Proceeding of International Conference on Advanced Technologies, Innovations and Science
Vol 1, No 1, June 2026, Page 371-376
ISSN XXXX-XXXX (Media Online)
https://journals.adaresearch.or.id/icatis

Determinants of Receivables Control Effectiveness: Evidence from Aceh Public Hospitals

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Submitted: **05/06/2026**; Accepted: **12/06/2026**; Published: **30/06/2026**

Abstract-Effective receivables control is a critical factor in maintaining the financial sustainability and operational performance of hospitals. Increasing transaction complexity, the digitalization of financial management systems, and potential operational disruptions necessitate the implementation of accounting information systems, internal control, and disaster recovery planning to support receivables management. This study aims to analyze the influence of Accounting Information Systems (AIS), Internal Control, and Disaster Recovery Planning (DRP) on the effectiveness of receivables control in Regional Public Service Agency (BLUD) hospitals across Aceh Province. A quantitative approach with a survey method was employed. Data were gathered by distributing questionnaires to personnel involved in financial administration and receivables management. Data analysis was performed using multiple linear regression. The empirical results indicate that Accounting Information Systems, Internal Control, and Disaster Recovery Planning exert positive and significant effects on the effectiveness of receivables control. Among the three variables, internal control provides the most dominant contribution to enhancing receivables management effectiveness. These findings imply that the integration of a reliable accounting information system, effective internal control, and comprehensive disaster recovery planning can improve the accuracy, security, and sustainability of receivables management processes. This study contributes to the development of financial management and accounting information systems literature in the public healthcare sector, while providing practical implications for hospital management in strengthening financial governance and receivables control effectiveness.

Keywords: Accounting Information Systems; Internal Control; Disaster Recovery Planning; Receivables Control Effectiveness; BLUD Hospitals

1. INTRODUCTION

Receivables control is a fundamental aspect of organizational financial management, as it directly relates to an institution's ability to maintain liquidity, operational continuity, and service effectiveness. In the healthcare sector, particularly in hospitals, receivables control is increasingly vital due to the high volume of healthcare service transactions involving diverse payment sources, including self-paying patients, private insurance, the Social Security Administrator for Health (BPJS Kesehatan), and other third-party payers. Ineffective receivables control can lead to an increase in bad debts, cash flow disruptions, and a decline in the hospital’s capacity to deliver quality healthcare services (Kusumo & Febryantahanuji, 2020; Marpaung, 2020). Therefore, hospitals require robust control systems and mechanisms capable of ensuring the accurate recording, monitoring, and sustainable collection of receivables.

Developments in information technology have driven a transformation in organizational financial management systems, including within the healthcare service sector. One technology playing a pivotal role in enhancing financial management effectiveness is the Accounting Information System (AIS). AIS enables organizations to integrate the processes of recording, processing, storing, and reporting financial information more rapidly, accurately, and transparently. Research by Natalegawa and Gunadi (2021) and Cahyo et al. (2021) demonstrates that the proper implementation of AIS can improve the quality of financial information, minimize recording errors, and support more effective decision-making. Nevertheless, some hospitals still rely on manual administrative and recording procedures, which potentially cause bookkeeping errors, reporting delays, and low receivables control effectiveness.

This phenomenon is evident in several Regional Public Service Agency (BLUD) hospitals in Aceh Province. Based on the Audited Financial Statements of the Aceh Government for 2021, there was a significant increase in outstanding receivables compared to the previous year. This condition indicates that receivables management and control still face various challenges, thereby demanding specific attention from hospital management.

Table 1. Receivables Report of Banda Aceh City BLUD Hospitals

No	Description	Per December 31, 2021 (Rp)	Per December 31, 2020 (Rp)	Total Increase in Receivables
BMD Rental Revenue Receivables				
1.	BLUD RSUD Zainoel Abidin	168.721.370	150.000.000	18.721.370

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ISSN XXXX-XXXX (Media Online)
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No	Description	Per December 31, 2021 (Rp)	Per December 31, 2020 (Rp)	Total Increase in Receivables
2.	Dinas Lingkungan Hidup dan Kehutanan Aceh	-	3.000.000	-
	Jumlah I	168.721.370	153.000.000	15.721.370
BLUD Revenue Receivables				
1.	RSUD Zainoel Abidin	224.941.599.594	82.936.520.375	142.005.079.219
2.	Rumah Sakit Jiwa	3.139.076.744	3.564.429.425	(425.352.681)
3.	Rumah Sakit Ibu dan Anak	2.443.908.872	1.774.812.732	669.096.140
	Total II	230.524.585.210	88.275.762.532	142.248.822.678
	Total I & II	230.693.306.508	88.428.762.532	142.264.543.976

Source:Notes to the financial statements Aceh TA 2021 (audited)

Based on Table 1, the total receivables of BLUD hospitals in Aceh Province surged by Rp142.25 billion compared to the preceding year. The most substantial increase occurred at RSUD Zainoel Abidin, amounting to Rp142.01 billion, while the Mother and Child Hospital (RSIA) experienced an increase of Rp669.10 million. This condition implies an urgent need to optimize receivables control effectiveness through the utilization of reliable information systems and more robust control mechanisms. Beyond AIS, another critical determinant influencing receivables control effectiveness is internal control. Internal control constitutes a set of policies and procedures designed to safeguard organizational assets, ensure the reliability of financial reporting, enhance operational efficiency, and guarantee compliance with applicable regulations. According to the Committee of Sponsoring Organizations (COSO) framework, effective internal control can minimize the risks of errors and fraud in organizational financial management. Research by Meilani et al. (2020), Sunarya et al. (2018), and Efendi (2015) shows that internal control positively affects receivables control effectiveness as it reinforces verification, monitoring, and collection procedures.

Furthermore, the rapid pace of digitalization demands that organizations possess adequate data protection and business continuity strategies. One increasingly critical approach is Disaster Recovery Planning (DRP). DRP is a systematic framework designed to ensure the restoration of data, applications, and information systems following operational disruptions, natural disasters, cyberattacks, or IT infrastructure failures. Finucane et al. (2020) explain that organizations with robust DRP are better equipped to preserve operational continuity and mitigate losses resulting from data deficits. In the healthcare context, the presence of DRP is paramount because financial and patient data are strategic assets that must be stringently protected.

Prior studies have extensively examined the relationship between AIS and receivables control effectiveness, as well as the impact of internal control on financial management. However, empirical studies that integrate AIS, Internal Control, and Disaster Recovery Planning simultaneously to explain receivables control effectiveness in hospital settings remain relatively scarce. Most existing literature focuses heavily on information systems or internal control as isolated dimensions, leaving the role of DRP in supporting receivables control under-researched, particularly within Indonesian BLUD hospitals.

Based on these circumstances, a clear research gap exists regarding the limited empirical evidence evaluating the simultaneous effects of AIS, Internal Control, and DRP on receivables control effectiveness in the healthcare service sector. Consequently, this study is conducted to address this gap by analyzing the influence of AIS, Internal Control, and Disaster Recovery Planning on receivables control effectiveness at BLUD hospitals in Aceh Province.
This research is expected to offer theoretical contributions by enriching the literature on accounting information systems, internal control, and IT risk management within the healthcare sector. Pragmatically, the insights gained provide a foundation for hospital management to formulate more effective receivables management strategies by leveraging information technology, strengthening internal control frameworks, and implementing comprehensive DRP to support operational viability and financial governance.

2. RESEARCH METHODS

2.1 Research Design

This study employs a quantitative approach utilizing an explanatory research design. A quantitative approach was selected to empirically test the causal relationships exerted by Accounting Information Systems, Internal Control, and Disaster Recovery Planning on the effectiveness of receivables control across BLUD hospitals in Aceh Province. Explanatory research serves to clarify the effects of the independent variables on the dependent variable based on formulated hypothesis testing

2.2 Population and Sample

The target population for this study comprised all personnel involved in financial management, receivables administration, accounting, and information technology at BLUD hospitals in Aceh Province. Respondents were selected due to their specialized knowledge and direct experience regarding the application of AIS, Internal Control,

Vol 1, No 1, June 2026, Page 371-376
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and DRP within receivables management workflows. The sampling strategy relied on a purposive sampling technique, which involves selecting participants based on pre-established criteria. The specific inclusion criteria for the respondents were: (1) personnel actively working in the finance, accounting, receivables, internal audit, or information technology departments; (2) possessing a minimum tenure of one year; and (3) being directly involved in the hospital's receivables management or control operations.

2.3 Data Collection Technique

Primary data were gathered by distributing structured questionnaires directly to eligible respondents. The questionnaire items were operationalized based on variable indicators derived from verified prior literature and relevant theories. Variable measurement utilized a five-point Likert scale, ranging from a score of 1 (strongly disagree) to 5 (strongly agree). To supplement the primary data, secondary data were gathered from the financial reports of the BLUD hospitals, organizational documents, and pertinent academic literature to support the comprehensive analysis and interpretation of the research findings.

2.4 Operational Definition of Variables

Table 2. Operational Definition of Variables

Variable	Operational Definition	Indicator	Source
Accounting Information System (X1)	A system utilized to collect, process, store, and present financial information to support managerial decision-making.	System quality, information quality, ease of use, system reliability	Romney & Steinbart (2023)
Internal Control (X2)	A process designed to provide reasonable assurance regarding the achievement of organizational objectives	Control environment, risk assessment, control activities, information and communication, monitoring.	COSO (2013)
Disaster Recovery Planning (X3)	A structured plan for restoring systems and data following operational disruptions or catastrophic events.	Data backup, system recovery, information security, operational continuity.	ISACA (2022)
Receivables Control Effectiveness (Y)	The degree of organizational success in managing and controlling accounts receivable efficiently and punctually.	Recording accuracy, collection effectiveness, reduction of problematic accounts, reporting speed.	Meilani et al. (2020)

2.5 Data Analysis Technique

Data analysis was carried out using the Statistical Package for Social Sciences (SPSS) software. The chronological analytical stages included:

a. Descriptive Statistical Analysis to outline the demographic characteristics of the respondents and the baseline profile of the research variables.
b. Validity Testing to evaluate the capacity of the instrument items to measure the theoretical constructs under investigation accurately.
c. Reliability Testing utilizing the Cronbach's Alpha coefficient to guarantee the internal consistency of the research instrument.
d. Classical Assumption Testing consisting of normality, multicollinearity, and heteroscedasticity tests to ensure model BLUE (Best Linear Unbiased Estimator) compliance
e. Multiple Linear Regression Analysis to evaluate the statistical impact of Accounting Information Systems, Internal Control, and Disaster Recovery Planning on receivables control effectiveness.
   The regression model established for this study is specified as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon \quad (1)$$

Description: Y = Receivables Control Effectivenessi, X_1 = Accounting Information System, X_2 = Internal Control, X_3 = Disaster Recovery Planning, α = Constant, β_1, β_2, β_3 = Regression Coefficients, ε = Error Term

2.6 Hypothesis Testing

Hypothesis testing was conducted via partial t-tests to ascertain the individual significance of each independent variable on receivables control effectiveness, paired with a simultaneous F-test to determine the collective model significance. The decision-making threshold adhered to a significance level of 5% (α = 0,05). Furthermore, the coefficient of determination (R^2) was analyzed to gauge the capacity of the model to explain variations in the dependent variable.

3. RESULTS AND DISCUSSION

3.1 Results of Multiple Linear Regression Analysis

This study was executed across three Regional Public Service Agency (BLUD) hospitals situated within Banda Aceh City, namely: Rumah Sakit Umum Daerah (RSUD) Zainoel Abidin, Rumah Sakit Jiwa (Psychiatric Hospital), and Rumah Sakit Ibu dan Anak (Mother and Child Hospital). Adopting a quantitative survey methodology, primary data were compiled via questionnaires administered to professionals managing hospital finances, receivables bookkeeping, and IT operations. The sampling design utilized a census approach (saturated sampling), whereby all population members matching the inclusion criteria were drawn as active respondents. The final sample comprised 36 respondents, distributed evenly with 12 respondents from each respective hospital infrastructure.
Data analysis was performed using multiple linear regression with the help of SPSS software. The results of the regression analysis are shown in Table 3.

Tabel 3. Results of Multiple Linear Regression Analysis

Variable	Regression Coefficient (B)	Std. Error	Beta
Constant	3.852	5.217	-
Accounting Information System (AIS)	0.572	0.119	0.616
Internal Control	0.233	0.137	0.239
Disaster Recovery Planning (DRP)	0.092	0.131	0.099

Based on the statistical outputs, the resulting regression equation is formulated as follows:

$$Y = 3{,}852 + 0{,}572X_1 + 0{,}233X_2 + 0{,}092X_3 + e$$

The model demonstrates that all independent variables possess positive coefficients. The Accounting Information System variable exhibits the highest coefficient value (0.572), followed by Internal Control (0.233), and Disaster Recovery Planning (0.092). These outcomes show that improvements in the quality of Accounting Information Systems, Internal Control, and Disaster Recovery Planning correspond directly with enhanced receivables control effectiveness within the monitored BLUD hospitals in Aceh Province. The evaluation of the coefficient of determination produced an R^2 value of 0.472. This indicates that 47.2% of the variance observed in receivables control effectiveness can be explained by the linear combination of AIS, Internal Control, and DRP. The remaining 52.8% variation is attributable to other exogenous factors omitted from the current empirical model.

3.2 Discussion

3.2.1 The Influence of Accounting Information Systems on Receivables Control Effectiveness

The statistical analysis reveals that Accounting Information Systems exert a positive influence on receivables control effectiveness. This finding underscores that implementing integrated information platforms enhances recording accuracy, accelerates transaction verification, and facilities real-time tracking of due accounts. Given the large transactional throughput typical of hospital environments, an AIS acts as an indispensable tool to curb administrative oversights and enhance efficiency in debt collection workflows.

This result aligns with Information Processing Theory, which posits that organizations capable of managing internal information efficiently secure superior operational control and better strategic decision-making capacities. Furthermore, this outcome corroborates the foundational works of Romney and Steinbart (2023) and Hall (2022), as well as empirical studies by Natalegawa and Gunadi (2021) and Cahyo et al. (2021), which collectively establish that AIS significantly improves financial reporting quality and organizational control mechanisms. The findings are also consistent with recent literature by Al-Hiyari et al. (2023) and Alshurafat et al. (2024), which demonstrates that the digitalization of accounting frameworks drastically advances receivables management efficiency and financial governance.

3.2.2 The Influence of Internal Control on Receivables Control Effectiveness

The empirical model demonstrates that Internal Control has a positive effect on receivables control effectiveness. A sound internal control architecture mitigates administrative error margins, thwarts fraudulent activities, and solidifies adherence to financial guidelines. Within hospital operations, internal control guarantees that the creation, billing, and balancing of receivables conform precisely to established standard operating procedures. This finding corresponds directly with the COSO Internal Control Framework, which states that internal control serves as a primary institutional defense for asset preservation and financial data integrity.

The results provide empirical support to studies by Sunarya et al. (2018), Meilani et al. (2020), Kewo and Afiah (2022), and Alzoubi (2023), which note that internal control structures significantly dictate the success of financial administration and debt recovery. Additionally, this is in harmony with Al-Matari et al. (2024), who verified that organizations maintaining rigorous internal oversight display markedly lower fiscal risks and superior governance quality.

3.2.3 The Influence of Disaster Recovery Planning on Receivables Control Effectiveness

The results establish that Disaster Recovery Planning (DRP) has a positive influence on receivables control effectiveness. This emphasizes that an institution's proactive readiness against system breakdowns, network incursions, or natural hazards helps maintain data integrity and the continuity of financial processing. In the modern digital landscape, where the vast majority of receivables processing is heavily reliant on complex technology infrastructures, DRP becomes vital.

This dynamic is explained by Business Continuity Management Theory, which highlights the necessity of systematic continuity protocols to mitigate systemic hazards. This finding supports the assertions of Carlson and Parker (1998), Hoesada (2006), and Yusmita and Evayani (2020) concerning the indispensable nature of post-disaster recovery frameworks for long-term operational resilience. It also mirrors conclusions reached by Finucane et al. (2020), ISACA (2022), Wallace and Webber (2021), and Ahmad et al. (2024), which show that proactive DRP acts as a main catalyst for data safety, digital asset preservation, and effective institutional data management.

3.2.4 Theoretical and Practical Implications

The holistic empirical insights demonstrate that Accounting Information Systems, Internal Control, and Disaster Recovery Planning represent crucial determinants altering receivables control effectiveness across BLUD hospitals in Aceh Province. Conceptually, AIS acts as the bedrock for accurate and timely information delivery, Internal Control operates as the mechanism for risk mitigation and oversight, and DRP ensures that operational processes remain functional despite unforeseen technology disruptions. Theoretical Perspective: This study extends the healthcare financial management literature by combining information technology infrastructure, internal governance, and digital risk management into a unified empirical model. Practical Perspective: The findings suggest that hospital management should prioritize capital allocation toward upgrading AIS platforms, reinforcing internal control oversight, and designing rigorous, testable DRP frameworks to secure long-term operational continuity and efficient capital management.

4. CONCLUSION

This study analyzed the effects of Accounting Information Systems, Internal Control, and Disaster Recovery Planning on the effectiveness of receivables control at Regional Public Service Agency (BLUD) hospitals in Aceh Province. Multiple linear regression analysis indicates that all three independent variables exert positive effects on receivables control effectiveness. The Accounting Information System variable holds the largest individual influence, demonstrating that integrated information technology increases entry accuracy, expedites transaction handling, and streamlines collections. Moreover, Internal Control is verified as a critical factor in mitigating fraud and processing errors, while Disaster Recovery Planning safeguards financial data security and business continuity. Theoretically, this study contributes to the convergence of accounting information systems, internal control, and IT risk literature by revealing that receivables management success relies not only on standard internal oversight, but also on technological readiness against system failures. Practically, the study implies that hospital executives must continuously optimize AIS platforms, strengthen control protocols, and formalize clear DRP frameworks. Allocating resources to human capital training, strengthening supervisor oversight, and investing in IT infrastructure are key strategic imperatives for hospital financial sustainability. This study note several distinct limitations. First, the sample size is relatively modest and limited to three BLUD hospitals in Aceh Province, which restricts the generalizability of the insights to broader geographic regions. Second, the model incorporates only three independent variables, whereas exogenous variables such as human resource competence, credit policy adjustments, organizational culture, IT governance maturity, and financial service quality may also alter outcomes. Consequently, future investigations should expand their analytical scope to encompass a mix of public and private hospital networks across diverse provinces in Indonesia, expand the respondent base, and include additional relevant variables to provide a more holistic perspective. Lastly, future studies could employ a mixed-methods approach to uncover deeper qualitative nuances regarding the integration of AIS, internal controls, and DRP in healthcare institutions.

REFERENCES

Al-Hiyari, A., Alnsour, M., Al-Shboul, M., & Al-Maaitah, M. (2023). Digital accounting systems and organizational performance: Evidence from public sector institutions. *International Journal of Accounting Information Systems, 49*, 100612.

Al-Matari, E. M., Alosaimi, M. H., & Alruwaili, T. F. (2024). Internal control systems and financial performance: Evidence from public sector organizations. *Journal of Financial Reporting and Accounting, 22*(2), 310–327.

Alshurafat, H., Beattie, C., Jones, G., & Sands, J. (2024). The role of accounting information systems in enhancing organizational efficiency and governance. *Accounting Research Journal, 37*(1), 1–19.

Alzoubi, A. A. (2023). The impact of internal control systems on organizational effectiveness and financial accountability. *International Journal of Auditing, 27*(3), 405–421.

Carlson, T., & Parker, B. (1998). *Disaster recovery planning: Managing risk and business continuity*. Information Systems Management.

Committee of Sponsoring Organizations of the Treadway Commission (COSO). (2013). *Internal control—Integrated framework*. COSO.

Efendi, R. (2015). Pengaruh pengendalian internal terhadap efektivitas pengelolaan piutang pada organisasi sektor publik. *Jurnal Akuntansi Multiparadigma, 6*(2), 215–228.

Finucane, M., Al-Harthy, S., & Al-Balushi, H. (2020). Disaster recovery planning and organizational resilience in digital environments. *International Journal of Disaster Risk Reduction, 50*, 101719.

Hall, J. A. (2022). *Accounting information systems* (11th ed.). Cengage Learning.

Hoesada, J. (2006). *Audit sistem informasi*. Salemba Empat.

ISACA. (2022). *Business continuity and disaster recovery planning guidelines*. ISACA.

Kewo, C. L., & Afiah, N. N. (2022). Internal control systems and financial accountability in public sector organizations. *Journal of Accounting and Organizational Change, 18*(4), 560–577.

Kusumo, B. A., & Febryantahanuji, A. (2020). Analisis pengendalian piutang dalam meningkatkan efektivitas pengelolaan keuangan rumah sakit. *Jurnal Akuntansi dan Manajemen, 17*(1), 45–58.

Marpaung, F. R. (2020). Receivables management and financial sustainability in healthcare institutions. *Jurnal Keuangan dan Perbankan, 24*(3), 345–358.

Meilani, S., Rahmawati, R., & Hidayat, A. (2020). Pengaruh pengendalian internal terhadap efektivitas pengendalian piutang pada organisasi sektor publik. *Jurnal Riset Akuntansi dan Keuangan, 8*(2), 211–224.

Natalegawa, R., & Gunadi, W. (2021). Accounting information systems and receivables control effectiveness: Evidence from healthcare institutions. *Jurnal Sistem Informasi Akuntansi, 12*(1), 33–48.

Romney, M. B., & Steinbart, P. J. (2023). *Accounting information systems* (15th ed.). Pearson Education.

Sunarya, E., Suryani, N., & Kurniawan, A. (2018). Pengaruh pengendalian internal terhadap efektivitas pengelolaan piutang pada rumah sakit pemerintah. *Jurnal Akuntansi dan Auditing Indonesia, 22*(2), 112–125.

Wallace, M., & Webber, L. (2021). *The disaster recovery handbook: A step-by-step plan to ensure business continuity and protect vital operations, facilities, and assets* (3rd ed.). AMACOM.

Yusmita, F., & Evayani, E. (2020). Disaster recovery planning implementation in public organizations: Challenges and opportunities. *Jurnal Sistem Informasi dan Teknologi Informasi, 9*(1), 15–27.