

## **SIMRS Analysis In The Patient Registration Section Using The PIECES Method At Panti Waluyo Hospital**

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**Abstract** — The rapid development of today's technology has a big influence on people's lives and in the health sector. The application of this technology plays an important role in today's health sector. Almost all health institutions utilize information systems in their services. A hospital is a health service that requires fast, accurate and reliable service when serving patients. SIMRS is an information system that is applied digitally in the process of providing health services to patients, to obtain accurate data. To make the analysis easier, one of the methods used for analysis is the *PIECES framework*, where this framework outlines 6 analysis factors consisting of *performance, information, economy, control, efficiency and service*. Based on the results of SIMRS analysis research in the Outpatient Registration section using the PIECES Method at Panti Waluyo Hospital, it can be concluded that: 1. SIMRS in terms of Information, Economy, Control (Security), Efficiency, The service supports the service and is in accordance with the patient's needs. 2. In terms of performance, it is very supportive of service, but obstacles are still found when SIMRS experiences a server down error, service takes 20 minutes when it should only take less than 5 minutes.

**Keywords** – SIMRS, Patient Registration, Hospital, PIECES

**Abstrak** — Pesatnya perkembangan teknologi masa sekarang sangat berpengaruh di kehidupan masyarakat serta dalam bidang kesehatan. Penerapan teknologi ini berperan penting di dalam bidang kesehatan masa kini. Hampir seluruh institusi kesehatan memanfaatkan sistem informasi di dalam pelayanannya. Rumah sakit adalah suatu layanan kesehatan yang membutuhkan pelayanan cepat, akurat serta handal saat pelayanan kepada pasien. SIMRS adalah sistem informasi yang diterapkan secara digital dalam proses pelayanan kesehatan kepada pasien, untuk mendapatkan data-data yang akurat. Untuk mempermudah cara melakukan analisis, salah satu metode yang digunakan untuk analisis adalah dengan kerangka *PIECES*, dimana kerangka ini menguraikan 6 vaktor analisis yang terdiri dari *performance, information, economy, control, efficiency dan service*. Berdasarkan hasil penelitian Analisis SIMRS pada bagian Pendaftaran Pasien Rawat Jalan dengan Metode PIECES di Rumah Sakit Panti Waluyo, dapat di simpulkan bahwa: 1. SIMRS dari segi Information (Informasi), Economy (Ekonomi), Control (Keamanan), Efficiency (Efisiensi), Service (Pelayanan) sudah mendukung dalam pelayanan dan sudah sesuai dengan apa yang kebutuhan pasien. 2. Dari segi Performance (Kinerja), sudah sangat mendukung pelayanan, namun masih ditemukan hambatan saat SIMRS mengalami erorr server down pelayanan menjadi lama 20 menit yang seharusnya Cuma < 5 menit.

**Kata kunci** – SIMRS, Pendaftaran Pasien, Rumah Sakit, PIECES

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### **1. INTRODUCTION**

The rapid development of today's technology has a big influence on people's lives and in the health sector [1]. The application of this technology plays an important role in today's health sector. Almost all health institutions utilize information systems in their services. Service quality is the main factor in the success of service institutions

Health [2].

A hospital is a health service that requires fast, accurate and reliable service when serving patients [3]. In the article PERMENKES No.82 of 2013 Article 4 paragraph 2 which states that the development of a Hospital Information System must

able to support and improve quality in a hospital institution [4].

Document processing in a hospital agency is a quality that can support increased development of



information systems in the hospital itself [5]. Document processing which is still manual has the disadvantage that it takes a long time, accuracy is still fragile and is not accepted because of the possibility of large errors occurring [6].

Today's technological developments make it easier to process data from manual paper to electronic [7]. It doesn't take a long time to process the data. As a health installation, it must be responsible for the health and services to patients [8].

Accurate information if processed will result in accurate data. Accurate data will be useful for decision making. So that in its implementation health installations are required to implement an Information System (SIMRS). It is stipulated in [9] that every health installation must implement services or reporting in the form of an information system (SIMRS) [10].

SIMRS is an information system that is applied digitally in the process of providing health services to patients, to obtain accurate data [11]. SIMRS plays a very important role in supporting the entire process in the hospital [12].

Information systems are very useful for improving the performance of officers in a health installation in making decisions in formulating strategies so that analysis and evaluation are needed [13]. To make the analysis easier, one of the methods used for analysis is the *PIECES framework*, where this framework outlines 6 analysis factors consisting of *performance, information, economy, control, efficiency and service* [14]. The results of the *PIECES analysis* are weaknesses that become recommendations for improvements to the system to be developed or for improvements to previous systems [15].

Based on a preliminary study in the form of observations and interviews at Panti Waluyo Hospital by the head of the medical records unit on 07 December 2023, Panti Waluyo Hospital has been running SIMRS with the web version since 01 September 2009. The implementation of SIMRS at Panti Waluyo Hospital still finds connection errors and downtime. time. From this problem, the researcher took the research title "SIMRS Analysis in the Patient Registration Section Using the PIECES Method at Panti Waluyo Hospital ". To analyze existing problems so that you can make good decisions.

## 2. RESEARCH METHODS

The research method used in this research is a qualitative descriptive method.

## 3. RESULTS

In this study, researchers used the *PIECES method* to observe the implementation of SIMRS in the outpatient registration section at Panti Waluyo Hospital using interview techniques with officers, with the results:

### a. Performance Analysis (Performance)

No	Indicator	Results
1.	<i>Throughput</i>	According to respondents, the SIMRS function in outpatient registration has been supportive hospital needs
2.	<i>Response times</i>	According to respondents, the speed of SIMRS in the patient registration section is relatively fast, but obstacles are also found if SIMRS experiences a service <i>server down error</i> be long

### a. Information Analysis (Information)

No	Indicator	Results
1.	Presentation of information	According to respondents, SIMRS really helps officers in providing services to patients, the system is easy to understand by officers
2.	<i>Flexibility</i>	According to respondents, the information produced by the system is very complete and has been adapted to the needs of the medical records unit

### b. Economic Analysis (Economics)

No	Indicator	Results
1.	<i>Reusability</i>	According to respondents, with SIMRS the payment process becomes more focused and fast
2.	<i>Resources</i>	According to respondents, the costs incurred are costs for <i>servers</i> and <i>maintenance</i>

### c. Control Analysis (Security)

No	Indicator	Results
1.	<i>Integrity</i>	According respondents to SIMRS makes control easier for officers

2.	Security	Officers have access rights, namely <i>username</i> and <i>password</i> which have been differentiated based on their respective authorities
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d. *Efficiency Analysis (Efficiency)*

No	Indicator	Results
1.	<i>Usability</i>	According to respondents, SIMRS users are quite easy to understand
2.	<i>Maintainability</i>	According to respondents, the system difficulty level is medium, not too difficult, easy to understand and the system is efficient

e. *Service Analysis (Service)*

No	Indicator	Results
1.	<i>Accuracy</i>	According to informants, SIMRS can produce accurate information
2.	<i>Reliability</i>	According to the informant, SIMRS has been updated regularly and the available system can serve user needs
3.	<i>Simplicity</i>	According to the informant, SIMRS can be operated easily and is very helpful in service

## 4. DISCUSSION

The discussion of the PIECES method is:

1. *Performance Analysis (Performance)*

a. *Throughput* (Total production)

Total production or *throughput* obtained from respondents, namely SIMRS in the outpatient registration section already supports the system required by the hospital. Based on previous researchers from *throughput indicators* (results), SIMRS can produce the output required by users (Daherja, 2020).

b. *Response time* (Response time) *The response time* in SIMRS is quite fast, the response time is good, namely less than 5 minutes, it is also easier for officers and is helped by the SIMRS system itself. Good category or very fast service if the service is <5 minutes, sufficient category is 5-10 minutes, bad category is >10 minutes (Ilhamjaya, 2020).

2. *Information Analysis (Information)*

a. Presentation of information (completeness of information) The information produced by SIMRS is

complete and meets the needs of both staff and patients. So officers are very helpful in completing each process easily.

b. *Flexibility* (Information flexibility)

The existence of SIMRS really helps officers in obtaining the information needed for service to patients, the system provides information that is easy to understand by officers and patients.

3. *Economic Analysis* (Economics)

a. *Reusability*, amount of output (can be reused). SIMRS can make payments easier and faster.

b. *Resources* (Resources)

The ease of accessing the existing information system further increases the smoothness of the input process in the system, the costs incurred are costs for the server and system maintenance if the system experiences an error.

4. *Control Analysis* (Security)

a. *Integrity*

Each officer is given SIMRS access rights in the form of a username and password based on their respective authority.

b. *Security*

SIMRS can make it easier for officers in the service process, the information system is managed by the IT unit, therefore if there is an error the IT team will correct it.

5. *Efficiency analysis*

Based on interviews conducted with respondents, SIMRS has operated very well, officers said that using SIMRS is quite easy to understand the system, so it can be said that SIMRS is efficient.

6. *Service Analysis* (Service)

Based on the results of interviews with respondents, the information system has been updated regularly and the information system has made service and patient needs easier, so that it can produce accurate information, the information system at Panti Waluyo Hospital can be operated easily and is very helpful in providing services.

## 5. CLOSING

### Conclusion

1. SIMRS in the Outpatient Registration section at Panti Waluyo Hospital in terms of *Information, Economy, Control* (Security), *Efficiency, Service* has supported the service and is in accordance with what the patient needs.

2. In terms of *performance*, it is very supportive of service, but obstacles are still found when SIMRS experiences a *server down error*, service takes up to 20 minutes, when it should only take <5 minutes.

### Suggestion

Suggestions that can be given as material for improvement for the Panti Waluyo Hospital agency and for future researchers are to upgrade the hardware and supporting devices to improve *performance so that*



errors do not occur again and for future researchers, it would be better to study in more depth what problems will be used as research to better understand what will be discussed through references from books or from previous research whose discussion resembles both variables and research methods.

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