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The effect of operational audit and implementation of internal control on the effectiveness of health services in hospitals

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Ervianawati * & Apriy Linda Diana 

Master of Management, Sekolah Tinggi Ilmu Ekonomi Indonesia Jakarta, Jakarta, Indonesia

ABSTRACT

Purpose: This study aims to examine whether operational audits and the implementation of internal controls affect the effectiveness of hospital health services.

Methods: This study included all employees at a hospital in East Jakarta. The sample was drawn by purposive sampling, resulting in 76 respondents, 65 of whom successfully returned the questionnaires. The approach used was quantitative, and data analysis was conducted through multiple linear regression using SPSS version 26.0.

Findings: The results showed that (1) Operational Audit has a positive and significant effect on Health Service Effectiveness. (2) Implementation of Internal Control on Health Service Effectiveness. (3) Operational Audit and Internal Control Implementation simultaneously positively and significantly affect the Effectiveness of Health Services.

Practical Implications: This study shows that integrating Operational Audit and Internal Control is essential to improve the effectiveness of hospital services. Operational Audit identifies system weaknesses, while Internal Control strengthens the patient service process. Combining both increases efficiency and patient satisfaction, so it needs to be part of the strategy to improve the quality of health services.

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Corresponding Author:

Ervianawati, Email: ervianaw90@gmail.com

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Abstrak

Tujuan: Penelitian ini bertujuan untuk menguji apakah audit operasional dan penerapan pengendalian internal berpengaruh terhadap efektivitas pelayanan kesehatan di rumah sakit.

Metode: Penelitian ini mencakup semua karyawan Rumah Sakit B di Jakarta Timur. Sampel diambil dengan metode purposive sampling, menghasilkan 76 responden, dengan 65 kuesioner yang berhasil dikembalikan. Pendekatan yang digunakan adalah kuantitatif, dan analisis data dilakukan melalui regresi linier berganda menggunakan SPSS versi 26.

Hasil: Hasil penelitian menunjukkan bahwa: (1) Audit Operasional berpengaruh positif dan signifikan terhadap Efektivitas Pelayanan Kesehatan. (2) Penerapan Pengendalian Intern terhadap Efektivitas Pelayanan Kesehatan. (3) Audit Operasional dan Penerapan Pengendalian Intern secara simultan berpengaruh positif dan signifikan terhadap Efektivitas Pelayanan Kesehatan.

Implikasi Praktis: Penelitian ini menunjukkan bahwa integrasi Audit Operasional dan Pengendalian Intern penting untuk meningkatkan efektivitas layanan rumah sakit. Audit Operasional mengidentifikasi kelemahan sistem, sedangkan Pengendalian Intern memperkuat proses layanan pasien. Kombinasi keduanya meningkatkan efisiensi dan kepuasan pasien, sehingga perlu menjadi bagian strategi peningkatan kualitas layanan kesehatan.

Kata Kunci: Audit operasional, penerapan pengendalian internal, dan efektivitas pelayanan kesehatan.

1. Introduction

Hospitals are crucial healthcare institutions in the health services sector and are essential in providing quality health services to the community. In a global context, the issue of health service effectiveness is increasingly urgent, along with the community's increasing need for fast, efficient, and quality services. In an era of rapid technological and information development, health institutions must adapt and improve service quality to meet patients' evolving expectations. Specifically, operational audit and internal control are two aspects that are very relevant in enhancing the effectiveness of services in hospitals. The definition of operational audit includes evaluating activities and programs to assess efficiency and effectiveness, while internal control aims to ensure established standards run hospital operations. This issue is important because the successful implementation of both aspects is directly related to patient satisfaction, which has implications for the reputation and sustainability of the hospital itself.

Previous research shows a positive relationship between operational audits, internal controls, and the effectiveness of healthcare services in hospitals. For example, research by Soetya Roes Piyajeng and Sigit Arie Wibowo (2017) and Zumrotun Nafi'ah and Sri Wiranti Setiyanti (2018) confirmed the importance of operational audit in supporting internal control. Recent research also shows that implementing operational audits and internal controls is increasingly becoming essential to service quality-oriented hospital management. However, there are analytical gaps in the information related to existing research. Some studies focus on one aspect, operational audit or internal control, without integrating them. In addition, hospitals still have not implemented effective organizational structures and adequate operational planning strategies. These weaknesses indicate the need for more comprehensive and integrated research to understand the impact of both aspects together.

This study explores the effect of operational audits and internal controls on the effectiveness of hospital health services. Its benefits are expected to make a practical contribution to hospital management in designing a more effective audit program and implementing more efficient internal controls. By doing so, hospitals can not only improve healthcare effectiveness but also increase patient satisfaction, which in turn has a positive impact on their reputation and operational sustainability.

2. Theoretical Background & Hypotheses

Operational Audit

In addition to financial audit activities, internal audits, government audits, and public accountants also carry out operational audits covering an organization's efficiency and effectiveness. According to the AICPA (American Institute of Certified Public Accountants), operational audits are intended to evaluate activities, programs, and effectiveness and identify risks and obstacles in developing recommendations for improvement.

Implementation of Internal Control

The law requires company management to establish and maintain an adequate internal control system. According to SAS No.78, "Internal control is a process performed by the board of directors, management, and other personnel of an entity designed to provide reasonable assurance regarding the achievement of objectives in the following categories: (a) reliability of financial reporting, (b) effectiveness and efficiency of operations, and (c) compliance with applicable laws and regulations.

Effectiveness of Health Services

The effectiveness of health services is a condition where the objectives to be achieved are maintenance and improvement of health, prevention and cure of disease, and restoration of health, which is carried out on time, and the benefits are truly felt by individuals, families, groups, and communities (Aina Zahwa, 2017). Quality health care is one of the satisfaction standards that affects the patient's desire to return to provide adequate health services. As is well known, patients and providers usually have different views on effective health services. Patients interpret quality and effective services if the services provided provide a sense of comfort, pleasure, and satisfaction for patients.

Hypotheses

The Effect of Operational Audit on the Effectiveness of Health Services in Hospitals

Operational audits are essential in improving the effectiveness of health services in hospitals. In a study conducted by Zumrotun Nafi'ah and Sri Wiranti in 2018, it was found that operational audits positively impact the effectiveness of health services. This was also reinforced by research by Shinta Kurniangsih and her colleagues in 2020, which showed that operational audits improved service effectiveness in inpatient installations. However, not all studies support these findings. Research conducted by Titik Holikah and Praptiestrini in 2020 revealed that operational audits, along with hospital institutional business ethics, have a negative and insignificant influence on the effectiveness of outpatient health services. Even so, operational audits should be viewed as an approach that can help meet established health service performance standards. Through evaluating operational activities, these audits provide

recommendations for improvement that can contribute to increased healthcare effectiveness. If the operational audit process in hospitals is well implemented, it is expected that the effectiveness of the health services provided will also increase. Based on these theories and studies, the first hypothesis is proposed as follows:

H1: Operational audits positively affect the effectiveness of health services in hospitals.

The Effect of Internal Control Implementation on the Effectiveness of Health Services in Hospitals.

Research conducted by Tenriwaru and Fadliah Nasaruddin in 2017 showed that the internal control system positively influences health services at Ibnu Sina Hospital Makassar. This finding aligns with the results of research by Gordon and Kalezi Monastery in 2019, which indicated that internal control has a positive and significant effect on providing quality health services in the Iganga Raya Local Government. However, not all studies give the same conclusion. Winda Riyasari and Fefri Indra Arza, in their research in 2020, stated that internal control has a negative and insignificant effect on the effectiveness of BPJS health services. Although there are differences in the results of these studies, the internal control factor is still considered very important for the effectiveness of health services. This is because planning, implementation, supervision, and accountability must be carried out effectively in a hospital environment. Reasonable internal control can build trust between patients and hospital staff. Conversely, weaknesses in internal control can risk causing failure in hospital operations. Based on the theory and research results, the second hypothesis is proposed as follows:

H2: Internal control positively affects the effectiveness of health services in hospitals.

3. Methods

This study adopts a causal associative approach by taking a population of all employees of Hospital B in East Jakarta. The information needed for this study was obtained using primary data, which was obtained by distributing questionnaires to all hospital employees. The sampling technique in this study used purposive sampling, so a sample of 76 people was obtained.

Variable measurement

Variable measurements in this study utilize statements and measure respondents' perceptions using a Likert scale from 1 to 5, starting from number 1 stating Strongly Disagree (STS), number 2 stating Disagree (TS), number 3 stating Moderately Agree (CS), number 4 stating Agree (S), and number 5 stating Strongly Agree (SS). Variable measurements can be seen in Appendix I.

Analysis technique

The data analysis technique in this study utilizes multiple linear regression analysis using SPSS version 26.0 statistical software through several stages. First, descriptive statistical tests were conducted to identify data characteristics. Next, the data was tested through the classical assumption test, which includes normality, multicollinearity, heteroscedasticity, and autocorrelation tests. The final stage is a hypothesis test consisting of an F test for model feasibility, a T-test for the partial effect of the independent variable (operational audit and internal control) on the dependent variable (health service effectiveness), and a coefficient of determination test to determine the amount of influence. The regression model used is formulated as:

Effectiveness of Health Services in Hospitals = $a - \beta_1 \text{Operational audit} + \beta_2 \text{Implementation of internal} + e$

4. Results and Discussion

Data Quality Test Results

The results presented in Table 1 show that in this study, the determined r-table value is 0.244 with a significance level of 5%.

Variable	Statement	R - Table	R - Count	Cronbach Alpha	Criteria
Operational Audit	1	0,244	0,462	0,728	Valid
	2	0,244	0,47		Valid
	3	0,244	0,516		Valid
	4	0,244	0,646		Valid
	5	0,244	0,609		Valid
	6	0,244	0,565		Valid
	7	0,244	0,563		Valid
	8	0,244	0,582		Valid
	9	0,244	0,584		Valid
Implementation of Internal Control	1	0,244	0,495	0,863	Valid
	2	0,244	0,709		Valid
	3	0,244	0,597		Valid
	4	0,244	0,668		Valid
	5	0,244	0,658		Valid
	6	0,244	0,656		Valid
	7	0,244	0,436		Valid
	8	0,244	0,468		Valid
	9	0,244	0,55		Valid
	10	0,244	0,46		Valid
	11	0,244	0,535		Valid
	12	0,244	0,666		Valid
	13	0,244	0,674		Valid
	14	0,244	0,566		Valid
	25	0,244	0,653		Valid
Health Service Effectiveness	1	0,244	0,383	0,794	Valid
	2	0,244	0,535		Valid
	3	0,244	0,463		Valid
	4	0,244	0,622		Valid
	5	0,244	0,62		Valid
	6	0,244	0,845		Valid
	7	0,244	0,558		Valid
	8	0,244	0,459		Valid
	9	0,244	0,623		Valid
	10	0,244	0,47		Valid
	11	0,244	0,507		Valid
	12	0,244	0,445		Valid
	13	0,244	0,429		Valid

Source: processed primary data (SPSS) Versi 26

Based on these criteria, all questions related to operational audits are declared valid. The same *r*-table, which is 0.244, is also applied to assess the implementation of internal control, where the analysis results show that all questions related to internal control are also declared valid. Furthermore, the *r*-table value of 0.244 with a significance level of 5% is used for the effectiveness of health services, and the results show that all questions in this category are also declared valid. Finally, the reliability test results for all variables show a Cronbach's alpha value greater than 0.60, so it can be concluded that all questions in the questionnaire instrument of this study are declared reliable. Furthermore, the *r*-table value of 0.244 with a significance level of 5% is used to evaluate the effectiveness of health services, and the results show that all questions in this category are also declared valid. Finally, the results of the reliability test for all variables show a Cronbach's alpha value greater than 0.60, so it can be concluded that all questions in this study's questionnaire instrument are declared reliable.

Hypotheses test

Based on the results presented in Table 2, the regression equation obtained is

$$Y = 10.262 + 0.305X_1 + 0.509X_2 + e.$$

From this test, it can be concluded that the constant value (a) of 10.262 indicates that if the operational audit variables and internal control implementation are considered constant or zero, then the effectiveness of health services in hospitals is estimated to increase to reach a positive value of 10.262. In addition, the regression coefficient for the operational audit variable is 0.305, which means that every one-unit increase in operational audit will increase the effectiveness of health services by 0.305 units or 30.5%, assuming other variables remain constant. Likewise, the regression coefficient on the internal control implementation variable, which is 0.509, indicates that a one-unit internal control increase will increase health services' effectiveness by 0.509 units or 50.9%, while other variables remain constant.

Table 2. Hypotheses testing

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
	B	Std. Error Beta		
1 (Constant)	10,262	4,236	—	2,423 0.018
Operational Audit	0,305	0,146	0,214	2,085 0,041
Implementation of Internal Control	0,509	0,083	0,631	6,133 0.000
F	50,441			
Adjusted R Square	0,607			

Source: processed primary data (SPSS) Versi 26

The results of the F test showed that the F-count value of 50.441 exceeds the F-table of 3.14 and the significance value of 0.000 is below 0.05, so it can be concluded that operational audits and the implementation of internal control simultaneously have a significant effect on the effectiveness of health services in hospitals. Furthermore, the t-test results showed that the t-count value for the operational audit variable is 2.085, which is greater than the t-table of 1.999, so H_0 is rejected. H_a is accepted, indicating that operational audits have a partially significant

effect on the effectiveness of health services, with a significance value of 0.041, which is also less than 0.05. The same applies to the internal control implementation variable, which has a t-count of 6.133, so H_0 is also rejected, and H_a is accepted, indicating a significant effect on the effectiveness of health services with a significance value of 0.000. Finally, the Adjusted R Square value of 0.607 shows that the influence of operational audits and implementation of internal control on the effectiveness of health services reaches 60.7%. In contrast, other variables influence the remaining 39.3%.

Discussion

The Influence of Operational Audit on the Effectiveness of Health Services in Hospitals

Based on the test conducted using SPSS version 26.0, the results show that operational audits positively and significantly influence health services' effectiveness. Evidence of this can be seen through the hypothesis test, where the calculated t value obtained is 2.085, exceeding the t table value of 1.999, and the significance level found is 0.041, which is less than 0.05. Thus, it can be concluded that the hypothesis H_1 related to the influence of operational audits on the effectiveness of health services is proven correct.

This finding is in line with research conducted by Zumrotun Nafi'ah and Sri Wiranti Setiyani (2018), as well as Sotya Roes Piajeng and Sigit Arie Wibowo (2017), which also showed that operational audits have a positive effect on the effectiveness of health services in hospitals. This indicates that the effectiveness of health services can be improved by implementing a good operational audit function.

The Effect of Internal Control Implementation on the Effectiveness of Health Services in Hospitals

Based on the tests conducted using SPSS version 26.0, the implementation of internal control has a positive and significant effect on the effectiveness of health services in hospitals. This finding is supported by the results of hypothesis testing, which show a clear relationship between the two variables. This study aligns with the results obtained by Tenriwaru and Fadliah Nasarudin (2017) and Shinta Kurnianingsih et al. (2020), which also show that internal control contributes positively to the effectiveness of health services in hospitals. Thus, the implementation of internal control is considered very important for hospitals to ensure that planning, implementation, supervision, and responsibility are carried out effectively.

The Effect of Operational Audits and Simultaneous Implementation of Internal Control on the Effectiveness of Health Services in Hospitals

Based on the tests carried out, operational audits and simultaneous implementation of internal control have a positive and significant effect on the effectiveness of health services in hospitals. The analysis supports this finding, which shows that the relationship between the two variables is essential. This study is in line with a survey conducted by Winda Riyasari and Fefri Indra Arza in 2020, which indicated that operational audits play a crucial role in improving the effectiveness of health services. In addition, research by Zumrotun Nafi'ah and Sri Wiranti Setiyani in 2018 also noted that implementing internal control had a positive impact. Thus, implementing operational audits and internal control will likely improve the effectiveness of health services in hospitals.

5. Conclusion

Based on data analysis from 65 respondents working at Hospital B, it can be concluded that operational audit has a positive and significant effect on the effectiveness of health services, indicating that the quality of operational audit is directly proportional to the increase in service effectiveness. In addition, the implementation of internal control also provides a positive and significant contribution, confirming the importance of internal control in improving the quality of services in hospitals. When both are implemented simultaneously, operational audit and internal control show a mutually reinforcing effect on the effectiveness of health services, meaning that combining these two factors can significantly improve the quality of services. However, this study has several limitations, such as the limited scope of one hospital, so the results may not be generalizable to other hospitals. In addition, the impact of the COVID-19 pandemic has caused obstacles in access to several libraries, impacting reference searches and reducing the scope of the study. For further research, it is recommended that hospital management conduct continuous evaluations of its operations to improve the effectiveness of health services and add sophisticated medical equipment to ensure more effective services. Future research should also consider adding other independent variables that can influence or strengthen the dependent variable to make the insights obtained more comprehensive.

References

- Arens, A. A., Elder, R. J., & Beasley, M. S. (2015). *Auditing and assurance services* (15th ed., Vol. 1; H. Wibowo & Perti Team, Trans.). Jakarta: Erlangga.
- Arens, A. A., Elder, R. J., & Beasley, M. S. (2015). *Auditing and assurance services* (15th ed., Vol. 2; G. Gania & Perti Team, Trans.). Jakarta: Erlangga.
- Bayangkara, I. B. K. (2011). *Management audit: Procedures and implementation*. Jakarta: Salemba Empat.
- Bayangkara, I. B. K. (2015). *Management audit: Procedures and implementation* (2nd ed.). Jakarta: Salemba Empat.
- Hall, J. A., & Singleton, T. (2011). *Information technology auditing and assurance* (2nd ed.; D. Fitriyanti & D. A. Kwary, Trans.). Jakarta: Salemba Empat.
- Ministry of Health RI. (2008). Decree of the Minister of Health of the Republic of Indonesia No. 129/Menkes/SK/II/2008 concerning Minimum Service Standards for Hospitals.
- Kurnianingsih, S., Anisma, Y., & Safitri, D. (2020). The effect of operational audit and internal control on the effectiveness of inpatient health services (Study at government-owned hospitals in Pekanbaru). *Bilancia: Jurnal Ilmiah Akuntansi*, 4(4), 408–417.
- Kurniawan, R., & Yuniarto, B. (2016). *Basic regression analysis and its application with R*. Jakarta: Kencana.
- Nafi'ah, Z., & Setiyanti, S. W. (2018). The effect of operational audit and internal control on the effectiveness of health services at Fastabiq Sehat PKU Muhammadiyah Pati General Hospital. *Fokus Ekonomi: Jurnal Ilmiah Ekonomi*, 13(2), 358–368. <https://doi.org/10.34152/fe.13.2.3.358-368>
- Piyajeng, S. R., & Wibowo, S. A. (2017). The effect of operational audit, internal control,

- good clinical governance, and hospital business ethics on the effectiveness of BPJS patient health services (Empirical study in RSUD and private hospitals in Surakarta City). *Review of Indonesian Accounting and Business*, 1(2), 168–177.
- Riyasari, W., & Arza, F. I. (2020). The effect of operational audit, internal control, and good clinical governance on the effectiveness of BPJS patient health services in hospitals. *Jurnal Eksplorasi Akuntansi*, 2(4), 3533–3552. <https://doi.org/10.24036/jea.v2i4.301>
- Sari, I. P. (2014). The effect of operational audit and internal control on the effectiveness of outpatient health services (Case study at Al Islam Hospital Bandung). *Jurnal Accounting dan Manajemen*.
- Sugiharto, E. (2015). *Preparing quantitative research proposals: Thesis and dissertation*. Yogyakarta: Suaka Media.
- Tenriwaru, & Fadliah. (2017). Evaluation of the internal control system in improving the health service system at Ibnu Sina Hospital. *Journal of Student Academic Research*, 2(2), 77–85.

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