

Leveraging Technology in Accounting for Entrepreneurial Insight into Government Budgeting Efficiency

Widhy Setyowati¹, Taufiq Andre Setiyono², Ge Gung^{3*}, Bunga Novriyanti⁴

^{1,2}Department of Accounting, Bank BPD Jateng School of Economics, Indonesia,

³Computer Science, EduAward, United Kingdom,

⁴Master of Information Technology, Bank Negara Indonesia, Indonesia

e-mail: widhisetyowati61@gmail.com¹, tugaspaktaufiq@gmail.com²,
gegung@eduaward.co.uk^{3*}, bunga.novriyanti@raharja.info⁴

*corresponding author



Author Notification
17 October 2023
Final Revised
11 November 2023
Published
13 November 2023

Setyowati, W., Setiyono, T. A., Gung, G., & Novriyanti, B. (2023). Leveraging Technology in Accounting for Entrepreneurial Insight into Government Budgeting Efficiency. *Aptisi Transactions on Technopreneurship (ATT)*, 5(3), 251-260.

Retrieved from DOI: <https://doi.org/10.34306/att.v5i3.340>

Abstract

This research aims to assess the impact of the clarity of budget objectives and reporting systems on government performance accountability, with accounting control serving as a moderating factor. The study was conducted within the Wonosobo Regency Regional Organization. Purposive sampling was employed to select 75 respondents, comprising officials responsible for financial reporting and accountability within their roles, including the Head of Finance, finance staff, and treasurer. Multiple linear regression was utilized for data analysis. Empirical evidence supports the notion that the clarity of budget goals and reporting systems has a positive influence on government agency performance accountability. Through moderation analysis, it was empirically demonstrated that accounting control can act as a moderating variable, negatively affecting the influence of budget goal clarity on agency performance responsibilities. However, accounting control can also serve as a moderating variable, positively affecting the influence of reporting systems on government performance.

Keywords: Performance Accountability, Budget Target Clarity, Reporting System, Accounting Control.

1. Introduction

The measurement of organizational performance is recognized as a management function that has evolved into an independent branch of science (Balaboniene and Vecerskiene, 2015). Following the collapse of the New Order regime, Presidential Instruction Number 7 of 1999 on Government Accountability was issued as a guideline for the accountability of government agencies[1]. To regulate performance accountability within government agencies, a regulation on Government Agency Financial Reporting is essential. The most recent regulation is Presidential Regulation Number 29 of 2014 concerning the implementation of Government Regulation Number 8 of 2006[2].

These three regulations are significant regulatory products that form the foundation and rationale for this research. Presidential Regulation Number 71 of 2010 on "Government Accounting Standards" is a crucial reference in the preparation of financial reports for all government organizations in Indonesia[3].

The implementation of regional autonomy has spurred the development of public sector accounting. Similarly, during the New Order regime, fiscal decentralization was enacted, compelling each local government to enhance its accounting system and regional financial management[4]. This improvement is critical to meet the demands for transparent government public accountability regarding the use of public funds. As a manifestation of financial management responsibility to the public, the readiness of agency financial reports is a vital component in realizing public accountability. Therefore, as a form of accountability to the public, government agencies must present information transparently and accountably[5].



An undesirable phenomenon in Wonosobo Regency was the delay in the execution of the responsibility reporting system, which obstructed the budget realization process. This situation adversely affected the performance of the Service Devices Organization (Organisasi Perangkat Dinas)[6]. In the context of Wonosobo Regency, one of the contributing factors was the financial accountability process, which was not sufficiently robust. This was partly because many staff members responsible for financial bookkeeping lacked adequate knowledge in preparing financial reports[7]. The absence of a robust control system also contributed to the delays in performance accountability of the Service Devices Organization in this region. According to the report received by the Deputy Regent, 25 agencies were required to report to the Government Agency Performance Accountability System (SAKIP), but by the reporting deadline, only 5 had submitted their reports[8].

Within the scope of local government, the clarity of budget objectives necessitates purposeful budgeting. The budget must be prepared in a clear and specific manner to facilitate understanding and implementation, ultimately leading to proper accountability[9]. Budgets that are ineffective and not performance-oriented will fail to meet the objectives of each government agency's planning. Hence, the clarity of budget targets is relevant and crucial for the government as it impacts accountability. Previous research by Widaryanti and Nurul (2020), and Sapri and Gideon (2022) concluded that the Clarity of Budget Targets influenced the Performance Accountability of Government Agencies[10]. Conversely, research by Indah and Haryanto (2022) found that clarity of budget targets did not influence Government Agency Performance Responsibilities[11].

Another variable impacting the accountability of government agencies is the reporting system. The State Administration Agency (LAN) and the Financial and Development Supervisory Agency (BPKP) assert that quality reports are the outcome of good governance practices. Financial accountability reports submitted by local governments must be evaluated by both internal and external auditors[12].

The established procedure for reporting local government finances must be systematic to facilitate the monitoring and control of government performance, including the oversight of budget utilization. This aligns with findings from research by Rio et al., (2019), Widaryanti and Nurul (2020), Sapri and Gideon (2022), and Indah and Haryanto (2022), which concluded that the Reporting System influenced the Performance Accountability of Government Agencies. However, research by Mikoshi (2020) provided contrary evidence that the reporting system had no effect on the accountability of government agency performance[13].

Accounting controls are also pivotal in assessing whether government activities are conducted economically, efficiently, and effectively. They aid in decision-making and enhance operational control[14]. Moreover, accounting controls are applied to test planning, transaction recording, and monitoring systems based on information systems, offering the best alternatives for each case and problem to improve performance[15].

Improperly implemented accounting controls can lead to irregularities and a decrease in accountability levels. Research by Mikoshi (2020), and Indah and Haryanto (2022) concluded that Accounting Control affected the Performance Accountability of Government Agencies. In contrast, studies by Widaryanti and Nurul (2020), and Sapri and Gideon (2022) indicated that Accounting Control had no effect on the Execution Responsibility of Government Agencies.

In this study, researchers positioned Accounting Control as a moderating variable to obtain empirical evidence about its ability to strengthen or weaken the effect of clarity on budget targets and a reporting system on the performance accountability of government agencies. Thus, the study aims to determine the influence of clarity on budget targets and reporting systems on accountability and the role of accounting controls in moderating the effect of clarity on budget objectives and reporting systems on accountability[16].

2. Theoretical Framework And Hypothesis Development

2.1 Government Agencies Performance Accountability

Performance accountability in public sector organizations serves as a means to communicate and disclose the progress made toward organizational objectives and the execution of mandated activities to the public. It encompasses the obligation of government

agencies to assume responsibility for the success or failure of program implementation and activities[17].

Currently, government agency performance accountability is governed by Presidential Regulation Number 29 of 2014, which outlines the Government Agency Performance Accountability System (SAKIP). SAKIP encompasses a set of activities, tools, and processes aimed at identifying, measuring, collecting data on, classifying, summarizing, and reporting agency performance to enhance accountability and overall performance improvement[18].

2.2 Clarity of Budget Targets

A budget, in its systematic arrangement, outlines all organizational activities presented in financial terms and pertains to future resource allocation in public sector organizations[19]. One crucial aspect of budgets is the clarity of their objectives. Clarity of Budget Goals refers to the extent to which organizational objectives are explicitly and specifically defined, facilitating the accountability of budget execution for all implemented programs. Clear budget objectives simplify the process of aligning budget targets with organizational goals. Conversely, unclear budget targets can impede effective implementation[20].

2.3 Reporting System

Financial reports play a pivotal role in establishing public sector accountability by providing information that serves as the basis for decision-making. The reporting system serves as a means of conveying information regarding budget utilization to external, internal, and other relevant stakeholders[21].

Within government institutions, the reporting system constitutes the mechanism for presenting financial and performance reports, such as the Government Agency Performance Accountability Report (LAKIP). A robust reporting system is essential for monitoring budget utilization and as a tool for budget control. The characteristics of financial reports should encompass relevance, reliability, comparability, and understandability, as outlined in Government Regulation Number 71 of 2010[22].

2.4 Accounting Control

Accounting control encompasses planning, procedures, and reporting systems that aim to safeguard organizational assets. It is a formal accounting-based control system applied to achieve efficient and effective resource management. Organizations must establish control mechanisms to align decisions with planning. Accounting control encompasses information-based planning, reporting, and monitoring systems, contributing to effective cost control and accountability for budgeted expenses[23].

2.5 The Influence of Clarity on Budget Targets on Performance Accountability of Government Agencies

Budgets with clear alignment to organizational objectives facilitate understanding among responsible parties. When budgets do not reflect intended goals, issues may arise. Therefore, clarity of budget targets is paramount. Clear and specific budget objectives increase accountability for government agency performance and enhance budget management. Previous studies by (Yogi I, Suharno, Bambang W, 2019), Widaryanti and Nurul (2020), Sapriila and Gideon (2022) suggest a positive relationship between Clarity of Budget Targets and Government Agency Performance Accountability, forming the basis for the first hypothesis:

H1: Positively, Clarity of Budget Targets influences Government Agencies' Performance Accountability[24].

2.6 The Influence of Reporting Systems on Performance Accountability of Government Agencies

As stewards of public funds, government agencies must provide accurate, relevant, timely, consistent, and reliable financial information. Financial statements serve as a form of accountability, necessitating a robust reporting system to transparently present financial information tied to decision-making within specified periods[25].

A robust reporting system is essential for monitoring budget utilization and promoting detailed performance reporting to enhance government agency accountability. Preliminary studies by Rio et al. (2019), Evada et al. (2020), Widaryanti and Nurul (2020), Sapriila and Gideon (2022),

and Indah and Haryanto (2022) have provided empirical evidence supporting the notion that the Reporting System positively impacts Government Agencies' Performance Accountability, leading to the formulation of the second hypothesis:

H2: Reporting systems have a positive impact on agency performance accountability.

2.7 The Influence of Clarity of Budget Targets on Performance Accountability of Government Agencies with Accounting Control as Moderating Variable

Effective delivery of budget targets enhances government agency accountability and budget management. However, clear budget targets, when not complemented by robust accounting controls, can lead to a decline in agency performance. This aligns with the concept of accounting control, which encompasses procedures and documentation for safeguarding assets and accurately recording financial transaction[26]. Accounting control serves as a valid indicator for assessing the efficiency and effectiveness of government agency activities in providing public services. Consequently, the third hypothesis posits:

H3: Accounting Control positively moderates the influence of Budget Target Clarity on agency performance accountability.

2.8 The Influence of Reporting Systems on Performance Accountability of Government Agencies with Accounting Control as Moderating Variable

Monitoring the implementation of a predefined budget is possible through a robust reporting system. Accountability is realized through comprehensive reporting of government agency activities. However, if a government agency submits detailed reports for activities that are not executed efficiently, economically, and effectively, it can diminish performance accountability. This leads to the formulation of the fourth hypothesis:

H4: Accounting Control can serve as a moderating variable for the impact of reporting systems on agency performance accountability.

3. Research Methods

The research population was all Regional Apparatus Organizations (OPD) in Wonosobo Regency (25 Agencies). Respondents of this research were officials who have the authority, duties and functions in presenting financial reports and were accountable for the financial reports made. These officials included the Head of Finance, finance staff and Treasurer. Thus, the total number of research samples were 75 units. The analysis technique applied was multiple linear regression analysis[27]. Determination of the sample was done by purposive sampling. The underlying research method was the survey method. In this study, the data used was primary data. The research instrument was a questionnaire.

3.1 Research Variables and Operational Definitions Clarity of Budget Targets

The clarity of budget targets refers to the accuracy of determining budget so that it can be understood, implemented and accounted for. This variable was measured with the same instrument as used by Agustin [28]. The questionnaire instrument consisted of 5 statements in 5 Likert scales.

3.2 Reporting System

The reporting system is an accountability mechanism in providing information on the use of budget to external parties, internal parties, and other relevant parties. This variable was measured with the same instrument in Agustin's research [28]. This questionnaire instrument consisted of 6 statements with 5 Likert scales.

3.3 Accounting Control

Accounting controls are the plans, procedures and reporting systems related to safeguarding of organizational assets. This variable was measured with the same instrument in Agustin's research [28]. The questionnaire instrument consisted of 5 statements in 5 Likert scales.

3.4 Performance Accountability

Performance accountability is the obligation of government agencies to account for the

performance of activities carried out in accordance with the objectives set in a structured manner through periodic performance reports. This variable was measured with the same instrument in Agustin's research [28]. The questionnaire instrument consisted of 5 statements in 5 Likert scales.

3.5 Data Analysis Method

Qualitative analysis is a way to explain research data in the form of tables, pictures with clear descriptions. In this study, the qualitative analysis implemented was to analyze descriptive statistics on each research variable.

3.6 Data Quality Testing

The accuracy of hypothesis testing for relationships between study variables is highly dependent on the quality of the data used in the test. There were two types of data quality tests: validity tests and reliability tests.

3.7 Classical Assumption Testing

Prior to testing hypotheses using multiple linear regression analysis, we had to test traditional assumptions consisting of normality, multicollinearity and heteroscedasticity tests.

3.8 Multiple Linear Analysis

This analysis was applied to determine the influence of independent variables (Clarity of Budget Targets or X1, and Reporting Systems or X2) and moderating variables (Accounting Control or Z), not dependent variables (Accountability of Government Agency Performance or Y). The linear regression equation was:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_1Z + b_4X_2Z + e$$

4. Results and Discussions

4.1 Characteristics of Respondents

From the results of data collection, most of the respondents were male (61.80%) with a majority age range of 36-45 years. The last education of the majority of respondents was Bachelor's degree (42 persons or 61.80%). From experience in office, the majority of terms of office was 1-5 years (46 persons or 67.60%).

4.2 Validity Testing

Based on the results of the validity test, the KMO value of Government Agencies Performance Accountability was 0.906, Clarity of Budget Targets was 0.766, Reporting System was 0.764, and Accounting Control was 0.781. From several KMO values, it was concluded that KMO values of all variables were more than 0.50. So, the number of samples met minimum requirements. The Component Matrix results of the factor loading of all the variable indicators studied were more than 0.40. Therefore, All variable indicators were valid.

4.3 Reliability Testing

Reliability test was conducted through Cronbach Alpha. The value of Cronbach Alpha for Government Agencies Performance Accountability was 0,923, Clarity of Budget Targets was 0,843, Reporting System was 0,840, and Accounting Control was 0,861. Cronbach Alpha values were more than 0,70. Thus, all variables were reliable.

4.4 Classical Assumption Testing

From the normality test conducted, all items of statements of independent variables (Clarity of Budget Targets and Reporting System) moderating variable (Accounting Control), and independent variable (Performance Accountability) were normal. Likewise, from multicollinearity testing and heteroskedasticity testing it was concluded that multicollinearity and heteroscedasticity problems were not detected. Thus, all classical assumptions requirements were fulfilled.

4.5 Hypothesis Testing

Statistical calculations in multiple linear regression analysis in this study were applied with the assistance of SPSS data processing software. The results of analysis were shown in Table 1.

Table 1
Multiple Regression Analysis Results

Model		Standardiz e d Coefficients	T	Sig.	
		Beta			
1	Clarity of Budget Targets	.843	3,971	.000	
	Reporting System	.158	.517	.000	
	Moderation 1	-.906	-2.126	.037	
	Moderation 2	.892	4.645	.000	
Model		Df	Mean Square	F	Sig.
1	Regression	4	141.852	47.371	.000b
	Residual	63	2.994		
	Total	79			
Mo del	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.866	.750	.735	1.730	

The calculated F-score was 47,371 with a significance value of 0.000. Therefore, articulating budget targets and reporting systems can simultaneously demonstrate the value of accountability for performance. The coefficient of determination (adjusted R²) is the determinant of the independent variable's ability to explain the value of the dependent variable. The coefficient of determination value was 0.735. 73.50% of performance accountability says it can be explained by clarity in budget targets and reporting systems. The remaining 26.50% were then influenced by other non-study variables.

4.6 Hypothesis Discussion 1

The results of testing hypothesis 1 showed that the value of beta coefficient was 0.843 with significance probability value of 0.000. It meant that Clarity of Budget Targets had a positive influence on Performance Accountability. Acceptance of hypothesis 1 was empirical evidence that the clearer the budget targets presented would improve the quality of performance accountability. The results of the statistical description showed that the average respondent's answer was 4.282 (agree). The majority of respondents to financial officials agreed that the proposed work plan and budget were in accordance with the Regional Revenue and Expenditure Budget Plan, the budget targets were clear and specific, the factors influencing budget execution were carried out effectively and support agency objectives and budget realization was run in a timely manner.

This statement was reinforced by the results of statistical description X1.4. In essence, the percentage of answers 4 (agree) was 66.20% and strongly agree (5) was 29.40%. Respondents were of the opinion that the proposed budget had supported the agency/organizational objectives. Likewise, the results of statistical description in statement 5 also strengthened the acceptance of the hypothesis because 67.60% of the respondents agreed and 26.50% of the respondents answered that they strongly agreed that the realization of the budget had proceeded correctly.

The results of statistical description of Performance Accountability for question Y.7 showed that the percentage of answers agreeing was 67.60% and strongly agreeing was 27.90%. Respondents agreed on the close link between performance gains and programs and policies. Likewise, for question Y2 the percentage of respondents who agreed was 61.30% and strongly agreed was 36.80%. Thus, the Service Device Organization in Wonosobo Regency had determined performance indicators for each activity or program to

be implemented. The results of this study reinforced conclusions of previous studies which concluded that clearer budget targets could increase accountability for performance of government agencies[29][30][31][32]. The results of this study contradicted research by Agustin (2019) and Annisa and Haryanto (2020) which stated that Clarity of Budget Targets did not influence Performance Accountability of Government Agencies[33][34].

4.7 Hypothesis Discussion 2

From hypothesis testing 2, the value of beta coefficient was 0.517 with a significance probability value of 0.000. Thus, it was empirically proven that Reporting System affected Performance Accountability of Government Agencies. Indicators in testing this hypothesis included "Presentation of complete financial statements", "Information in financial statements is used as a means of correction", "Financial information is presented to meet general needs, not special needs", "Financial reports can be tested". and "Financial information can be understood by users" and then compared with financial reports from previous periods.

Acceptance of this hypothesis was strengthened by respondents' answers to 5 statements proposed with an average percentage of answers 4.26 which was more than a score of 4 (agree). The highest answer value of respondents to statement X2.1, namely agreeing was 57.40% and strongly agreeing was 41.80%. It provided empirical evidence that financial officials in Wonosobo Regency Regional Apparatus Organization agreed that financial reports had been presented fully. This conclusion reinforced the findings of several previous studies which stated that an improved Reporting System could increase Performance Accountability[35][36][37].

4.8 Hypothesis Discussion 3

Proposed hypothesis 3 relates to the role of financial management as a modulating variable, from clarity of budget targets to accountability for performance. As a result, the beta coefficient of the impact of the clarity of budget targets on the performance accountability of government agencies was -0.029, and the significance value was 0.037. Accounting controls, therefore, are empirically proven variables that mitigate the impact of budget target clarity on agency performance accountability, which can go in the opposite direction. In fact, accounting controls have mitigated the impact of budget target clarity on agency performance accountability.

Partially, Clarity of Budget Targets could indeed affect Government Agencies' Performance Accountability. However, by placing Accounting Control as a moderating variable, it could actually weaken this influence. Finance officers in the Regional Apparatus Organization of Wonosobo Regency could increase accountability for performance if the budget was in accordance with the Regional Revenue and Expenditure Budget Plan, budget targets were clear and specific, budget execution was effective and budget realization was in accordance with organizational goals and on time.

4.9 Hypothesis Discussion 4

Hypothesis 4 proposed was related to the role of Accounting Control as a moderating variable for the influence of Reporting Systems on Performance Accountability of Government Agencies. From statistical testing, the beta value of the interaction coefficient between . Reporting System and Accounting Control was 0.027 and significance probability value was 0.000. Thus, hypothesis 4 was supported. Empirically proven that Accounting Control was able to be a moderating variable for Impact of reporting systems on agency performance accountability in a positive direction. Statistical descriptions showed that financial statements had been presented fully and financial statements had been understood by users and it could be compared with financial statements of the previous period. Accounting Control especially on items Z3, Z4 and Z5 had high scores.

5. Conclusion

Based on data analysis and hypothesis testing, some of the conclusions formulated

were:

1. Budget targets had been set clearly and specifically. Likewise, the objectives of the work plan were in accordance with the Regional Revenue and Expenditure Budget Plan so that it could increase accountability for the performance of government agencies in the Wonosobo Regency.
2. The Reporting System within the scope of Wonosobo Regency Regional Apparatus Organization had been implemented effectively. It was evident from financial reports that were presented fully, could be tested, and could be understood by users so as to increase Accountability for agency performance. The accounting controls that had been carried out had involved budget users, financial administration officials, and technical implementers of activities. Indeed, systematic and scheduled e-evaluation was not the basis for decision making. However, findings within the scope of Wonosobo Regency Regional Apparatus Organization stated that accounting controls carried out could actually weaken the influence of clarity on budget targets on performance accountability.
3. Reporting system within the scope of Wonosobo Regency Regional Apparatus Organization had been implemented effectively and had involved budget users as one of the realizations of accounting control. This effort increased accountability for performance of government agencies.

Policy Implications

1. Positively, Budget target clarity impacted agency accountability . Therefore, within the scope of Regional Apparatus Organization of Wonosobo Regency, budget preparation policies had to be oriented towards clear and specific budget targets and had to involve the participation of budget preparers. It was done so that the realization of the budget could be used to achieve organizational goals effectively.
2. Related to the Reporting System, Wonosobo Regency Regional Apparatus Organization had to present complete, verifiable and understandable financial reports to improve performance accountability.
3. Accounting controls that could strengthen the influence of the reporting system on performance accountability needed to be maintained and even increased by involving budget users, financial administration officials and technical implementing officials. A systematic and scheduled evaluation mechanism had also to be carried out

References

- [1] J. Kang, Z. Diao, and M. T. Zanini, "Business-to-business marketing responses to COVID-19 crisis: a business process perspective," *Mark. Intell. Plan.*, vol. 39, no. 3, pp. 454–468, 2021.
- [2] S. S. Nudurupati, P. Garengo, and U. S. Bititci, "Impact of the changing business environment on performance measurement and management practices," *Int. J. Prod. Econ.*, vol. 232, p. 107942, 2021.
- [3] A. Qasim and F. F. Kharbat, "Blockchain technology, business data analytics, and artificial intelligence: Use in the accounting profession and ideas for inclusion into the accounting curriculum," *J. Emerg. Technol. Account.*, vol. 17, no. 1, pp. 107–117, 2020.
- [4] T. T. Y. Alabdullah and A. Kanaan-Jebna, "The Mediating Role of Innovation on the Relationship between Supply Chain Management and Company Performance in the Kingdom of Bahrain," *J. Humanit. Soc. Sci. Bus.*, vol. 3, no. 1, pp. 160–176, 2023.
- [5] A. Di Vaio, R. Hassan, and C. Alavoine, "Data intelligence and analytics: A bibliometric analysis of human–Artificial intelligence in public sector decision-making effectiveness," *Technol. Forecast. Soc. Change*, vol. 174, p. 121201, 2022.
- [6] J. Moll and O. Yigitbasioglu, "The role of internet-related technologies in shaping the work of accountants: New directions for accounting research," *Br. Account. Rev.*, vol. 51, no. 6, p. 100833, 2019.
- [7] U. Rahardja, Q. Aini, D. Manongga, I. Sembiring, and Y. P. A. Sanjaya, "Enhancing Machine Learning with Low-Cost P M2. 5 Air Quality Sensor Calibration using Image Processing," *APTISI Transactions on Management*, vol. 7, no. 3, pp. 201–209, 2023.
- [8] U. Rahardja, C. T. Sigalingging, P. O. H. Putra, A. Nizar Hidayanto, and K. Phusavat, "The impact of mobile payment application design and performance attributes on

- consumer emotions and continuance intention," *SAGE Open*, vol. 13, no. 1, p. 215824402311519, 2023.
- [9] I. M. Enholm, E. Papagiannidis, P. Mikalef, and J. Krogstie, "Artificial intelligence and business value: A literature review," *Inf. Syst. Front.*, vol. 24, no. 5, pp. 1709–1734, 2022.
- [10] T. Ramakrishnan, J. Khuntia, A. Kathuria, and T. J. V Saldanha, "An integrated model of business intelligence & analytics capabilities and organizational performance," *Commun. Assoc. Inf. Syst.*, vol. 46, no. 1, p. 31, 2020.
- [11] M. Kouhizadeh, Q. Zhu, and J. Sarkis, "Blockchain and the circular economy: potential tensions and critical reflections from practice," *Prod. Plan. Control*, vol. 31, no. 11–12, pp. 950–966, 2020.
- [12] M. A. E.-A. Youssef and H. Mahama, "Does business intelligence mediate the relationship between ERP and management accounting practices?," *J. Account. Organ. Chang.*, vol. 17, no. 5, pp. 686–703, 2021.
- [13] U. Rahardja, Q. Aini, N. Puji, L. Santoso, M. Hardini, and A. Edliyanti, "Financial management system integrated by web-based payment cash link solution to invent smart reconciliation," *leomsociety.org*. [Online]. Available: <http://www.ieomsociety.org/singapore2021/papers/829.pdf>. [Accessed: 24-Nov-2023].
- [14] K. Asiaei, N. Bontis, R. Alizadeh, and M. Yaghoubi, "Green intellectual capital and environmental management accounting: Natural resource orchestration in favor of environmental performance," *Bus. Strateg. Environ.*, vol. 31, no. 1, pp. 76–93, 2022.
- [15] K. D. Dzigbede, S. B. Gehl, and K. Willoughby, "Disaster resiliency of US local governments: Insights to strengthen local response and recovery from the COVID-19 pandemic," *Public Adm. Rev.*, vol. 80, no. 4, pp. 634–643, 2020.
- [16] F. Alkaraan, K. Albitar, K. Hussainey, and V. G. Venkatesh, "Corporate transformation toward Industry 4.0 and financial performance: The influence of environmental, social, and governance (ESG)," *Technol. Forecast. Soc. Change*, vol. 175, p. 121423, 2022.
- [17] E. Nica, "Urban big data analytics and sustainable governance networks in integrated smart city planning and management," *Geopolit. Hist. Int. Relations*, vol. 13, no. 2, pp. 93–106, 2021.
- [18] A. Ruangkanjanases, A. Khan, O. Sivarak, U. Rahardja, S.-W. Chien, and S.-C. Chen, "The magic of brand experience: A value co-creation perspective of brand equity on short-form video platforms," *Emerg. Sci. J.*, vol. 7, no. 5, pp. 1588–1601, 2023.
- [19] G. A. Pombescu, M. Cucciniello, and J. R. Gil-Garcia, "Accounting for citizens when explaining open government effectiveness," *Gov. Inf. Q.*, vol. 37, no. 2, p. 101451, 2020.
- [20] C.-L. Chen, Y.-C. Lin, W.-H. Chen, C.-F. Chao, and H. Pandia, "Role of government to enhance digital transformation in small service business," *Sustainability*, vol. 13, no. 3, p. 1028, 2021.
- [21] L. Farinha, J. Lopes, S. Bagchi-Sen, J. R. Sebastião, and J. Oliveira, "Entrepreneurial dynamics and government policies to boost entrepreneurship performance," *Socioecon. Plann. Sci.*, vol. 72, p. 100950, 2020.
- [22] N. Dwijendra et al., "Application of experimental design in optimizing fuel station queuing system," *Ind. Eng. Manag. Syst.*, vol. 21, no. 2, pp. 381–389, 2022.
- [23] A. Lutfi, A. L. Al-Khasawneh, M. A. Almaiah, A. Alsyoud, and M. Alrawad, "Business sustainability of small and medium enterprises during the COVID-19 pandemic: The role of AIS implementation," *Sustainability*, vol. 14, no. 9, p. 5362, 2022.
- [24] A. M. Levenda and E. Tretter, "The environmentalization of urban entrepreneurialism: From technopolis to start-up city," *Environ. Plan. A Econ. Sp.*, vol. 52, no. 3, pp. 490–509, 2020.
- [25] K. Al-Htaybat, K. Hutaibat, and L. von Alberti-Alhtaybat, "Global brain-reflective accounting practices: Forms of intellectual capital contributing to value creation and sustainable development," *J. Intellect. Cap.*, vol. 20, no. 6, pp. 733–762, 2019.
- [26] L. Rinaldi, "Accounting and the COVID-19 pandemic two years on: insights, gaps, and an agenda for future research," in *Accounting Forum*, 2023, vol. 47, no. 3, pp. 333–364.
- [27] E. Kristoffersen, P. Mikalef, F. Blomsma, and J. Li, "Towards a business analytics capability for the circular economy," *Technol. Forecast. Soc. Change*, vol. 171, p. 120957, 2021.
- [28] U. Rahardja, M. A. Ngadi, R. Budiarto, Q. Aini, M. Hardini, and F. P. Oganda,

- "Education Exchange Storage Protocol: Transformation into decentralized learning platform," *Front. Educ.*, vol. 6, 2021.
- [29] X. Zhang, M. Husnain, H. Yang, S. Ullah, J. Abbas, and R. Zhang, "Corporate business strategy and tax avoidance culture: Moderating role of gender diversity in an emerging economy," *Front. Psychol.*, vol. 13, p. 827553, 2022.
- [30] U. Rahardja, T. Hongsuchon, T. Hariguna, and A. Ruangkanjanases, "Understanding impact sustainable intention of S-commerce activities: The role of customer experiences, perceived value, and mediation of relationship quality," *Sustainability*, vol. 13, no. 20, p. 11492, 2021.
- [31] T. J. V Saldanha, D. Lee, and S. Mithas, "Aligning information technology and business: The differential effects of alignment during investment planning, delivery, and change," *Inf. Syst. Res.*, vol. 31, no. 4, pp. 1260–1281, 2020.
- [32] Alwiyah and D. P. Lazirkha, "The impact of Artificial Intelligence in smart city air purifier systems," *Aptisi Transactions on Technopreneurship (ATT)*, vol. 4, no. 2, pp. 205–214, 2022.
- [33] B. Obrenovic, J. Du, D. Godinic, D. Tsoy, M. A. S. Khan, and I. Jakhongirov, "Sustaining enterprise operations and productivity during the COVID-19 pandemic: Enterprise Effectiveness and Sustainability Model," *Sustainability*, vol. 12, no. 15, p. 5981, 2020.
- [34] [8] I. D. Astuti, S. Rajab, and D. Setiyoudji, "Cryptocurrency blockchain technology in the digital revolution era," *Aptisi Transactions on Technopreneurship (ATT)*, vol. 4, no. 1, pp. 9–16, 2022.
- [35] U. Awan, S. Shamim, Z. Khan, N. U. Zia, S. M. Shariq, and M. N. Khan, "Big data analytics capability and decision-making: The role of data-driven insight on circular economy performance," *Technol. Forecast. Soc. Change*, vol. 168, p. 120766, 2021.
- [36] M. Y. Effendy, E. Nurninawati, and A. Ari Setiyawan, "Design and build A web-based asset management information system at pt Thamrin Telekomunikasi Network," *Aptisi Transactions on Technopreneurship (ATT)*, vol. 4, no. 1, pp. 48–58, 2022.
- [37] S. Pankov, V. K. Velamuri, and D. Schneckenberg, "Towards sustainable entrepreneurial ecosystems: Examining the effect of contextual factors on sustainable entrepreneurial activities in the sharing economy," *Small Bus. Econ.*, vol. 56, pp. 1073–1095, 2021.