

The Influence of Financial Literacy, Financial Inclusion, Fintech Payment Gateway, and Digital Marketing on Financial Performance of MSMEs in Central Java

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This research endeavors to ascertain the impact of financial literacy, financial inclusion, fintech payment gateways, and digital marketing on the financial performance of MSMEs in Central Java. Employing a quantitative research design, this study utilizes primary data. The population under investigation comprises 193,932 MSME actors within the Central Java region. A purposive sampling method was applied, resulting in a total of 100 respondents. Data collection instruments were designed using a likert scale, and the analytical procedures were performed utilizing WarpPLS version 7.0. The results disclose that financial literacy imparts a positive and statistically significant effect on financial performance. Conversely, financial inclusion fails to exhibit a significant association with financial performance. Moreover, the adoption of fintech payment gateways manifests a positive and significant influence, while digital marketing reveals a negative yet statistically insignificant effect on financial performance. Collectively, the concurrent impact of financial literacy, payment gateways, and digital marketing has been empirically validated to exert a favorable influence on financial performance, as indicated by an R-squared value of 69.7%

1. Introduction

1.1 Background

Micro, Small, and Medium Enterprises (MSMEs) constitute the foundational backbone of Indonesia's economic development and labor market integration. As reported by the Ministry of Cooperatives and SMEs, the population of MSMEs has exceeded 64 million units, contributing more than 60% to the national GDP. MSMEs also account for 97% of total employment in Indonesia. The figure below illustrates that Indonesia ranks highest among ASEAN countries in terms of e-wallet usage, with 29% of the population utilizing these services. However, the substantial proliferation of MSMEs in Indonesia is not devoid of inherent challenges. These include economic uncertainty caused by global competition, financing issues, and marketing difficulties [1]. Such factors inevitably impact the financial performance of MSMEs, making it necessary to implement strategies that enhance their performance. One way to do this is by improving MSMEs' financial knowledge, thereby enabling better management and accountability, on par with larger corporations [2].

According to several studies, Limited financial literacy coupled with restricted access to formal financial institutions constitutes significant impediments in the fiscal management of MSMEs. Entrepreneurs with inadequate comprehension of financial principles often struggle to execute sound financial decisions, thereby impeding operational efficiency and curtailing business expansion [2]; and [3]. Most MSME actors also do not conduct systematic financial performance evaluations, as they are perceived to be complex, which results in less accurate business decision-making [4]. In addition, low competitiveness and the minimal use of digital technologies, including fintech payment gateways and digital marketing, have also contributed to declining revenues and turnover of MSMEs across various regions in Central Java [5].

This decline is reflected in the MSME Business Index for the third quarter of 2024, where the downturn in MSMEs' financial performance is attributed to a decrease in consumer purchasing power, declining sales turnover, and persistently low income levels [6]. MSME actors in Bogares Village, Pangkah District particularly in the Bogares peanut snack sector have experienced deteriorating financial performance, as indicated by a drop in sales and profits compared to the previous month [7].

Furthermore, a common phenomenon among MSME actors is that, in line with declining performance, MSMEs in Sragen Regency, Central Java, have reported a turnover drop of up to 30% due to weakened consumer purchasing power. Many of them admit they have yet to utilize digital platforms for promotion and transactions, resulting in limited product exposure and stagnant sales. A lack of understanding of digital financial systems, such as QRIS or e-wallets is also poses a significant barrier [8]. This indicates that financial literacy, Economic enfranchisement, embracement of fintech innovations, and deployment of cybernetic commerce strategies remain major challenges for MSME actors across various regions in Central Java. As a result, the financial performance of MSMEs tends to decline and remains vulnerable to economic fluctuations, particularly amidst the ongoing acceleration of digital transformation.

Based on previous studies investigating this phenomenon, several pivotal determinants shaping the fiscal outcomes of MSMEs have been delineated: financial acumen, economic enfranchisement, and fintech enabled transactional platforms, and digital marketing.

1.2 Problem Statement

The deterioration in the fiscal efficacy of MSMEs across various regions in Central Java indicates that many business actors still face serious challenges in financial management, access to formal financial services, and adaptation to digital technologies [5]; [8]; and [7]. On the other hand, the limited use of fintech payment gateways and the suboptimal implementation of digital marketing strategies have further weakened competitiveness and contributed to declining sales turnover [5]; [10]; and [9]. Therefore, this study focuses on identifying and Investigating the impact of financial literacy, economic enfranchisement, fintech transactional conduits, and cybernetic marketing on the fiscal performance of MSMEs in Central Java, both partially and simultaneously.

1.3 Objectives and Scope

This research was conducted among MSME actors in Central Java, focusing on four key variables: financial literacy, financial inclusion, fintech payment gateways, and digital marketing. A quantitative approach was used to analyze the relationships between these variables.

2. Literature Review

Financial Performance

This epitomizes an enterprise's monetary condition within a defined temporal span[12]. It serves as an analytical basis to evaluate the extent to which an individual or business entity performs its financial responsibilities, both qualitatively and quantitatively. The outcome of financial performance can be utilized as a reference for companies in optimizing their resources to develop business plans or alternative strategies [4].

Moreover, financial performance can be defined as the use of financial analytical tools to assess a company's financial status, providing insight into whether its condition is favorable or unfavorable. A company's ability to achieve its financial goals serves as an indicator of its overall success [13]; and [11]. According to [41], financial performance can be observed through the outcomes of business management mechanisms as reflected in the structure of the financial statements prepared. Financial performance refers to particular determinations that serve as metrics to evaluate the efficacy of an institution or corporation in accruing financial gain.

2.1 Related Work

Financial Literacy in Financial Performance

Financial literacy is conceptualized as the cognitive capacity and proficiency to grasp financial principles, facilitating the formulation of judicious and efficient fiscal decisions [15]. It empowers small enterprise proprietors to interpret, scrutinize, and evaluate monetary data, thereby enabling precise financial decision-making. Individuals endowed with sufficient financial acumen and insight exhibit a greater aptitude for making informed and effective fiscal choices, which underpin the sustainability and expansion of their ventures [16]. Empirical investigations by [17] and [18] corroborate this notion, evidencing a statistically significant and positive correlation between financial literacy and financial performance. These outcomes imply that an elevation in the financial literacy level among individuals or MSME managers corresponds with an enhancement in financial outcomes. A heightened financial literacy capacity fortifies MSMEs' competence in administering business finances with efficacy. This, in turn, promotes business growth by improving financial performance indicators such as revenue, sales volume, operating profit, and customer demand [4].

H₁. Financial literacy contributes positively to financial performance.

Financial Inclusion in Financial Performance

Financial inclusion denotes the accessibility and availability of a diverse spectrum of financial institutions, instruments, and services tailored to the unique requirements and fiscal capabilities of the populace, aimed at enhancing overall societal welfare [19]. Financial inclusion can help communities overcome various barriers, such as complex credit application requirements, limited access to financial institutions, and more [16]. Studies by [20] and [21] indicate that financial inclusion exerts a positive and statistically significant impact on financial performance. As financial inclusion increases, financial performance tends to improve accordingly. Business actors who utilize financial services provided by financial institutions, such as affordable account maintenance fees, it can enhance their income and financial performance. Knowledge and implementation of financial inclusion can reduce economic disparities across different segments of society and facilitate broader access to financial products and services, which in turn supports the performance of MSME actors [22].

H₂. Financial inclusion contributes positively to financial performance.

Fintech Payment Gateway in Financial Performance

Fintech payment gateway represents a digital payment system designed to authenticate and authorize transactional data based on the operational policies set by service providers [23]. Digital payment systems or fintech has become a key enabler of Enhanced operational efficacy for micro, small, and medium enterprises (MSMEs) is observed as a result of streamlined transactional processes. The mechanisms involved in the receipt and disbursement of payments critically influence the performance of MSME practitioners, subsequently affecting the longevity and viability of their enterprises [24]. Studies by [25]; [11]; and [26], elucidate that payment gateways exert a favorable impact on financial outcomes. Digital payment platforms such as OVO and Go-Pay hold particular significance for MSMEs as they simplify transactions and increase sales revenue [27]. Furthermore, applications, software, or payment aggregators that support and facilitate business operations can enhance sales, thereby improving the financial performance of MSMEs [22].

H₃. Fintech payment gateway contributes positively to financial performance.

Digital Marketing in Financial Performance

Digital marketing is the activity of promoting or marketing products or services through digital or online media, particularly the internet [28]. The rapid advancement of digital marketing has significantly improved the financial performance of MSMEs, making sales and marketing more accessible and practical across various media platforms [29]. The use of digital marketing enhances the resilience of MSMEs, which ultimately leads to improved overall performance. MSME actors must remain open and collaborate with other parties to maintain resilience and strengthen their capabilities, which in turn contributes to better performance [30]. Studies conducted by [14] and [31] have established that digital marketing exerts a constructive influence on the enhancement of financial performance.

H₄. Digital marketing contributes positively to financial performance.

Financial Literacy, Financial Inclusion, Fintech Payment Gateway, and Digital Marketing in Financial Performance

MSME actors must adopt and possess financial literacy, financial inclusion, fintech payment gateway utilization, and digital marketing strategies to enhance their financial performance.

H₅. Financial literacy, financial inclusion, fintech payment gateways, and digital marketing collectively exert a positive influence on financial performance.

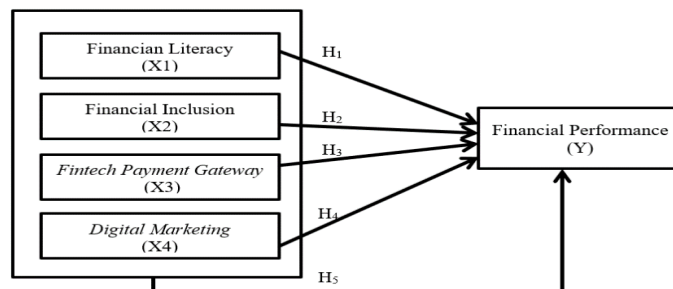


Figure 1. Conceptual Research Framework

3. Methodology

3.1 Data Collection

This research utilizes a quantitative methodology, with data gathered via structured questionnaires distributed to MSME actors in Central Java. Four key variables are utilized to explore the dynamics of financial performance: financial literacy, financial inclusion, fintech payment gateway, and digital marketing. Financial performance includes assets, sales turnover, and net profit [4]. Financial literacy encompasses fundamental personal finance, credit and liability administration, savings and investment strategies, as well as risk mitigation [18]. Financial inclusion includes access, usage, quality, and wellbeing [32]. Fintech payment gateway includes easy to operate, improves effectiveness, and facilitates work or efficient [4]. Digital marketing includes promotional media, interaction between customers and entrepreneurs, increased brand recognition, time efficiency, cost savings, and market access expansion [14]. The sampling methodology utilized in this research is purposive sampling, with the following criteria:

- MSMEs operating in various business sectors in Central Java,
- Have been conducting business activities for a minimum of two years,
- Employ a minimum of five workers.

Adhering to these specified criteria, the study encompassed a sample size of 100 respondents.

3.2 Analysis Techniques

This study employs the Structural Equation Modeling (SEM) approach using Warp PLS (Partial Least Squares). This analytical technique was specifically chosen to test the presence of a moderating variable within the research model, by ensuring the validity of each indicator representing the respective variables. The data analysis procedure initiates with the examination of the outer model, purposed to appraise the sufficiency of indicators through the assessment of their convergent validity, thereby guaranteeing that each indicator faithfully embodies its designated construct. Subsequently, the analytical process advances to the appraisal of the inner model., which emphasizes the measurement of the strength of path coefficients from exogenous variables to endogenous variables within the structural model framework.

3.3 Validation

Reliability is evaluated through factor loadings, Cronbach's alpha, and composite reliability metrics exceeding 0.70. Convergent validity is determined by factor loadings greater than 0.70, an Average Variance Extracted (AVE) surpassing 0.50, and statistically significant p-values. While discriminant validity is tested through the AVE (the values presented in parentheses) Should surpass the inter-correlations among latent constructs within the corresponding column (either above or below) [33].

Table 1. Construct Reliability and Validity

Variable	Indicator	Loading Factor	Cronbach's Alpha	Composite Reliability	Average Variance Extrated (AVE)
<i>Financial Performance</i>	Y1.1	0.864	0.962	0.969	0.917
	Y1.2	0.937			
	Y1.3	0.876			

	Y1.4	0.942			
	Y1.5	0.926			
	Y1.6	0.952			
	X1.1	0.871			
	X1.2	0.918			
	X1.3	0.951			
	X1.4	0.937			
<i>Financial Literacy</i>	X1.5	0.932	0.968	0.973	0.885
	X1.6	0.949			
	X1.7	0.936			
	X1.8	0.813			
	X1.9	0.714			
	X1.10	0.798			
	X2.1	0.822			
	X2.2	0.829			
<i>Financial Inclusion</i>	X2.3	0.845	0.908	0.929	0.827
	X2.4	0.862			
	X2.5	0.787			
	X2.6	0.817			
	X3.1	0.953			
<i>Fintech Payment Gateway</i>	X3.2	0.941	0.945	0.960	0.926
	X3.3	0.922			
	X3.4	0.889			
	X4.1	0.907			
	X4.2	0.897			
	X4.3	0.859			
<i>Digital Marketing</i>	X4.4	0.831	0.936	0.947	0.832
	X4.5	0.844			
	X4.6	0.798			
	X4.7	0.781			
	X4.8	0.745			

Table 2. Discriminant Validity

	Financial Performance	Financial Literacy	Financial Inclusion	Fintech Payment Gateway	Digital Marketing
Financial Performance	(0.917)	0.696	0.167	0.616	-0.06
Financial Literacy	0.696	(0.885)	0.11	0.368	-0.069
Financial Inclusion	0.167	0.11	(0.827)	0.282	0.392
Fintech Payment Gateway	0.616	0.368	0.282	(0.926)	0.206
Digital Marketing	-0.06	-0.069	0.392	0.206	(0.832)

All constructs in Tables 1 and 2 meet the criteria for reliability and validity, thereby confirming that the instrument is suitable for further analysis.

4. Results and Discussion

4.1 Inner Model

Model Fit (Good of Fit)

Model fit is essential for determine whether a model is compatible or fits the existing data, certain goodness-of-fit criteria must be met. Specifically, the values of APC (Average Path Coefficient) and ARS (Average R-squared) must be less than 0.05, and the AVIF (Average Variance Inflation Factor) value must be less than 5 [33].

Table 3. Model Fit

	Index	P-Value
Average Path Coefficient (APC)	0.258	P=0.002
Average R-squared (ARS)	0.697	P<0.001
Average Adjusted R-Squared (AARS)	0.685	P<0.001
Average Block VIF (AVIF)	1.428	
Average Full Collinearity VIF (AFVIF)	1.832	
Tenenhaus GoF (GoF)	0.734	

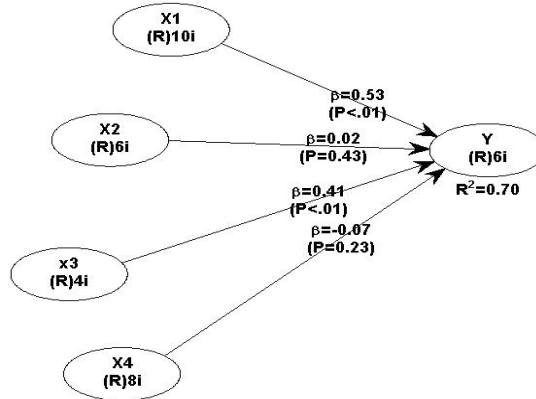
Table 3 illustrates that the Average Path Coefficient (APC) registers at 0.258 accompanied by a p-value of 0.002, signifying that the mean path coefficient within the structural model is statistically significant ($p < 0.05$). The Average R-squared (ARS) value of 0.697 with $p < 0.001$ denotes the mean explained variance of the endogenous constructs, implying that the model possesses an exceptionally robust predictive power. Furthermore, the Adjusted Average R-squared (AARS) value of 0.685 with $p < 0.001$ indicates that the adjusted measure accounts for the quantity of predictors incorporated within the model. This result confirms that the model does not suffer from overfitting and remains stable despite its structural complexity.

The AVIF value of 1.428 and the AFVIF value of 1.832 both fall below the critical threshold of 3.3, indicating the nonexistence of substantial multicollinearity among the constructs. This finding reinforces the structural validity of the model. Furthermore, the Goodness of Fit (GoF) index stands at 0.734, surpassing the criterion for a "large" effect size (≥ 0.36), thereby signifying that the model exhibits exceptionally robust overall predictive accuracy and fit fidelity.

Path Coefficients and Significance

Path analysis is employed to quantify the magnitude of the estimated path coefficient values. Concurrently, significance testing evaluates the statistical relevance of these path coefficients. A path coefficient is deemed valid when the β value is positive, signifying a favorable effect and if the β value is negative, indicating a negative effect. Furthermore, the significance requirement is met when the p-value is less than 0.05 [33].

Figure 2. Diagram Path Analysis Model



Tabel 4. Path Coefficients and Significance

Relationships Among Variables		path coefficient (β)	P- Values	Result
H1	X1 $\rightarrow$ Y	0.532	<0.001	Supporte d
H2	X2 $\rightarrow$ Y	0.018	0.43	Rejected
H3	X3 $\rightarrow$ Y	0.409	<0.001	Supporte d
H4	X4 $\rightarrow$ Y	-0.074	0.225	Rejected

Hypotheses H1 and H3 were supported, confirming that financial literacy and fintech payment gateway have a positive and significant influence on financial performance. On the other hand, hypotheses H2 and H4 were not supported, suggesting that financial inclusion and digital marketing do not exert a direct and statistically significant impact on financial performance

Coefficient of Determination (R-Squared)

The coefficient of determination, R-squared, is utilized to assess the degree of influence that independent variables exert on the dependent variable. The R-squared (R^2) metric is stratified into three tiers: 0.75 denoting a strong effect, 0.50 indicating a moderate effect, and 0.25 representing a weak effect [33].

Table 5. Coefficient of Determination (R-Squared)

<i>Financial Performance</i>	
R-Squared	0.697
Adjust R	0.685

Table 4 delineates that the R-squared (R^2) coefficient for construct Y attains a value of 0.697, signifying that 69.7% of the variance in construct Y is explicable by the exogenous variables

encompassed within the model. Per Chin (1998), an R^2 magnitude of 0.67 or above is classified as “substantial,” thereby indicating that the model demonstrates robust predictive capability for construct Y. The Adjusted R-squared (Adjusted R^2) figure of 0.685 represents the R^2 value recalibrated to account for the quantity of predictor constructs incorporated in the model.

Effect Size

Effect size magnitudes are classified into three strata: 0.35 denoting a large effect, 0.15 indicating a medium effect, and 0.02 representing a weak effect. [33].

Table 6. Effect Size

	Financial Literacy	Financial Inclusion	Fintech Payment Gateway	Digital Marketing
Financial Performance	0.388	0.009	0.272	0.029

Table 4 shows that the variable X1 has the largest effect size on Y, with a value of 0.388. Variable X2 exhibits a very small effect size of 0.009, which falls below the minimum threshold of 0.02. This suggests that the practical impact of X2 on Y is negligible, even though it may still be statistically significant. Variable X3 has an effect size of 0.272, which is categorized as a medium effect and indicates a substantial contribution to Y. Variable X4 shows an effect size of 0.029, placing it in the category of small effects.

4.2 Interpretation of Results

Financial Literacy on Financial Performance

The findings derived from the path coefficient and significance testing reveal that financial literacy exerts a positive and statistically robust effect on financial performance, evidenced by a path coefficient (β) of 0.532 accompanied by a p-value less than 0.001. The magnitude of the path coefficient at 0.532 signifies a constructive impact, whereas the p-value below 0.001 substantiates the statistical validity, thereby endorsing the acceptance of the hypothesized relationship.

This outcome can be ascribed to the profound and precise financial acumen possessed by MSME practitioners in administering and orchestrating their business finances, which facilitates dependable fiscal management and underpins prudent financial decision-making and strategic planning aimed at sustaining and expanding their enterprises. The empirical evidence intimates that elevated levels of financial literacy significantly foster enhanced financial performance. These conclusions align with antecedent research conducted by [34]; [4]; and [20], who similarly identified a positive and significant linkage between financial literacy and financial performance.

Financial Inclusion on Financial Performance

Derived from the outcomes of the path coefficient and significance assessments, financial inclusion exhibits no statistically significant impact on financial performance. This is substantiated by a path coefficient (β) of 0.018 alongside a p-value exceeding the 0.05 threshold. The diminutive path coefficient value of 0.018 denotes a negligible effect, whereas the p-value surpassing 0.05 confirms the absence of statistical significance, thereby leading to the rejection of the proposed hypothesis.

The lack of a significant impact of financial inclusion on financial performance may be attributed to the inefficient deployment of available financial services. In supporting key aspects of business performance, MSME actors have not fully leveraged financial services to enhance cost efficiency, improve cash flow, manage risks, or strategically expand their businesses. In other words, high access to and positive perceptions of financial services have not yet translated into effective implementation in comprehensive business financial management. This explains why financial inclusion has not contributed meaningfully to improving the financial performance of MSMEs. These findings are consistent with previous studies by [35]; [36]; and [37], which also concluded that financial inclusion does not significantly influence financial performance.

Fintech Payment Gateway on Financial Performance

The analysis of path coefficients alongside significance testing reveals that fintech payment gateways have a constructive and statistically significant influence on financial performance. This is demonstrated by a path coefficient (β) of 0.409 and a p-value less than 0.001. The path coefficient value of 0.409 signifies a positive association, while the p-value below 0.001 affirms the statistical validity, thereby supporting the acceptance of the hypothesis.

This result can be attributed to the fact that the majority of MSME actors have adopted various forms of digital payment technologies, both for internal operations and in serving customers, which enhances transaction efficiency and plays a crucial role in improving financial performance. This finding suggests that greater utilization of digital payment technologies leads to improved financial outcomes. These outcomes corroborate antecedent inquiries undertaken by [4]; [29]; and [26], which likewise discerned that fintech payment conduits impart a beneficial and statistically substantive influence upon fiscal efficacy.

Digital Marketing on Financial Performance

The results of the path coefficient analysis and significance testing indicate that digital marketing exerts a negative yet statistically insignificant influence on financial performance. This is evidenced by the path coefficient (β) value of -0.074 and a p-value greater than 0.05. The negative path coefficient indicates an adverse effect, while the p-value exceeding 0.05 confirms that the result is not statistically significant, meaning the hypothesis is rejected.

This finding reflects the suboptimal use of digital marketing by MSME actors. Descriptive analysis data supports this conclusion. The indicator “Digital promotion helps improve brand awareness” has a mean score of 4.11, and “Digital promotion encourages customer–entrepreneur interaction” has a mean of 4.21. These results suggest that the benefits of digital marketing are recognized, yet have not been consistently applied in business strategies. Thus, although MSME actors hold a positive perception of digital marketing, its implementation remains limited and unstructured. The limited strategic utilization of digital marketing and the lack of technical capability are key factors contributing to its ineffectiveness in enhancing financial performance. These results align with the findings reported in previous studies conducted by [38]; [39]; and [40], which also found The effect of digital marketing on economic performance is deemed statistically negligible.

Financial Literacy, Financial Inclusion, Fintech Payment Gateway, and Digital Marketing on Financial Performance

Based on the results of the coefficient of determination (R-squared) test, the R-squared value is 69.7%, this suggests that financial literacy, financial inclusion, fintech payment gateways, and digital marketing collectively exert a positive impact on financial performance. This is further supported by the contribution of the R-squared effect size for each independent variable, namely:

X1 (financial literacy) with an effect size of 0.388, X2 (financial inclusion) with 0.009, X3 (fintech payment gateway) with 0.272, and X4 (digital marketing) with 0.029.

5. Discussion

5.1 Conclusion

Drawing upon the comprehensive analysis and discourse presented in this investigation, the following inferences are established:

1. The outcomes of the path coefficient estimations and significance evaluations demonstrate Financial literacy confers a propitious and statistically meaningful effect on fiscal outcomes.
2. The evaluation of path coefficients in conjunction with their inferential robustness reveals that financial inclusion fails to demonstrate a significant or statistically impactful influence on economic performance.
3. Empirical findings corroborate that fintech payment portals exert a salutary and statistically resilient effect upon financial efficacy.
4. Subsequent analyses illuminate that digital marketing imposes an adverse and statistically negligible influence on financial results.
5. The determination coefficient appraisal discloses that the aggregate influence of financial literacy, financial inclusion, fintech payment gateways, and digital marketing collectively produces a significant and positive contribution to financial performance.

5.2 Limitations

This study encountered several limitations, as outlined below:

1. The model produced an R-squared value of 70%, indicating that the remaining 30% of the variability in financial performance is attributed to extraneous variables or determinants not encompassed within the scope of this research.
2. Data acquisition was executed through the utilization of Google Forms based questionnaire. This method may have led to discrepancies between the respondents' answers and the actual conditions in the field, potentially affecting the accuracy of the findings.

5.3 Recommendation

Grounded in the extant conclusions and circumscribed by the outlined limitations, the following prescriptions are proposed:

1. Future researchers are encouraged to include additional independent variables that may have potential influence on financial performance, in order to enhance the explanatory power of the model.
2. It is recommended that subsequent studies incorporate direct interviews with respondents to capture more accurate and contextual insights from real field conditions, rather than relying solely on questionnaire-based data.
3. This investigation is anticipated to function as a foundational reference, source of insight, and comparative framework for subsequent studies exploring analogous themes.

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