

## Information Systems and Human Resource Capacity in Strengthening Budget Discipline and Participatory Governance: Evidence from Indonesia's Village Funds

Ronald N Girsang, Haryadi\*, Afrizal, Sri Rahayu

Faculty of Economics and Business, Universitas Jambi, Indonesia

*girsangumb@gmail.com, Haryadi.Fe@unja.ac.id (Corresponding author), afrizaldoktor@unja.ac.id, srijambi@gmai.com*

**Abstract.** This study investigates the determinants of budget discipline and the mediating role of financial governance in improving participatory village fund management through a data-based perspective. By integrating insights from public finance, agency theory, and information system governance, this study examines how human resource quality affects fiscal discipline and community participation in Indonesia's decentralized budgeting system. Using a structured survey of 240 village officials in Bungo District, Jambi Province, and applying Structural Equation Modeling-Partial Least Squares (SEM-PLS), this study empirically tests the relationship between HR capacity, budget discipline, and participatory practices. The findings show that HR quality significantly strengthens budget discipline, while budget discipline directly and positively influences community participation. However, HR quality does not have a direct effect on participation, confirming that fiscal discipline mediates this relationship. These results highlight the important role of information-based governance mechanisms and digital literacy in upholding accountability and transparency at the village level. By framing budget discipline as an information management process, rather than a procedural constraint, this study contributes to the literature on participatory informatics and local fiscal governance. The practical implications suggest that strengthening digital competencies, data integration, and e-budgeting capacity among village officials can improve the quality of decision-making, transparency, and public trust in public financial management.

**Keywords:** information system governance, fiscal discipline, participatory budgeting, human resource analysis, village fund management, transparency.

## 1. Introduction

Decentralization reforms in Indonesia have expanded regional fiscal authority and transferred significant responsibilities in public financial planning, implementation, and reporting to the village level. This policy aims to improve the efficiency, effectiveness, and accountability of public services through greater distribution of authority to regional governments. Since the enactment of Law No. 23 of 2014 on Regional Government, the paradigm of Indonesian government has shifted from a centralistic to a decentralized system, in which villages have become the main actors in community-based development (Talitha et al., 2020). As a concrete manifestation of fiscal/budgetary decentralization, the government implemented the Village Fund Program through Law No. 6 of 2014 on Villages. This program provides direct fiscal transfers from the central government to villages to strengthen local autonomy, accelerate equitable development, and improve community welfare (Paska et al., 2025; Yudaruddin et al., 2023).

The regulatory framework is clear, but its implementation still faces serious challenges, particularly those related to budget discipline, human resource capacity, and the effectiveness of public oversight. Data shows that delays in disbursement, low budget realization, and weak community participation indicate structural weaknesses in village fiscal management. As of October 2023, the realization of Village Funds nationally only reached IDR 54.71 trillion or 78.2% of the IDR 70 trillion target. The Ministry of Home Affairs in 2023 noted that in Jambi Province, this realization was even lower, at around 65%, while in Bungo Regency it only reached 60% as of August 2024. The Jambi Representative Office of the Supreme Audit Agency (BPK) report (2023) states that these obstacles were caused by delays in fulfilling administrative requirements, the limited capacity of village officials in preparing accountability reports, and the lack of community participation in the planning and evaluation of village activities.

The development of digital governance in the public sector shows that the effectiveness of Village Fund management now depends heavily on the ability of village governments to utilize digital financial information systems to collect, process, and disclose data transparently. The Village Financial System (SISKEUDS) application is a concrete example of the implementation of a digital platform that can increase transparency, strengthen budget discipline, and accelerate the financial reporting process when implemented properly (Imani et al., 2021). The use of public information systems such as SIPD and SIMDA has also been shown to improve the accountability of regional financial management through greater transparency, efficiency, and data accuracy. However, the effectiveness of these systems is highly dependent on the competence of the human resources (HR) managing them. HR who understands financial regulations and have operational capabilities in information systems tend to be more disciplined and accountable in reporting and budget control (Daud et al., 2025). In this study, information systems are not measured directly, but are positioned as an institutional context that shapes information accountability mechanisms, namely the process of financial data flow, management, and utilization mediated by human resource capacity and fiscal discipline of village officials.

From an agency theory perspective, the village government functions as an agent mandated by the central government as the principal to manage public funds for the benefit of the community (Eisenberg & Mussen, 1989; Jensen & Meckling, 1976). Research shows that information asymmetry between village and central governments can increase the risk of moral hazard and inefficiency, especially if it is not balanced with adequate control mechanisms. Information asymmetry has been proven to have a positive and significant effect on the potential for village fund fraud, making budget discipline and internal oversight important instruments for ensuring transparency, timeliness, and accountability in village financial management. The competence of village human resources acts as a moderating factor that strengthens the influence of internal control, community participation, and information technology on the accountability of financial management (Siagian et al., 2023).

The empirical conditions in Bungo Regency, Jambi Province, support this analysis. In 2021, the

realization of Village Funds only reached 36.02% of the total Rp173.14 billion, with the average allocation per village decreasing from Rp845 million (2021) to Rp801 million (2022), indicating a decline in the effectiveness of fund distribution and utilization (DJPb Jambi Province, 2022; BPK Jambi, 2023). This fact shows that improving the governance of Village Funds requires not only a reliable digital system, but also an increase in the competence of officials and budget discipline. The implementation of digital accountability, e-budgeting, and e-government has been proven to increase transparency, efficiency, and public participation in financial management. In addition, participatory information systems such as e-participatory budgeting and blockchain also strengthen public oversight and trust (Bisogno et al., 2022). Thus, synergy between village financial information systems, human resource capacity, and budgetary discipline are fundamental factors in creating transparent, accountable, and participatory Village Fund management.

In the context of public financial management at the village level, information systems play an important role as infrastructure that supports transparency and accountability. In Indonesia, the implementation of the Village Financial System (SISKEUDES) has become an integral part of efforts to digitize public governance, enabling more transparent tracking of budget implementation. Although this study does not directly measure information system variables, the discussion is conducted within an institutional framework that positions SISKEUDES as an information environment that facilitates improvements in human resource capacity, budget discipline, and participatory governance practices. This study contributes to the literature on information accountability and data-driven decision-making in the public sector. It aims to provide empirical evidence on the relationship between these three factors in supporting the effective management of Village Funds in Indonesia, as well as to offer recommendations for strengthening the implementation of e-budgeting, improving the digital competence of officials, and developing sustainable participatory oversight mechanisms in village governance.

Village funds are public financial instruments allocated from the state budget through district/city budgets to support village administration, development, guidance, and community empowerment, based on the principles of equity, need, and respect for local values. Public finance theory, as formulated by Musgrave, emphasizes the role of government in resource allocation, income distribution, and economic stabilization to achieve collective welfare, where village funds are a form of fiscal intervention to overcome market failures and ensure distributive justice. In practice, the allocation of village funds has been proven to encourage inclusive growth, improve the quality of village governance, public services, and community welfare, although challenges related to equity and effectiveness still exist (Ernawati et al., 2021; K. S. Handayani et al., 2022).

The Public Finance Theory proposed by Richard A. Musgrave emphasizes three main functions of government in the economy, namely resource allocation, income distribution, and economic stabilization. These three functions form the main basis for understanding how fiscal policy is directed to achieve efficiency, fairness, and macroeconomic stability (Pilipenko et al., 2020). In the context of Village Fund management, this theory explains how the government plays a role in providing public goods at the local level, reducing regional disparities, and strengthening the economic capacity of rural communities through targeted fiscal policies.

The transformation of public finance towards digital governance has a significant impact on the transparency, efficiency, and accountability of public fund management. The implementation of information systems such as e-budgeting, open government data, and other digital platforms enables the planning, implementation, and reporting of finances to be carried out in an integrated and real-time manner, thereby strengthening budgetary discipline and minimizing the risk of irregularities. The digitization of public finance also increases public participation through e-participatory budgeting mechanisms, supported by technologies such as blockchain to prevent data manipulation and strengthen public trust (Krynysia, 2024).

## **Agency Theory and Information Asymmetry in Village Governance**

The agency theory developed by Jensen & Meckling (1976) and Eisenhardt (1989) highlights the relationship between principals (owners or mandate givers, such as the central government or the community) and agents (mandate implementers, such as the village government), where information asymmetry often occurs agents have more or different information than principals, which has the potential to cause moral hazard and reduce accountability. In the context of public organizations such as village governments, this information asymmetry can cause agents to act in their own interests rather than those of the principal if there are no adequate control mechanisms in place (Eisenhardt, 1989; Jensen & Meckling, 1976).

To minimize these risks, budget discipline, community participation, and digital information systems serve as important control mechanisms. Budget discipline ensures that funds are used according to regulations, participation increases transparency and oversight, while digital information systems facilitate data access and reporting, thereby reducing opportunities for information manipulation. These three mechanisms help improve incentive and oversight systems, so that agents are more motivated to act in the interests of principals and increase the accountability of village administration (Eisenhardt, 1989; Jensen & Meckling, 1976).

## **Human Resources and Budget Discipline**

The quality of human resources has proven to be a key factor in the effective management of public funds, particularly in budget planning, implementation, and reporting. Technical competence, accounting knowledge, and good work ethics among village officials significantly improve budget discipline and budget realization performance, including timeliness and accuracy of reporting. Skilled HR with financial literacy can optimize the budget process in accordance with the principles of efficiency and accountability, while limited competencies often cause delays in disbursement and reporting. Research also shows that HR competencies have a positive effect on performance-based budget implementation and reporting quality, especially when supported by digital information systems such as ERP or SIPD (K. S. Handayani et al., 2022; Rahmadiani & Ramadhan, 2024).

Research consistently shows that the quality of human resources (HR) is positively related to budget discipline and public financial management performance. The capacity and competence of HR, both at the managerial and staff levels, have a significant effect on the consistency of budget planning, implementation, and reporting; inadequate HR often causes delays in budget absorption and low budget realization effectiveness (Gowasa et al., 2021; Mitang & Nalle, 2024; Pribadi et al., 2020; Riawan, 2016). Competent and trained human resources have the ability to prepare realistic budgets, oversee implementation, and make necessary adjustments, making them more likely to apply strict budgetary discipline and sound financial principles. (Gowasa et al., 2021).

H<sub>1</sub>: Human resources have a positive and significant effect on village fund budget discipline.

## **Budget Discipline and Participatory Practices**

Budgetary discipline and participatory practices reinforce each other in public financial management, particularly through mechanisms such as participatory budgeting. Participatory budgeting allows the public to be directly involved in the process of planning, allocating, and monitoring the budget, thereby increasing transparency, accountability, and fiscal efficiency of the government. Empirical studies show that the adoption of participatory budgeting in various countries, including South Korea and the United Kingdom, contributes to increased administrative efficiency, fiscal sustainability, and strengthens public trust and engagement in public decision-making (Jung, 2021).

The concept of social accountability is also realized through active community involvement, whereby the higher the level of budgetary discipline and transparency, the greater the public trust and participation in deliberative forums and program evaluations (Dzusova, 2023; Mardihang et al., 2023).

Participatory budgeting models that involve the community in a structured manner can bridge the gap between institutional capacity and meaningful public participation, as well as encourage more democratic and responsive financial management (Mardihang et al., 2023).

Recent research confirms that budget discipline not only serves as a financial control mechanism, but also forms the foundation for participatory and accountable governance practices. Transparency in the budgeting process encourages public participation in planning, implementation, and oversight of fund use, thereby strengthening public trust and improving the effectiveness of budget management. Public participation in budgeting has been shown to result in a more equitable and community-oriented budget allocation, as well as strengthening social oversight of local government (Mardihang et al., 2023).

H<sub>2</sub>: Budget discipline in village funds has a positive and significant effect on participatory practices

### **E-Government, Digital Accountability and Information Transparency**

Empirical research in Indonesia shows that the implementation of e-government through the digitization of village financial information systems, such as the SISKEUDES application, significantly improves transparency, digital accountability, and efficiency in village fund management. This system enables the planning, implementation, monitoring, and reporting of village budgets to be carried out in an integrated and documented manner, and can be accessed by the public, thereby strengthening budget discipline and encouraging community participation (Maharani & Widodo, 2024; Susanti et al., 2021). The digitization of village financial reporting also contributes to the achievement of sustainable development goals (SDGs) by facilitating public oversight and reducing paper usage (B. Handayani et al., 2023). The implementation of SISKEUDES is not measured directly as an empirical construct in this model, but is used to explain the mechanism of information accountability that underlies the relationship between human resource capacity, budget discipline, and community participation.

Other studies confirm that transparency of information, accountability, and the use of information technology together have a positive impact on village fund management, especially when supported by increased human resource capacity and digital literacy (Khairi et al., 2024). Public trust in e-government systems is also influenced by accessibility, responsiveness, and data transparency, although challenges such as technological infrastructure and varying levels of digital literacy still need to be addressed (Paulus et al., 2025). Thus, the integration of e-government, digital accountability, and information transparency has proven to strengthen participatory, accountable, and sustainable village financial management in Indonesia (Susanti et al., 2021).

### **Conceptual Framework**

Empirical studies show a systematic link between human resource capacity, budget discipline, and participatory practices in the management of Village Funds. Competent human resources play an important role in creating accountable and transparent financial management, as well as ensuring compliance with regulations in financial planning, implementation, and reporting (Ginting et al., 2023). Based on this, the first hypothesis (H<sub>1</sub>) states that human resource capacity has a positive effect on budget discipline.

Participatory practices such as participatory budgeting increase the effectiveness and fairness of village financial management when supported by inclusive organizations and active communities. Public participation also encourages resource allocation that is more responsive to local needs (No & Hsueh, 2020). Thus, improving human resource capacity strengthens budgetary discipline and opens up space for community participation, as formulated in the second hypothesis (H<sub>2</sub>).

Budget discipline acts as a mediator between human resources and community participation. Village officials with integrity and discipline create transparent finances that can be monitored by the

public. Clear procedures and open information foster public trust to engage in the planning and monitoring process (Júnior et al., 2020; Manes - Rossi et al., 2021). Thus, budget discipline strengthens the influence of human resources on public participation.

The use of digital information systems such as SISKEUDES and SIPD strengthens the relationship between human resources, budget discipline, and community participation. Digitalization enables real-time data integration and increases public transparency (Taiwo, 2024). HR who are proficient in information technology are able to maintain accuracy and discipline in budgeting and encourage data-driven participation, which strengthens public trust (Rhamadhani & Edeh, 2024) Based on this, the third hypothesis (H<sub>3</sub>) states that budget discipline mediates the influence of HR on community participation.

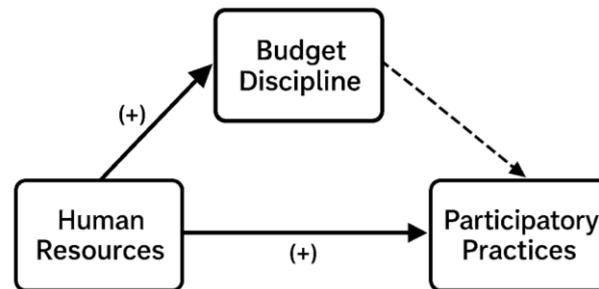


Fig.1: Conceptual Framework

As illustrated in Figure 1, this study conceptualizes budget discipline as a mediating variable linking human resource capacity and participatory governance within the framework of digital fiscal management. The proposed relationships reflect the theoretical foundation of agency theory and information systems governance, in which competent human resources are essential for ensuring transparency, accountability, and procedural compliance in decentralized financial systems. This conceptual framework is consistent with recent developments in information systems research, emphasizing that digital tools can reinforce fiscal discipline and participatory accountability.

(Shakir et al., 2025) in the *Journal of Logistics, Informatics and Service Science (JLISS)*, found that human resource information systems (HRIS) substantially enhance organizational transparency and managerial efficiency by facilitating accurate data processing and real-time monitoring. Their findings confirm that digital systems do not merely support administrative tasks but also strengthen organizational discipline through data integration and accountability mechanisms. In line with this evidence, the present study situates budget discipline as the key mediating process through which human resource capacity influences participatory governance, particularly in an information-enabled environment like Indonesia's village financial management systems.

## 2. Research Method

The information system in this study is positioned as an institutional context, not as a construct that is measured quantitatively. In other words, the term "information system" in the title reflects the role of the digital environment, particularly the use of SISKEUDES, as a governance infrastructure that forms a framework for village officials to manage budgets in a disciplined and transparent manner. Research data was obtained in aggregate form or composite scores for the main variables (human resource capacity, budget discipline, and participatory governance) so that the analysis was conducted at the construct level, taking into account the limitations of item-level data. This approach ensures that the interpretation of the results remains focused on the relationship between substantive variables in the context of the implementation of the village government information system.

### Research Approach

Using data-based modeling through the Structural Equation Modeling–Partial Least Squares (SEM-PLS) approach to examine the relationship between variables objectively and simultaneously based on empirical data. This method is suitable for complex models and non-normal data with small sample sizes (Sarstedt et al., 2021). The research focused on villages in Bungo Regency, Jambi Province, as a contextual case study to gain a deeper understanding of the dynamics of Village Fund management, particularly in relation to budget discipline, human resource competencies, and the utilization of information systems. Data was collected through field surveys using structured questionnaires developed based on theoretical indicators for each research variable. The analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) to test the relationships between variables and the hypothesized mediating effects. Although the PLS-SEM results were used as an indicative approach, the interpretation was still carried out at a conceptual level, taking into account the context of the information system and institutional capacity.

### Questionnaire Planning

The primary data collection instrument used in this study was a questionnaire using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). This questionnaire consisted of closed-ended statements designed to measure respondents' perceptions of the main research variables: human resources, budget discipline, and participation. The questionnaire items were developed based on theoretical indicators discussed in the literature review and adapted from previous relevant studies. Before being distributed widely, this questionnaire was tested in advance to assess its linguistic clarity and initial reliability. The information system was not measured as a latent variable, but served as a supporting factor that strengthened the relationship between human resources, budget discipline, and community participation in village financial management.

### Sampling and Data Collection

The research population included all village officials in 141 villages in Bungo District. However, the researchers deliberately selected only villages categorized as “non-independent” based on the Village Development Index (IDM), resulting in a total of 123 villages. The research sample consisted of 240 respondents from four positions: Village Head, Village Secretary, Finance Officer, and Chair of the Village Consultative Body (BPD). Data collection was carried out by distributing questionnaires directly and online if necessary, depending on geographical conditions and respondent availability.

### Analysis Data

In the analysis process, SmartPLS is used to estimate the relationship between variables through the Partial Least Squares (PLS) algorithm. This algorithm works iteratively to maximize the explained variance in the dependent latent variables. After the estimates are obtained, an evaluation is conducted on the reliability, construct validity, and model fit to ensure the accuracy of the measurement model and the strength of the relationships between variables.

## 3. Results and Discussions

### Discriminant Validity

Discriminant validity in PLS-SEM can be tested using the Heterotrait–Monotrait (HTMT) ratio, which is recommended because it is more sensitive and accurate than traditional methods such as the Fornell-Larcker criteria or cross-loading. HTMT values below the threshold of 0.90 (or 0.85 in some literature) indicate that the constructs in the model are empirically distinct from one another and meet the criteria for discriminant validity (Benitez et al., 2020; Henseler et al., 2015). The results of discriminant validity are presented in the following table.

Table 1. Discriminant validity

	Budget Discipline	Human resources	Participatory
Budget Discipline			
Human resources	0,289		
Participatory	0,858	0,289	

Based on the results in Table 1, the correlation values between constructs show that each variable in the model has an adequate level of distinctiveness. The highest correlation value between Budget Discipline and Participatory, at 0.858, is still below the maximum limit of 0.90, which means that the two constructs are empirically distinct even though they have a close conceptual relationship. Meanwhile, the correlations between Human Resources and Budget Discipline (0.289) and Participatory (0.289) are well below the threshold, confirming that Human Resources is an independent variable in the model. Thus, the results of the HTMT test and correlation matrix confirm that the measurement model has met the criteria for discriminant validity, which indicates the reliability of the construct in distinguishing between research variables

### Structural Model Evaluation (Inner Model)

The structural model evaluation stage includes several tests, such as VIF value analysis, direct and indirect relationships between variables, determination coefficient assessment ( $R^2$ ), model predictive relevance, effect size measurement ( $f^2$ ), and model suitability assessment.

#### VIF Value Analysis

Variance Inflation Factor (VIF) is a statistical measure used to detect collinearity between predictor variables in linear regression analysis. Conceptually, VIF is calculated based on the coefficient of determination ( $R^2$ ) obtained when one predictor variable is regressed against all other predictor variables. In other words, VIF describes the extent to which the variance of the regression coefficient increases due to the relationship or correlation between predictor variables in the model (Ekiz, 2021).

Table 2. VIF Value Analysis

	Budget Discipline	Human resources	Participatory
Budget Discipline			1.067
Human resources	1.000		1.067
Participatory			

Based on Table 2, all Variance Inflation Factor (VIF) values are below the maximum limit of 3.3. This figure is generally used as an initial indication that there are no serious multicollinearity issues among the independent variables in the regression model, although it is not the only benchmark (Kalnins & Hill, 2023). The VIF values for the Human Resources variable are 1.000 and for the Participatory variable are 1.067, indicating that there are no symptoms of multicollinearity between variables in the structural model. Thus, each construct in the model stands independently and does not excessively influence each other. These results confirm that the research model has met the assumption of multicollinearity freedom, so that the estimation of the relationship between variables can be considered valid and accurate for the next stage of testing, namely the assessment of the coefficient of determination ( $R^2$ ), effect size ( $f^2$ ), and overall model suitability

#### Model Suitability Test

The model fit indicators used are SRMR and NFI, following the features available in SmartPLS. Based on the recommendations (Asghar et al., 2023) nilai SRMR sebaiknya di bawah 0,08, dan NFI sebaiknya di atas 0,8. Dalam studi ini, kesesuaian model secara keseluruhan belum optimal, terutama

karena nilai SRMR melebihi 0,08 dan nilai Chi-Square-nya tak terhingga. Hasil kesesuaian model yang terperinci disajikan pada Tabel 3.

Table 3. Model Suitability

	<b>Saturated Model</b>	<b>Expected Models</b>
<b>SRMR</b>	0.120	0.120
<b>d_ULS</b>	1.741	1.741
<b>d_G</b>	none	none
<b>Chi-Kuadrat</b>	Unlimited	Unlimited
<b>NFI</b>	none	tidak ada

The table above shows a Standardized Root Mean Square Residual (SRMR) value of 0.120, which means that the model fit is still not optimal because it exceeds the general threshold of 0.08 recommended by Hu and Bentler (1999). The SRMR index is used to assess the extent to which the structural model is able to represent empirical data well (Sathyanarayana & Mohanasundaram, 2024). In this study, the relatively high SRMR value may be due to the limited sample size and low model complexity, considering that the model consists of only three main constructs.

The d\_ULS and d\_G values of 1.741, respectively, indicate a relatively small difference, so the model is still quite representative of the actual data. The Chi-Square value in the saturated model and the estimated model cannot be estimated conventionally because the PLS-SEM approach does not depend on the assumption of normal distribution, so this indicator is not the main measure in assessing model fit. In addition, the Normed Fit Index (NFI) value does not appear automatically due to the limited number of constructs in the model. However, based on a comparison between the saturated model and the estimated model, the model structure still shows an adequate level of suitability and is feasible for use in further structural relationship testing.

#### **Coefficient of Determination ( $R^2$ )**

Previous research shows that the  $R^2$  value must exceed 0.1 to indicate the influence of exogenous constructs on endogenous constructs. More detailed  $R^2$  coefficients can be found in Table 4.

Table 4. Coefficient of determination  $R^2$ 

	<b>R Square</b>	<b>R Square Customizable</b>
<b>Budget Discipline</b>	0,063	0,059
<b>Participatory</b>	1.000	1.000

The  $R^2$  value of 0.063 in Table 4 shows that only 6.3% of the variation in Budget Discipline can be explained by the Human Resources (HR) variable. This indicates that the influence of HR on budget discipline is still relatively weak, so there are other factors outside the model that have the potential to contribute more to this variable. Conversely, the  $R^2$  value for the Participatory variable of 1.000 indicates that the model is able to fully explain the variation in community participation, signifying a very strong relationship between the variables in the model. Although an  $R^2$  value below 0.10 is generally categorized as a weak effect, this finding still has important conceptual implications. The low  $R^2$  value for the Budget Discipline variable indicates that village fiscal discipline is not only influenced by human resource capacity and competence, but also likely related to other contextual

factors such as administrative governance, oversight mechanisms, and information technology support, which function as reinforcers rather than main variables in this study.

### Effect Size ( $f^2$ )

Effect size analysis ( $f^2$ ) is used to assess the magnitude of the influence of exogenous constructs on endogenous constructs. Effects are categorized as strong if the value is above 0.15, moderate if above 0.02, and weak if below 0.02. Full details regarding  $f^2$  values are presented in Table 5.

Table 5. Effect size  $f^2$

	Budget Discipline	Human Resources	Participatory
Budget Discipline			64815.425
Human Resources	0,067		0,010
Participatory			

The  $f^2$  value of 0.067 indicates that the Human Resources variable has a small effect on Budget Discipline, in accordance with Cohen's (1988) criteria, which sets the limits at 0.02 (weak), 0.15 (moderate), and 0.35 (strong). Meanwhile, the  $f^2$  value in the relationship between Budget Discipline and Participatory shows a very high number, which is likely due to data homogeneity or low variance between respondents. This indicates that the quality of human resources has not made a significant contribution to the level of community participation in the management of Village Funds.

### Direct Line Coefficient

The analysis shows that the relationship between Budget Discipline and Community Participation has a path coefficient ( $\beta$ ) of 1.000 with a p-value of 0.000. This indicates a very strong and significant relationship, showing that budget discipline contributes directly and significantly to increased community participation in village fund management. Further details are presented in Table 6.

Table 6. Direct Coefficients

	Original Sample (O)	Average (M)	Standard Deviation (STDEV)	Statistics T ( O/STDEV )	P value	
Participatory Budgeting > Discipline	1.000	1.000	0.000	4348.954	0.000	Accepted
Human Resources > Budget Discipline	0,250	0,260	0,062	4.055	0.000	Accepted
Human Resources Participatory >	0.000	-0,001	0,001	0,510	0.610	Rejected

The relationship between Human Resources and Budget Discipline shows a path coefficient ( $\beta$ ) of 0.250 and a p-value of 0.000, indicating a positive and significant influence of HR quality on budget discipline. However, the direct effect of Human Resources on Community Participation shows a path coefficient ( $\beta$ ) of 0.000 and a p-value of 0.610, indicating that there is no statistically significant direct effect between the quality of human resources and the level of community participation.

### Indirect Path Coefficient

Based on indirect path analysis, the path coefficient ( $\beta$ ) between Human Resources and Community Participation through Budget Discipline is 0.250. The t-statistic value of 4.053 (greater than 1.96) and the p-value of 0.000 (less than 0.05) indicate a statistically significant effect. This finding confirms that Budget Discipline functions as a mediator between Human Resources and Community Participation with the following statistical analysis.

Table 7. Indirect Coefficients

	Original Sample (O)	Average (M)	Standard Deviation	Statistics T ((O/STDEV))	P value
<b>Human Resources -&gt; Budget Discipline - Participatory &gt;</b>	0,250	0,260	0,062	4.053	<b>0.000</b>

Based on indirect path analysis, the path coefficient ( $\beta$ ) between Human Resources and Community Participation through Budget Discipline is 0.250, with a t-statistic value of 4.053 (greater than 1.96) and a p-value of 0.000 (less than 0.05). These results indicate a statistically significant mediating effect. Thus, Budget Discipline acts as a mediating variable that strengthens the relationship between the quality of human resources and the level of community participation in the management of Village Funds.

The results of the study show that Human Resources (HR) has a positive effect on Budget Discipline, but does not directly affect Community Participation in the management of Village Funds. Conversely, Budget Discipline has a significant effect on Participation and acts as a mediator between the two. This finding indicates that improving the quality of HR needs to be accompanied by the implementation of good budget discipline in order to effectively encourage community participation in Village Fund management.

### Discussion

The results of the analysis using SEM-PLS show that human resource quality has a positive and significant effect on budget discipline, but does not have a direct effect on community participation. Conversely, budget discipline has a positive and significant effect on community participation and acts as a strong mediating variable between human resources and public participation. The  $R^2$  value of 0.063 indicates that the contribution of HRM to budget discipline is still limited, suggesting that other factors such as leadership, organizational culture, and the use of information systems also play a role in shaping budget discipline behavior. This finding confirms that increasing HRM capacity is an important prerequisite for building budget management discipline at the village level. From an agency theory perspective, the village government acts as an agent that manages public resources on behalf of the community as the principal. This relationship is prone to information asymmetry because village officials have greater access to financial data. Budget discipline, in this context, serves as an information control mechanism to maintain accountability and reduce information gaps.

The results of the study indicate that competent and ethical human resources are capable of enforcing reporting discipline, ensuring administrative order, and maintaining budget integrity. This is in line with (Suryanto & Kurniati, 2025) who found that the implementation of public sector accounting systems and budget transparency contribute significantly to the quality of local government financial reports. Thus, the capacity of the apparatus and their ability to utilize accounting information systems are key factors in ensuring the regularity and accountability of village budget management.

Furthermore, the finding that human resources do not directly influence community participation indicates that individual capacity is not sufficient to encourage public involvement without a

transparent information management mechanism. Community participation arises when financial data is presented openly, is easily accessible, and can be verified through a reliable information system. This reinforces agency theory, in which transparency becomes a means of equalizing access to information between agents and principals. In this context, budget discipline acts as a channel of accountability a bridge between human resource capacity and public participation. These results are also in line with (Jin & Wang, 2025) who assert that digital information-based governance and online monitoring improve the integrity and credibility of local governments.

Budget discipline has been shown to have a significant impact on community participation. Regular financial reporting, compliance with procedures, and transparency in the use of funds create opportunities for participation because the community can directly monitor the performance of the village government. Village financial information systems, such as SISKEUDES or SIPD, play a role in strengthening this mechanism by providing integrated, timely, and publicly verifiable data. This digital transparency increases public trust and encourages active involvement in budget oversight. These findings are consistent with (Nurhalisa et al., 2024) and (Mardihang et al., 2023), which show that the implementation of e-governance strengthens public accountability and improves the effectiveness of fiscal policies at the local level. Thus, budget discipline supported by information systems functions not only as an administrative instrument but also as a means of public communication between the government and the community.

The results of the study also confirm that budget discipline mediates the relationship between human resources and community participation. This mediation shows that the competence of the apparatus does not automatically increase public participation without regularity in financial information management. Budget discipline becomes an information coordination mechanism that connects the technical capabilities of the apparatus with community participation. Within the framework of agency theory, this condition reflects efforts to reduce information asymmetry through orderly, transparent, and publicly accessible data management practices. These results are in line with (Aziz & Wediyanto, 2024) who emphasize that accountable financial reports strengthen the legitimacy and trust of the community in village government officials.

An SRMR value of 0.120 indicates that the model is not yet optimal, while an  $R^2$  value of 0.063 shows that variations in budget discipline are not fully explained by human resources. This is reasonable because budget discipline at the village level is also influenced by the institutional environment, particularly information system infrastructure and bureaucratic culture. Nevertheless, the validity and reliability tests show adequate results, so that the model can be interpreted conceptually. Further research is recommended to integrate variables such as digital literacy, information technology capacity, and organizational culture to strengthen the model and explain the interaction between human factors and information systems in shaping budget discipline.

Theoretically, this study expands the application of agency theory by placing budgetary discipline as a mechanism for controlling information that is influenced by the quality of human resources and the information system environment. Budgetary discipline is not merely a form of administrative compliance, but rather a form of information accountability that strengthens the relationship of trust between the village government and the community. In practical terms, the results of this study emphasize the need to strengthen human resource capacity through training in financial literacy and accounting information system skills. In terms of policy, local governments need to encourage inter-unit reporting integration, evidence-based reporting, and capacity building in the field of public accountability. Thus, transparent, participatory, and information-based village financial management can be realized through synergy between the competence of the apparatus and effective information system support.

The results of the study show that human resource capacity has a significant effect on budget discipline and indirectly strengthens community participation in the management of Village Funds. In

the context of implementing village government information systems, these findings confirm that the success of public administration digitization is highly dependent on the competence of officials as the main users of the system. Information systems, such as SISKEUDES, can function optimally as decision support systems only when supported by human resources capable of managing data, interpreting fiscal information, and delivering accurate reports. Thus, improving human resource capacity plays a dual role as an internal factor that strengthens fiscal discipline and as an external driver for transparent, data-based participatory governance.

#### **4. Conclusion**

This study shows that human resource (HR) competency significantly improves budget discipline, which in turn encourages community participation in village fund management. The influence of HR on participation is indirect through budget discipline, emphasizing that fiscal transparency depends not only on procedural compliance but also on the capacity of village officials to manage information. From a theoretical perspective, this study expands public finance theory and agency theory by placing budget discipline as a result of HR capabilities, where HR acts as an information intermediary that transforms budget data and program results into meaningful public knowledge, thereby increasing citizen trust and participation. Practically, improving the digital literacy and analytical competence of village officials is important to encourage participatory governance, including the use of the SISKEUDES dashboard, reporting applications, and open data portals. Further research is recommended to explore AI-based financial analytics and blockchain-based audit trails to strengthen accountability and participation in village financial management. Overall, this study confirms that strengthening human resources and digital-based governance are the foundation for disciplined, transparent, and participatory fiscal management.

#### **Acknowledgements**

The authors would like to express their sincere gratitude to all respondents in Bandung Kidul District who participated in this research. We also extend our appreciation to the institutions and academic peers who provided valuable insights and support during the study. Special thanks to Universitas Malikussaleh, STIE Enam Enam Kediri, STIE-IBEK Pangkalpinang, AMA Yogyakarta, and BINUS University for facilitating this collaborative research effort. Finally, we acknowledge the reviewers and editorial team of the *International Journal of Business and Society* for their constructive feedback and guidance throughout the publication process.

#### **References**

- Andarsari, P. R., & Ningtyas, M. (2019). The Role of Financial Literacy on Financial Behavior. *JABE (JOURNAL OF ACCOUNTING AND BUSINESS EDUCATION)*. <https://doi.org/10.26675/jabe.v4i1.8524>
- Angraini. (2015). *Pentingnya Literasi Keuangan*. Penerbit Mitra Wacana Media.
- Ardiana, M., Agustina, R., & Pertiwi, D. (2024). The Role of Self Control as a Moderating Variable on The Effect of Financial Inclusion on Financial Behavior. *Jurnal Economic Resource*. <https://doi.org/10.57178/jer.v7i1.752>
- Arofah, A. A., Purwaningsih, Y., & Indriayu, M. (2018). Financial Literacy, Materialism and Financial Behavior. *International Journal of Multicultural and Multireligious Understanding*, 5, 370–378. <https://doi.org/10.18415/IJMMU.V5I4.171>
- Asyik, N., Wahidahwati, W., & Laily, N. (2022). The Role Of Intellectual Capital In Intervening Financial Behavior and Financial Literacy on Financial Inclusion. *WSEAS TRANSACTIONS ON BUSINESS AND ECONOMICS*. <https://doi.org/10.37394/23207.2022.19.70>

- Benesik Gergely and Juhas, Agnes, G. and C. (2016). Millennials and the Transformation of Generations. Proceedings of the International Conference on Generational Studies.
- Berlianti, D. F., Abid, A. Al, & Ruby, A. C. (2024). Metode Penelitian Kuantitatif Pendekatan Ilmiah untuk Analisis Data. *Jurnal Review Pendidikan Dan Pengajaran*, 7(3), 1861–1864.
- Budiati Suryo and Lestari, Dewi, A. and N. (2018). Karakteristik Generasi Milenial dalam Perspektif Sosial dan Ekonomi. *Jurnal Psikologi Sosial*, 6(2), 112–120.
- Dilasari, D., Mulyati, S., & Kurniawan, A. (2020). Pengaruh Financial Literacy, Lifestyle, Locus of Control Dan Demografi Terhadap Perilaku Konsumtif Generasi Milenial Di Kota Subang. *JASS (Jurnal Akuntansi Masyarakat Berkelanjutan)*, 2(02), 56–77. <https://doi.org/10.35310/jass.v2i02.671>
- Fernandes, D., Lynch, J., & Netemeyer, R. (2014). Financial Literacy, Financial Education and Downstream Financial Behaviors (full paper and web appendix). *Behavioral & Experimental Finance (Editor's Choice) EJournal*. <https://doi.org/10.1287/mnsc.2013.1849>
- Fitri. (2021). Literasi Keuangan dan Pengelolaan Keuangan. Penerbit Akademika.
- Fitriani, D. (2024). The Influence of Lifestyle on Financial Behavior of Generation Z. *Jurnal Manajemen Dan Akuntansi*, 15(2), 115–123. <https://e-journal.sari-mutiara.ac.id/index.php/JMA/article/view/5556>
- HC, dan G. (2021). Inklusi Keuangan: Akses dan Kesempatan. Prenadamedia Group.
- Herrerias, R. (2020). Financial Inclusion and Household Financial Behavior. *Monetary Economics: Financial System & Institutions EJournal*. <https://doi.org/10.2139/ssrn.3717100>
- Hidayah, S. (2025). The Influence of Financial Literacy and the Use of Financial Technology on Financial Management with Lifestyle as a Moderating Variable. *Journal of Business and Finance*, 8(1), 22–31. [https://www.researchgate.net/publication/390632320\\_The\\_Influence\\_of\\_Financial\\_Literacy\\_and\\_the\\_Use\\_of\\_Financial\\_Technology\\_on\\_Financial\\_Management\\_with\\_Lifestyle\\_as\\_a\\_Moderating\\_Variable\\_in\\_the\\_Millennial\\_Generation](https://www.researchgate.net/publication/390632320_The_Influence_of_Financial_Literacy_and_the_Use_of_Financial_Technology_on_Financial_Management_with_Lifestyle_as_a_Moderating_Variable_in_the_Millennial_Generation)
- Huston, S. J. (2010). Measuring Financial Literacy. *Journal of Consumer Affairs*, 44(2), 307–308. <https://www.jstor.org/stable/23859793>
- India, R. B. of. (2014). Financial Inclusion in India: Overview and Outlook. RBI Publications.
- Kotler, P., & Keller, K. L. (2012). *Manajemen Pemasaran* (12th ed.). Erlangga.
- Lestari, A. and S. (2022). Catatan Harian tentang Gaya Hidup Konsumtif. *Jurnal Ekonomi & Perilaku Konsumen*, 5(1), 12–20.
- Lusardi, A. (2012). Financial literacy and financial behavior. *Journal of Economic Literature*, 50(2), 449–457.
- Lusardi, A., & Mitchell, O. S. (2011). Financial Literacy around the World: An Overview. *Journal of Pension Economics and Finance*, 10(4), 497–508. [https://www.scirp.org/\(S\(351jmbntvnsjt1aadkposzje\)\)/reference/ReferencesPapers.aspx?ReferenceID=2264855](https://www.scirp.org/(S(351jmbntvnsjt1aadkposzje))/reference/ReferencesPapers.aspx?ReferenceID=2264855)
- Minor John C., M. S. and M. (2002). Lifestyle and Consumer Behavior. *Jurnal Rahayu Dan Alimudin*, 3(1), 4–15.

- Mireku, K., Appiah, F., & Agana, J. A. (2023). Is there a link between financial literacy and financial behavior? *Cogent Economics & Finance*, 11. <https://doi.org/10.1080/23322039.2023.2188712>
- Nwosu, N. T., & Ilori, O. (2024). Behavioral finance and financial inclusion: A conceptual review and framework development. *World Journal of Advanced Research and Reviews*. <https://doi.org/10.30574/wjarr.2024.22.3.1726>
- Putra, Y. (2016). *Karakteristik Generasi Milenial Indonesia*. Pustaka Millenia.
- Rahayu, R., & FX, E. W. L. (2015). Pengembangan Perangkat Pembelajaran IPA Berbasis Problem Based Learning Di SMP. *Jurnal Kependidikan: Penelitian Inovasi Pembelajaran*, 45(1), 29–43.
- Ricciardi Helen, V. and S. (2012). What is Behavioral Finance? *Journal of Behavioral Finance*, 13(1), 174–180.
- Rokhmawati, A., Fadli, R., & Pramesti, D. (2024). Peran Gaya Hidup sebagai Variabel Moderasi dalam Hubungan Literasi Keuangan dan Perilaku Keuangan. *Jurnal Riset Ekonomi Dan Bisnis*, 9(2), 102–116.
- Sadalia Dedi, I. and N. (2012). *Perilaku Keuangan dan Konsep Behavioral Finance*. Penerbit Universitas Sumatera Utara.
- Sastiono, B., & Nuryakin. (2019). Inklusi Keuangan dan Pengaruhnya terhadap Perilaku Keuangan Generasi Muda. *Jurnal Ekonomi Dan Keuangan Indonesia*, 67(3), 245–260.
- Selvia, G., Rahmayanti, D., Afandy, C., & Zoraya, I. (2021). The Effect of Financial Knowledge, Financial Behavior and Financial Inclusion on Financial Well-being. *Proceedings of the 3rd Beehive International Social Innovation Conference, BISIC 2020, 3-4 October 2020, Bengkulu, Indonesia*. <https://doi.org/10.4108/EAI.3-10-2020.2306600>
- Setiadi, N. J. (2010). *Perilaku Konsumen*. Kencana Prenada Media Group.
- Shidik, Y. M. N., & Kurniawan, A. (2025). THE INFLUENCE OF FINANCIAL INCLUSION AND FINANCIAL BEHAVIOR ON INVESTMENT DECISIONS. *Journal of Management: Small and Medium Enterprises (SMEs)*. <https://doi.org/10.35508/jom.v18i1.16121>
- Soleha S, N. dan H. (2021). Peningkatan Gaya Hidup dan Perilaku Konsumtif. *Jurnal Sosiologi Reflektif*, 15(3), 211–223.
- Stolper, O., & Walter, A. (2017). Financial literacy, financial advice, and financial behavior. *Journal of Business Economics*, 87, 581–643. <https://doi.org/10.1007/S11573-017-0853-9>
- Surya R., A. and U. (2024). Pengaruh Gaya Hidup, Literasi Keuangan dan Inklusi Keuangan Terhadap Pengelolaan Keuangan. *Jurnal Manajemen Dan Pemasaran*, 11(2), 133–142. <https://journal.uc.ac.id/index.php/mapi/article/view/4793>
- Ha, D., Le, P., & Nguyen, D. K. (2025). Financial inclusion and fintech: a state-of-the-art systematic literature review. *Financial Innovation*, 11(1), 69. <https://doi.org/10.1186/s40854-024-00741-0>
- Setiawan, B., Triana, D., Al Azizah, U. S., Wahyuni, A. S., Victor, V., Nathan, R. J., & Fekete-Farkas, M. (2025). Financial technology (Fintech) innovation and financial inclusion: comparative study of urban and rural consumers post-Covid-19 pandemic. *Journal of Innovation and Entrepreneurship*, 14(1), 86. <https://doi.org/10.1186/s13731-024-00452-x>

Islam, K. A., & Khan, M. S. (2024). The role of financial literacy, digital literacy, and financial self-efficacy in FinTech adoption. *Investment Management & Financial Innovations*, 21(2), 370. doi:10.21511/imfi.21(2).2024.30

Choung, Y., Chatterjee, S., & Pak, T. Y. (2023). Digital financial literacy and financial well-being. *Finance Research Letters*, 58, 104438. <https://doi.org/10.1016/j.frl.2023.104438> (Letters)

Jafri, J. A., Amin, S. I. M., Rahman, A. A., & Nor, S. M. (2024). A systematic literature review of the role of trust and security on Fintech adoption in banking. *Heliyon*, 10(1). <https://doi.org/10.1016/j.heliyon.2023.e22980>

Mulyono, M. (2023). The impact of digital literacy on fintech service usage through financial literacy. In *E3S Web of Conferences* (Vol. 426, p. 02003). EDP Sciences. 10.1051/e3sconf/202342602003

Tay, L. Y., Tai, H. T., & Tan, G. S. (2022). Digital financial inclusion: A gateway to sustainable development. *Heliyon*, 8(6), e09766. <https://doi.org/10.1016/j.heliyon.2022.e09766>