach in Johar Baru Health Center Jakarta. *J Int Comp Health Inf* 2020; 1: 9-14.

Fitriana BRD, Hidana R, Parinduri SK. Analysis of the implementation of the Puskesmas Management Information System (SIMPUS) with the Human Organization Technology (HOT)-FIT Model at the Tanah Sareal Puskesmas, Bogor City in 2019, 2020 [cited 2021 May 20]. Available from: URL: https://www.researchgate.net/publication/348256811_ANALISIS_PENERAPAN_SISTEM_INFORMASI_MANAJEMEN_PUSKESMAS_SIMPUS_DENGAN_MODEL_HUMAN_ORGANIZATION_TECHNOLOGY_HOT-FIT_DI_PUSKESMAS_TANAH_SAREAL_KOTA_BOGOR_TAHUN_2019 [in Indonesian]

Fitriani, Purnami CT, Prasetjo AB. Analysis of the evaluation P-Care information system using the Hot-Fit model method at public health centers in Indonesia: literature review, 2022 [cited 2022 Jun 20]. Available from: URL: https://jurnal.unismuhpalu.ac.id/index.php/MPPKI/article/view/2280/2095 [in what language] [in Indonesian]

Hakam F. Health information system analysis, design and evaluation. 2016. Yogyakarta, Indonesia: Gosyen Publishing; 2016. [in Indonesian]

Hikmah A, Mawarni A, Dharminto D. Relationship between human, organizational and technological factors on net-benefit of the attitudes of Demak Regency, 2021 [cited 2022 May 26]. Available from: URL: https://ejournal3.undip.ac.id/index.php/jkm/article/download/29611/25351 [in Indonesian]

Ikhsan M, Bustamam. The effect of top management support and technical ability of accounting information system operators on the quality of accounting information (Study on microfinance institutions in Banda Aceh City), 2016 [cited 2020 June 01]. Available from: URL: https://media.neliti.com/media/publications/188234-ID-pengaruh-dukungan-manajemen-puncak-dan-k.pdf [in Indonesian]

Jambago NS, Ennimay, Priwahyuni Y, Yunita J, Jepisah D. Implementation of the e-Puskesmas application with HOT-Fit approach in Siak District (Qualitative study), 2022 [cited 2022 May 20]. Available from: URL: https://jurnal.unimus.ac.id/index.php/jkmi/article/view/8557/pdf [in Indonesian]

Khotimah A, Lazuardi L. Evaluation of the implementation of the data integration concept using DHIS2 at the Ministry of Health, 2018 [cited 2021 June 01]. Available from: URL: https://jurnal.ugm.ac.id/jisph/article/view/33959/29915 [in Indonesian]

Ministry of Health Republic of Indonesia (MOH RI). Indonesian health profile, 2016 [cited 2021 May 18]. Available from: URL: https://www.kemkes.go.id/downloads/resources/download/pusdatin/profil-kesehatan-indonesia/Profil-Kesehatan-Indonesia-2016.pdf [in Indonesian]

Ministry of Health Republic of Indonesia (MOH RI). National Health Information System Development Strategy Policy (SIKNAS): Decree of the Minister of Health of the Republic of Indonesia No. 511/MENKES/SK/V/2002. Jakarta, Indonesia: Ministry of Health; 2002. [in Indonesian]

Ministry of Health Republic of Indonesia (MOH RI). Regulation of the Minister of Health of the Republic of Indonesia Number 43 of 2019 about community health centers, 2019a [cited 2021 May 20]. Available

from: URL: https://puskesmaskepung.kedirikab.go.id/Buku/PERMENKES-NO-43-TAHUN-2019-TENTANG-PUSKESMAS_ID32.html [in Indonesian]

Ministry of Health Republic of Indonesia (MOH RI). Regulation of the Minister of Health of the Republic of Indonesia (PMK/PERMENKES) Number 31 of 2019 concerning puskesmas information system, 2019b [cited 2021 June 01]. Available from: URL: https://www.hakayuci.com/2020/02/pmk-permenkes-nomor-43-tentang-puskesmas-tahun-2019.html [in Indonesian]

Nurhayati S, Hidayat N. Evaluation of health center management information system based on the Hot-Fit method in the work area of the Banyumas District Health Office, 2015 [cited 2021 June 01]. Available from: URL: https://repository.bbg.ac.id/bitstream/435/1/FIKI-2015.pdf [in Indonesian]

Priharsari D. Systematic literature review in the field of information systems and computer science, 2022 [cited 2022 May 20]. Available from: URL: https://jtiik.ub.ac.id/index.php/jtiik/article/view/3884/pdf [in Indonesian]

Purnama DH, Purwanto, Khotimah H, Latief I. Design and implementation of supply chain management in plastic packaging production, 2020 [cited 2021 June 01]. Available from: URL: https://iontech.ista.ac.id/index.php/iontech/article/view/52/31 [in Indonesian]

Sari TP, Hamzah Z, Trisna WV, Purwati AA. Human-organizationtechnology (HOT) analysis on the primary care application users. *Espacio* 2020; 41: 6.

Snyder H. Literature review as a research methodology: an overview and guidelines. *J Bus Res* 2019; 104: 333-9.

Thenu VJ, Sediyono E, Purnami CT. Evaluation of the public health center management information system to support the application of generic SIKDA using Hot Fit method in Purworejo Regency, 2016 [cited 2021 June 02]. Available from: URL: https://media.neliti.com/media/publications/113225-ID-evaluasi-sistem-informasi-manajemen-pusk.pdf [in Indonesian]