

The Effect of Regulation, Financial Inclusion, Financial Technology on Financial Behavior, Financial Risk, and Financial Resilience Using Good Financial Governance as a Moderator in Micro, Small, and Medium Enterprises (MSMEs) in Gedeg District, Mojokerto Regency

Amelia Kusniawati^{1*}, Tri Ratnawati², Ida Ayu Sri Brahmayanti³

¹⁻³ Universitas 17 August 1945 Surabaya, Indonesia

email: 1262400003@surel.untag-sby.ac.id¹

Article Info :

Received:

25-9-2025

Revised:

27-10-2025

Accepted:

29-11-2025

Abstract

MSMEs in Gedeg District are facing a decline in the number of MSMEs and financial vulnerability, which requires analysis of external factors, namely Regulation, Financial Inclusion, and Financial Technology, as well as internal factors, namely Financial Behavior and Financial Risk, which shape Financial Resilience. This study aims to examine the influence of these three external factors on MSMEs' financial behavior, risk, and resilience, and analyze the mediating role of financial behavior and risk, as well as the moderation of Good Financial Governance (GFG). Using a quantitative approach with primary data obtained from 310 MSMEs through a purposive sampling survey and analyzed using PLS-SEM. The results show that regulation, inclusion, and fintech have a significant effect on financial behavior and risk, which then mediate their influence on financial resilience. However, the direct effect of Regulation and Financial Inclusion on resilience is statistically insignificant. Good Financial Governance (GFG) as a moderator shows insignificant results, implying that governance practices alone may not strengthen resilience without risk management mechanisms and financial behavior. These findings underscore the importance of synergy between financial access, effective regulation, financial literacy, and transparent governance in enhancing the resilience of MSMEs.

Keywords: Regulation, Financial Inclusion, Financial Technology, Financial Behavior, Financial Risk.



©2022 Authors.. This work is licensed under a Creative Commons Attribution-Non Commercial 4.0 International License.
(<https://creativecommons.org/licenses/by-nc/4.0/>)

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a crucial role as the backbone of the Indonesian economy, as evidenced by their dominant contribution to the Gross Domestic Product (GDP) and employment. However, despite their vital role, MSMEs have high structural vulnerability, especially in facing economic shocks, regulatory changes, and market challenges. The survival of MSMEs is highly dependent on their level of Financial Resilience, which is the ability of business units to survive, recover, and adapt financially after a shock.

The National Survey of Financial Literacy and Inclusion (SNLIK) conducted by the OJK with the aim of measuring the level of financial literacy and inclusion of the Indonesian people presents conclusions from the perspective of village classification, showing that people living in urban areas have a relatively higher financial inclusion index than those living in rural areas (OJK, 2023).

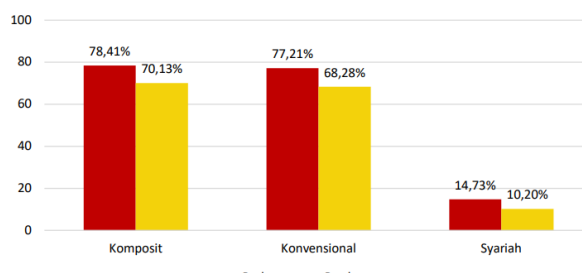


Figure 1 Financial Inclusion Survey Result

Data Source: <https://ojk.go.id>

Micro, Small, and Medium Enterprises (MSMEs) in Mojokerto Regency have a strategic contribution to regional economic growth, job creation, and community welfare improvement, as reflected in the performance achievements of the Cooperative and Micro Business Office in 2024, which reached an average of 108.09 percent, with an increase in micro business quality of 144.20 percent. Although the performance of local government institutions shows effectiveness, marked by a SAKIP value of 100.9 percent, civil servant professionalism of 103.41 percent, and budget realization of 99.67 percent. (Cooperative Agency, 2024).

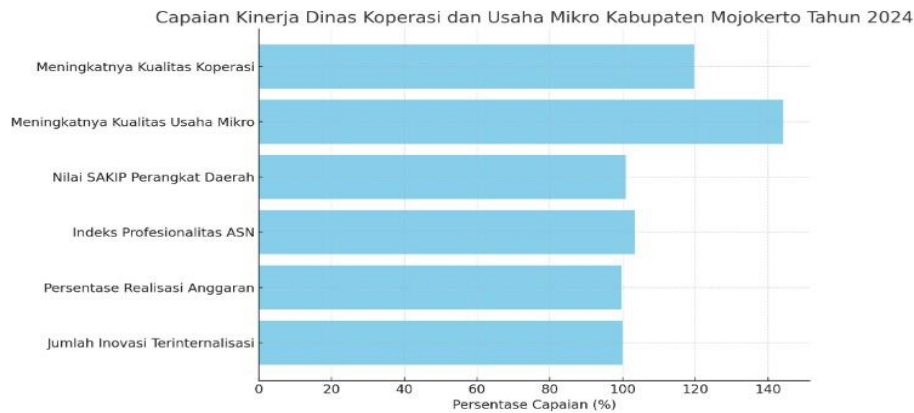


Figure 2. Data Analysis of the Performance Achievements of the Mojokerto Regency Cooperative and Micro Business Agency.

Data Source: <https://diskopum.mojokertokab.go.id>

The growth of MSMEs in Mojokerto Regency cannot be separated from the role of the government through the Cooperative and Micro Business Agency's program in assisting MSME actors.



Figure 3. Data Processing of the Graph of the Proportion of Programs by the Cooperative and Micro, Small, and Medium Enterprises Agency.

Data Source: <https://diskopum.mojokertokab.go.id>

Based on the graph showing the focus of the Mojokerto Regency Cooperative and Micro Business Agency's 2025 program, it can be concluded that the main priority of the Mojokerto Regency Cooperative and Micro Business Agency's 2025 program is directed at strengthening micro businesses by 30% and improving the quality of cooperatives by 25%, which reflects the local government's commitment to strengthening the foundations of the people's economy. Access to financing and partnerships (10%) are supporting focuses that demonstrate a balanced development strategy between institutional strengthening, capacity building, and adaptation to technology-based economic developments. (Cooperative Agency, 2024):

Table 1. Number of MSMEs in Mojokerto Regency from 2018 to 2021

UMKM Kabupaten Mojokerto Tahun 2018,2019,2020,2021							
Nomor	Nama Kecamatan	Kluster					Jumlah Usaha Mikro 4 Tahun
		Bahan Olahan pertanian	Bahan Olahan Non Pertanian	Jasa	Perdagangan	Kerajinan	
1	BANGSAL	391	249	366	1,419	118	2,543
2	DAWARBLANDONG	217	311	315	1,334	65	2,242
3	DLANGGU	368	192	298	1,375	94	2,327
4	GEDEG	325	124	310	1,150	51	1,960
5	GONDANG	463	79	227	1,299	24	2,092
6	JATIREJO	314	85	310	1,071	52	1,832
7	JETIS	413	145	483	2,667	208	3,916
8	KEMLAGI	580	161	218	1,168	90	2,217
9	KUTOREJO	527	158	234	1,358	119	2,396
10	MOJOANYAR	392	126	190	911	51	1,670
11	MOJOSARI	585	357	432	1,621	125	3,120
12	NGORO	420	226	327	1,325	47	2,345
13	PACET	413	170	350	1,484	64	2,481
14	PUNGGING	596	249	409	1,540	61	2,855
15	PURI	245	149	270	1,302	166	2,132
16	SOOKO	333	96	226	989	203	1,847
17	TRAWAS	355	69	159	814	31	1,428
18	TROWULAN	251	120	266	1,100	151	1,888
Total		7,188	3,066	5,390	23,927	1,720	41,291

Source: Data from the Mojokerto Regency SME Agency

Table 2. Number of MSMEs in Mojokerto Regency from 2022 to 2024

UMKM Kabupaten Mojokerto Tahun 2022,2023,2020,2024					
No	Kecamatan	Tempat Usaha			
		Bangunan Khusus	Bangunan Campuran	Kaki Lima	Jumlah
1	JATIREJO	352	699	12	1,063
2	GONDANG	53	452	4	509
3	PACET	489	1,191	11	1,691
4	TRAWAS	538	630	4	1,172
5	NGORO	493	1,030	16	1,539
6	PUNGGING	2,588	939	16	3,543
7	KUTOREJO	725	1,292	7	2,024
8	MOJOSARI	210	396	3	609
9	BANGSAL	466	751	8	1,225
10	MOJOANYAR	595	1,409	9	2,013
11	DLANGGU	834	1,274	67	2,175
12	PURI	1,042	2,731	11	3,784
13	TROWULAN	1,103	3,224	81	4,408
14	SOOKO	658	1,344	83	2,085
15	GEDEG	314	692	24	1,030
16	KEMLAGI	483	308	7	798
17	JETIS	641	2,421	4	3,066
18	DAWARBLANDONG	418	1,578	4	2,000
Jumlah		12,002	22,361	371	34,734

Source: Data from the Mojokerto Regency SME Agency

Based on the development of data on the number of MSMEs in Mojokerto Regency, there was a significant decrease from 2018-2021, which amounted to 41,291 to 34,734 in 2022-2024. This vulnerability is clearly visible at the local level, such as in Gedeg District, Mojokerto Regency, which experienced a 47.45% decline in the number of MSME players. Data from the Cooperative and MSME Office shows that in the last five years, this region has experienced a significant downward trend in business sustainability ratios and a high failure rate of new MSMEs to survive the critical first year. This decline is not only caused by internal factors such as capital and management, but also by complex external factors. This raises the urgency to deeply understand the determining factors that can strengthen their financial resilience.

The research gap arises from the inconsistency of previous empirical findings regarding the role of regulation, financial inclusion, and financial technology in shaping financial behavior, financial risk, and financial resilience. In terms of regulation, the studies (Zamzami et al., 2024) and (Challoumis, 2024) show that financial regulation can improve compliance and economic stability, while (Siringoringo, 2024) emphasizes the importance of regulation in supporting risk management. However, several studies, such as (Wahyuandari et al., 2022) , find that some aspects of regulation and Good Financial Governance are not significant. In terms of financial inclusion, research by (Alfina Yuniar Prastika and Ana Kadarningsih, 2025) and (Hutauruk et al., 2024) showed a significant positive effect on financial behavior, but these findings differ from (Nasution & Balatif, 2025) which states that literacy and fintech are not significant, and contradicts (Masdo & Panday, 2025) which found that financial inclusion is still

low and has not been effective in increasing resilience. Meanwhile, research results related to financial technology (fintech) show strong inconsistencies, where (Maharani, 2025) found a significant positive effect, but (Oktadiansyah & Sari, 2025) and (Putri et al., 2025) actually showed a negative or insignificant effect, and even the mediation of fintech was declared weak. Additional contradictions are illustrated in the study (Kurniadi & Ihsan, 2025) , which states that fintech has no significant effect on financial performance or resilience, in contrast to (Hastuty Hasyim, 2025) , which states that AI and digitalization technologies can strengthen risk, compliance, and financial inclusion. This inconsistency across studies indicates an unanswered empirical and theoretical gap, particularly in the context of MSMEs as the most vulnerable business units, thus requiring further research to understand how regulation, financial inclusion, and financial technology work simultaneously in influencing the behavior, risk, and financial resilience of MSMEs.

The challenges of improving the financial resilience of MSMEs in the digital era are influenced by three main external factors, namely regulation as the basis for policy and legal certainty, financial inclusion that provides access to formal financial services, and financial technology that drives transaction efficiency and expands access to capital. These three factors are expected to transform the internal conditions of MSMEs, but their influence is not direct. Their impact on business resilience is mediated by the financial behavior of MSME actors, including discipline in recording, planning, and managing funds, as well as financial risks such as liquidity risk and potential default. Thus, the success of regulation, financial inclusion, and technology adoption is highly dependent on the ability of MSMEs to effectively manage financial behavior and mitigate emerging risks.

The main scientific gap lies in the lack of integrated research examining the relationship between regulation, financial inclusion, and financial technology, as well as the moderating role of *Good Financial Governance* in shaping the behavior, risks, and financial resilience of MSMEs. as most previous studies have only focused on micro or macro variables separately and have not comprehensively integrated GFG testing as a moderating variable in the context of rural MSMEs (Alfina Yuniar Prastika and Ana Kadarningsih, 2025).

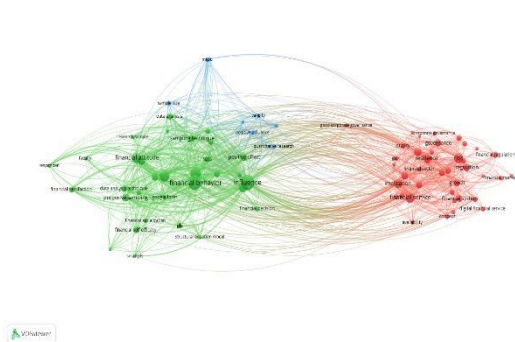


Figure 4. Network Visualization

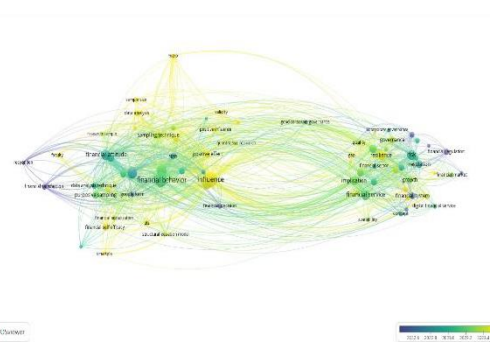


Figure 5. Overlay Visualization

Source: Data Processing VOSviewer, 2025

Based on the results of bibliometric analysis through co-occurrence, overlay, and density visualization, there is a clear research gap between micro studies which focus on financial attitude, financial behavior, and self-efficacy and macro studies that focus on regulation, governance, risk, and financial systems. The shift in research from behavioral variables (2022–2023) to policy and resilience variables (2023–2025) shows that the relationship between regulation, financial inclusion, and financial technology on financial behavior and resilience has not been consistently explained. The gap is even more apparent when previous studies show conflicting results, such as differences in the significance of fintech's influence on financial behavior between the studies (Nasution & Balatif, 2025) , (Maharani, 2025) , and (Putri et al., 2025) , as well as variations in findings regarding the effectiveness of regulations in improving compliance and financial resilience as shown by (Zamzami et al., 2022) , (Challoumis, 2024) , and (Wahyuandari et al., 2022) . Furthermore, there has been little research that holistically integrates regulation, financial inclusion, financial technology, financial behavior, financial risk, and *Good Financial Governance* into a comprehensive model, especially in the context of MSMEs

in rural areas such as Gedeg District. This gap highlights the need for in-depth research that can explain how the interaction of these external and internal factors simultaneously affects the financial resilience of MSMEs in a dynamic financial ecosystem.

Most previous studies have only examined the direct influence of Regulation, Financial Inclusion, and Financial Technology on Financial Resilience, thereby ignoring the layered mediation mechanisms through Financial Behavior and Financial Risk, which theoretically form the transformative flow of MSMEs. The main gap is evident in the lack of studies that comprehensively examine the double mediation chain (Financial Behavior → Financial Risk). Furthermore, previous studies generally assume that good financial practices automatically improve business resilience, even though at the MSME level, aspects of Good Financial Governance (GFG) such as transparency, accountability, and participation are often not optimally implemented. This is where this study's academic contribution lies: it presents novelty by testing GFG as a moderating variable that has the potential to strengthen the influence of sound financial behavior while reducing the negative impact of financial risk on business resilience. The placement of GFG as a moderator in the context of Gedeg MSMEs is a new finding that fills a gap in the literature and connects microfinance management theory with real-world practice.

Based on the identified research gap, this study is highly urgent because it offers a more comprehensive and applicable analytical framework for policymakers and MSME actors, not only mapping the external factors that affect business resilience but also emphasizing the reinforcing role of Good Financial Governance (GFG). This study aims to analyze the influence of Regulation, Financial Inclusion, and Financial Technology on the Financial Behavior and Financial Risk of MSMEs; examine the mediating role of these two internal variables in shaping Financial Resilience; and prove the moderating role of GFG in strengthening the influence of Financial Behavior and minimizing the impact of Financial Risk on the Financial Resilience of MSMEs.

RESEARCH METHODS

This study uses an explanatory quantitative design through a survey to examine the causal relationship between Regulation, Financial Inclusion, and Financial Technology on the Financial Resilience of MSMEs, with Financial Behavior and Financial Risk as mediating variables and Good Financial Governance (GFG) as a moderator. The research location was in Gedeg Subdistrict, Mojokerto Regency, East Java, with a population of all active MSMEs, while the sample of 310 respondents was determined through purposive sampling based on the criteria of a minimum of two years of operation, having financial records, and being willing to provide data. Primary data were collected using a structured questionnaire based on a Likert scale that measured seven latent variables and were tested in advance through validity and reliability tests. Data analysis was conducted using PLS-SEM with stages of measurement model evaluation, structural model evaluation, and mediation and moderation testing to ensure construct validity, predictive power, and the significance of the relationship between variables. This method was chosen because it can accommodate complex models with multiple variables and nonlinear relationships, so that the research results can be replicated and provide a more comprehensive understanding of the determinants of MSME Financial Resilience:

Table 3. Research Instruments

Variable	Variable Type	Indicators
Regulation (X1)	Independent Variable	1. Impact 2. Cost-effectiveness 3. Net Benefits
Financial Inclusion (X2)		1. Access 2. Usage 3. Quality
Financial Technology (X3)		1. Types of Technology-Based Financial Services 2. Adoption and Usage Levels 3. Technological Innovations Used

Financial Behavior (Z1)	Mediation Variables	1. Financial Controlling 2. Bill Paying 3. Financial Planning 4. Necessities Fulfilling 5. Saving
Financial Risk (Z2)		1. Liquidity Risk 2. Solvency/Leverage Risk 3. Profitability Risk 4. Market Risk
Financial Resilience (Y)	Dependent Variable	1. Adaptable Abilities (Agency) 2. Diverse Opportunities (Structure)
Good Financial Governance (M)	Moderating Variables	

Data Source: Processed by the researcher, 2025

The main instrument of this study was a five-point Likert scale questionnaire covering DDS = Strongly Disagree (1), DS = Disagree (2), TP = No Opinion (3), S = Agree (4), and SS = Strongly Agree (5), which is compiled based on the indicators of each research variable, selected because it is able to collect primary data efficiently from a large number of respondents and allows for the measurement of attitudes, perceptions, and experiences in a structured and quantifiable manner in accordance with the definitions of the concepts described earlier.

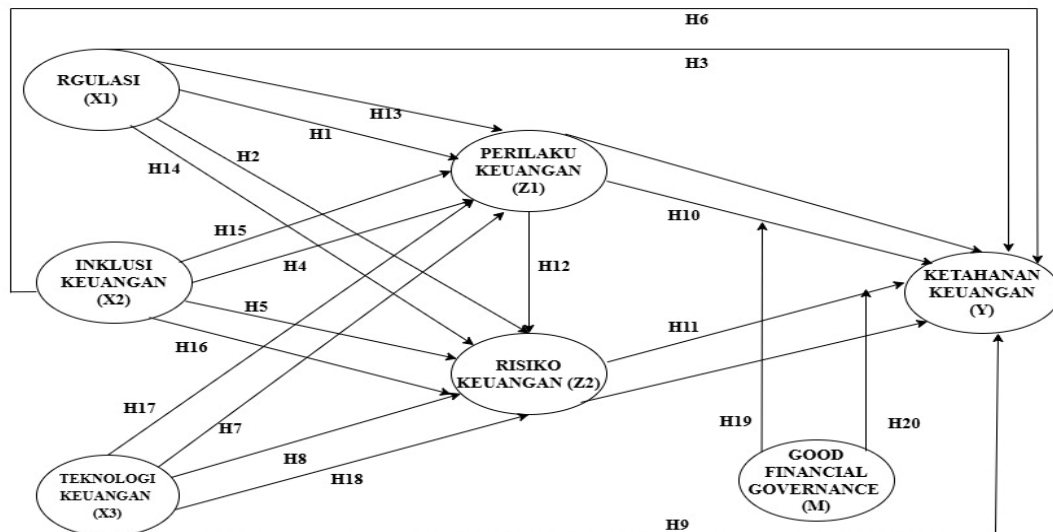


Figure 6. Conceptual Framework

Data Source: Processed by Researchers, 2025

RESULT AND DISCUSSION

Outer Loading (Convergent Validity)

Convergent validity is evaluated to determine whether each indicator accurately reflects its associated construct within the measurement model. This assessment relies on the outer loading values, where indicators with loading scores above 0.70 are considered valid and contribute meaningfully to the construct. Table 2 provides the complete outer loading results for all variables included in this study:

Table 4. Outer Loading Results (Convergent Validity)

Variable	Indicator	Outer Loading	Remarks
Regulation (X1)	X1.1	0.849	Valid
	X1.2	0.799	Valid
	X1.3	0.836	Valid
	X1.4	0.856	Valid

	X1.5	0.759	Valid
	X1.6	0.811	Valid
Financial Inclusion (X2)	X2.1–X2.6	0.819–0.844	Valid
Financial Technology (X3)	X3.1–X3.6	0.819–0.853	Valid
Financial Behavior (Z1)	Z1.1–Z1.10	0.804–0.860	Valid
Financial Risk (Z2)	Z2.1–Z2.8	0.777–0.863	Valid
Financial Resilience (Y1)	Y1.1–Y1.4	0.848–0.864	Valid
Good Financial Governance (M)	M1.1–M1.12	0.757–0.851	Valid
Moderation M × Z1	—	1.000	Valid
Moderation M × Z2	—	1.000	Valid

Data Source: Processed by Researchers, 2025

The results in Table 2 show that all indicators exceed the minimum loading threshold, confirming strong convergent validity across each construct. This indicates that the measurement items are reliable and appropriately capture the conceptual definitions of the variables. Therefore, all indicators are deemed suitable for retention and can be used for further structural model analysis.

AVE Results (Convergent Validity)

The Average Variance Extracted (AVE) is used to assess the degree to which a construct explains the variance of its indicators. A construct is considered to have acceptable convergent validity when its AVE value exceeds the recommended threshold of 0.50.

Table 5. AVE Results (Convergent Validity)

Variable	AVE
Good Financial Governance (M)	0.668
Financial Inclusion (X2)	0.691
Financial Resilience (Y1)	0.732
Financial Behavior (Z1)	0.692
Regulation (X1)	0.670
Financial Risk (Z2)	0.683
Financial Technology (X3)	0.700

Data Source: Processed by Researchers, 2025

The AVE values presented in Table 3 indicate that each construct meets the minimum requirement for convergent validity. These results confirm that the indicators collectively explain a substantial portion of the variance within their respective constructs. Consequently, all constructs demonstrate adequate convergent validity and can be incorporated confidently into the structural model.

Fornell–Larcker Criterion (Discriminant Validity)

Discriminant validity is examined to ensure that each construct is distinct from other constructs within the model. The Fornell–Larcker criterion assesses this by comparing the square root of the AVE with the correlations among constructs. Table 4 displays the discriminant validity results based on the Fornell–Larcker approach.

Table 6. Fornell–Larcker Criterion (Discriminant Validity)

Variable	M	X2	Y1	Z1	X1	Z2	X3
M	0.827						
X2	0.660	0.831					

Y1	0.739	0.627	0.856				
Z1	0.817	0.715	0.707	0.832			
X1	0.656	0.713	0.565	0.656	0.819		
Z2	0.773	0.779	0.723	0.703	0.692	0.826	
X3	0.675	0.738	0.579	0.709	0.657	0.764	0.837

Data Source: Processed by Researchers, 2025

The results in Table 4 show that the square root of the AVE for each construct is greater than its correlations with other variables, confirming discriminant validity. This demonstrates that each construct is empirically unique and captures dimensions not represented by other constructs in the model. Thus, the discriminant validity of the measurement model is fully supported.

Construct Reliability (Cronbach's Alpha and Composite Reliability)

Reliability testing is conducted to determine the internal consistency of the indicators within each construct. Cronbach's Alpha and Composite Reliability values above 0.70 indicate that the construct demonstrates strong reliability. Table 5 presents the reliability results for all constructs used in this study.

Table 7. Construct Reliability (Cronbach's Alpha and Composite Reliability)

Variable	Cronbach's Alpha	rho_A	Composite Reliability
Good Financial Governance (M)	0.955	0.956	0.960
Financial Inclusion (X2)	0.911	0.911	0.931
Financial Resilience (Y1)	0.878	0.878	0.916
Financial Behavior (Z1)	0.951	0.951	0.957
Regulation (X1)	0.902	0.907	0.924
Financial Risk (Z2)	0.933	0.935	0.945
Financial Technology (X3)	0.914	0.915	0.933

Data Source: Processed by Researchers, 2025

The reliability results in Table 5 show that all constructs exceed the required thresholds for both Cronbach's Alpha and Composite Reliability. These findings confirm that each construct is measured consistently and reliably by its indicators. Accordingly, all constructs exhibit satisfactory reliability and are suitable for inclusion in further analysis.

R-Square (Model Fit)

The R-square values are used to evaluate the explanatory power of the independent variables on each dependent construct. Higher R-square values indicate stronger predictive accuracy of the structural model. Table 6 provides the R-square and adjusted R-square values for the dependent variables included in this research.

Table 8. R-Square (Model Fit)

Dependent Variable	R ²	Adjusted R ²
Financial Resilience (Y1)	0.627	0.617
Financial Behavior (Z1)	0.603	0.599
Financial Risk (Z2)	0.707	0.704

Data Source: Processed by Researchers, 2025

The results in Table 6 demonstrate that the model achieves moderate to strong explanatory power across all dependent constructs. These values indicate that the independent variables collectively

contribute significantly to predicting each outcome variable. Thus, the structural model shows an acceptable level of fit and can be interpreted with confidence.

Hypothesis Testing Results (Direct Effect)

Hypothesis testing is performed to evaluate the significance of the relationships between constructs within the structural model. The significance of each path is assessed using the original sample values, t-statistics, and p-values. Table 7 presents the full results of the direct effect hypothesis testing for this study.

Table 9. Hypothesis Testing Results (Direct Effect)

Relationship	Original Sample (O)	T-statistic	P-value	Remarks
X1 → Z1	0.206	3.421	0.001	Significant
X1 → Z2	0.152	2.428	0.015	Significant
X1 → Y1	-0.029	0.477	0.634	Not Significant
X2 → Z1	0.319	4.712	0.000	Significant
X2 → Z2	0.341	5.689	0.000	Significant
X2 → Y1	0.050	0.661	0.509	Not Significant
X3 → Z1	0.338	4.849	0.000	Significant
X3 → Z2	0.317	5.882	0.000	Significant
X3 → Y1	-0.132	2.145	0.032	Significant
Z1 → Y1	0.260	3.603	0.000	Significant
Z2 → Y1	0.371	4.885	0.000	Significant
Z1 → Z2	0.135	2.299	0.022	Significant
X1 → Z1 → Y1	0.054	2.488	0.013	Significant

Data Source: Processed by Researchers, 2025

The results in Table 7 indicate that most of the hypothesized relationships are statistically significant, demonstrating meaningful associations among the constructs. These findings reinforce the theoretical foundations of the model and highlight the key variables that influence financial behavior, risk, and resilience. As several pathways are supported while others are not, the structural model provides nuanced insights into the dynamics among the studied constructs.

The Effect of Regulation on Financial Behavior

The results of the study indicate that regulation has a positive and significant effect on the financial behavior of MSMEs ($\beta = 0.206$; $p = 0.001$), which indicates that good quality regulation encourages more disciplined, transparent, and accountable financial management. Regulations serve as operational guidelines that reduce agency problems and asymmetric information, in line with the Theory of Regulation (Coglianese, 2014), Agency Theory (Jensen & Meckling, 2012) (Sutisna et al., 2024) and Stakeholder Theory (Fares et al., 2021), by strengthening business legitimacy and compliance with ethical and operational standards. These findings also support the concept of enforcement savings (Challoumis, 2024), whereby clear and consistent regulations strengthen local economic circulation, prevent capital leakage, and increase the transparency of MSME financial transactions, thereby reducing the risk of irregularities. Overall, the significant influence of regulation on financial behavior confirms the role of effective regulation in creating sustainable financial behavior while strengthening local economic health through increased financial inclusion, financial technology, governance, and long-term financial resilience.

The Impact of Regulation on Financial Risk

The results of the study show that regulations have a positive and significant effect on reducing MSME financial risk ($\beta = 0.152$; $p = 0.015$), indicating that clear rules and effective supervisory mechanisms help business actors identify, anticipate, and manage risks systematically. These findings are in line with the Regulation Theory (Coglianese, 2014), Agency Theory (Jensen & Meckling, 2012), and Stakeholder Theory (Fares et al., 2021), which emphasize the role of regulation in increasing

transparency, compliance, and social legitimacy of MSMEs. Furthermore, these results are consistent with previous studies, including (Studi et al., 2025), which emphasize the need for adaptive regulation and financial literacy to control risks in the FinTech era, (Karyani et al., 2024) which affirms the role of regulation in maintaining cyber risk transparency, and (Muhammad Noman Qaisar, Ashi Perveen, 2025) which highlights the importance of risk and liquidity management in strengthening financial resilience. Thus, regulation has proven to be a key factor in reducing financial risk and strengthening the stability and sustainability of MSMEs.

The Impact of Regulation on Financial Resilience

The results of the study indicate that regulation does not have a direct effect on the financial resilience of MSMEs ($\beta = -0.029$; $p = 0.634$), which indicates that the existence of regulation has not yet significantly improved financial capacity or business resilience. This is in line with the corporate financial management perspective that emphasizes internal roles such as working capital management, financing structure, and operational efficiency (Ross et al., 2016), as well as with Agency Theory and Stakeholder Theory, which highlight that regulations have a greater impact on compliance, transparency, and value creation for stakeholders than on financial resilience directly (Jensen & Meckling, 2012); (Sutisna et al., 2024) Sutisna et al., 2024; (Fares et al., 2021); these findings are supported by previous empirical evidence showing that the financial resilience of MSMEs is more influenced by internal strategies, financial literacy, liquidity buffers, and cost management than administrative regulations alone (Challoumis, 2024)(Sharma, 2025) (Muhammad Noman Qaisar, Ashi Perveen, 2025), so the effectiveness of regulations in improving financial resilience requires assistance through strong financial management.

The Impact of Financial Inclusion on Financial Behavior

The results show that financial inclusion has a positive and significant effect on the financial behavior of MSMEs ($\beta = 0.319$; $p = 0.000$), indicating that the greater the access of business actors to formal financial services, the better their ability to manage their finances rationally, systematically, and disciplinedly. This finding is consistent with the principles of corporate financial management (Ross et al., 2016), Agency Theory (Jensen & Meckling, 2012) (Sutisna et al., 2024) Stakeholder Theory (Fares et al., 2021) and financial inclusion theory (Parsaulian, 2022; Sarma & Pais, 2008), which emphasize the role of access to financial services in improving accountability, transparency, and economic decision-making capacity. Empirical support from previous studies, including (Alfina Yuniar Prastika and Ana Kadarningsih, 2025; Hutaaruk et al., 2024; Nasution & Balatif, 2025; Oktadiansyah & Sari, 2025), reinforces the finding that financial inclusion is a key factor in shaping SME financial behavior that is more structured, informative, and oriented towards business sustainability.

The Effect of Financial Inclusion on Financial Risk

The results show that financial inclusion has a positive and significant effect in reducing MSME financial risk ($\beta = 0.341$; $p = 0.000$), confirming that access to formal financial services such as savings, financing, insurance, and digital payments strengthens MSMEs' ability to diversify risk, manage cash flow, and avoid informal financial practices. These findings are in line with the principles of corporate financial management (Ross et al., 2016; Suriyanti et al., 2023), Agency Theory and Stakeholder Theory (Fares et al., 2021; Jensen & Meckling, 2012; Sutisna et al., 2024) (Jensen & Meckling, 2012; Sutisna et al., 2024), which emphasize the role of financial inclusion in improving financial discipline, reducing information asymmetry, and strengthening transparency, accountability, and business legitimacy. Consistent with previous studies, such as (Kurniadi et al., 2024) shows that financial inclusion functions not only as access to financing but also as a risk mitigation mechanism that enhances the stability and resilience of MSMEs in facing economic uncertainty.

The Effect of Financial Inclusion on Financial Resilience

The results show that financial inclusion does not have a direct effect on the financial resilience of MSMEs ($\beta = 0.050$; $p = 0.509$), indicating that access to formal financial services does not automatically improve financial resilience without adequate financial management skills and risk management practices. This finding is in line with the principles of corporate financial management and Agency Theory, which emphasize that agent behavior is a determining factor in resilience, as well as Stakeholder

Theory, which emphasizes the importance of accountable relationships with stakeholders. Consistent with previous studies, such as (Amanda et al., 2024; Himawan, 2024; Irma Nur Fadlia et al., 2023), reinforces the evidence that financial inclusion acts as an enabler whose effectiveness depends on literacy, disciplined financial behavior, and SME risk management strategies, so that new financial access has a significant impact on resilience when complemented by these mediating mechanisms.

The Influence of Financial Technology on Financial Behavior

The results show that financial technology has a positive and significant effect on the financial behavior of MSMEs ($\beta = 0.338$; $p = 0.000$), confirming that the use of FinTech improves the quality of financial management through easier transaction recording, cash flow management, and faster and more accurate financial decision analysis. These findings are consistent with the principles of corporate financial management as well as Agency Theory and Stakeholder Theory, which emphasize that FinTech reduces information asymmetry, increases transparency, and strengthens relationships with stakeholders. Empirical support from previous studies, such as (Alfina Yuniar Prastika and Ana Kadarningsih, 2025; Maharani, 2025) shows that access to financial technology plays an important role in shaping rational, structured, and data-driven financial behavior, so that FinTech not only functions as a transaction tool but also as a strategic instrument to strengthen the discipline and governance of MSME finance in a sustainable manner.

The Impact of Financial Technology on Financial Risk

The results show that financial technology has a positive and significant effect on reducing MSME financial risk ($\beta = 0.317$; $p = 0.000$), confirming that the use of FinTech through transaction automation, recording accuracy, and real-time financial information availability enables MSMEs to identify risks earlier and make mitigative decisions quickly. This finding is in line with the principles of corporate financial management and the explanation of regarding the reduction of human error and increased operational efficiency, and is consistent with Agency Theory and Stakeholder Theory, which emphasize the role of FinTech in reducing information asymmetry, moral hazard, and trust risk. Empirical support from (Siringoringo, 2024) shows that the integration of financial technology in accounting improves risk mitigation and regulatory compliance, while the findings of remind us that the effectiveness of FinTech depends on user literacy and capacity, so that financial technology has significant potential in reducing MSME risks if accompanied by adequate management capabilities and supporting policies.

The Impact of Financial Technology on Financial Resilience

The results of the study indicate that financial technology has a significant but negative effect on the financial resilience of MSMEs ($\beta = -0.132$; $p = 0.032$), suggesting that the use of fintech does not automatically increase resilience and can lead to vulnerability if management capacity and digital literacy are low. These findings are in line with (Khan & Khan, 2023), which emphasizes the importance of digital and financial literacy for the effectiveness of fintech, (Della Erdiana et al., 2024), which found that digitization can reduce turnover and require adaptive resilience, and (Irma Nur Fadlia et al., 2023) which shows that fintech only strengthens financial resilience when used responsibly. Thus, this study confirms that the impact of financial technology is contextual and depends on managerial readiness, infrastructure, and SME risk management.

The Influence of Financial Behavior on Financial Resilience

The results show that financial behavior has a positive and significant effect on the financial resilience of MSMEs ($\beta = 0.260$; $p = 0.000$), indicating that good financial management practices such as recording transactions, budgeting, and cost control strengthen financial resilience. These findings are consistent with Corporate Financial Management Theory, Agency Theory, Financial Behavior Theory, and Financial Resilience Theory, which emphasize the importance of discipline, transparency, and adaptation in financial management. Empirically, this is in line with (Moazezi et al., 2025), which shows that financial behavior increases resilience through literacy and self-efficacy. (Shirley Ye & Wei, 2023) regarding the influence of self-control on financial resilience, as well as (Haryati et al., 2024) which confirms financial behavior as a dominant factor in strengthening the financial resilience of the younger generation.

The Influence of Financial Risk on Financial Resilience

The results show that financial risk has a significant effect on the financial resilience of MSMEs ($\beta = 0.371$; $p = 0.000$), where good risk management including identification, evaluation, control, and mitigation increases financial resilience. These findings are in line with financial management theory and Financial Risk Theory, which emphasize risk control as a prerequisite for financial stability, as well as Financial Resilience Theory, which highlights an organization's ability to mobilize resources to cope with economic pressures. Empirically, these results are consistent with previous studies, including (Angelina Wijaya Tan et al., 2024) which shows that adaptive strategies increase financial flexibility, (Muhammad Noman Qaisar, Ashi Perveen, 2025) related to liquidity integration and risk planning, (A.-Q. Cao et al., 2025) emphasizing risk mitigation in the rural sector, as well as (Irma Nur Fadlia et al., 2023) emphasizing the importance of liquidity and risk planning in building financial resilience. Thus, this study confirms that effective risk management is a strategic factor in strengthening the financial resilience of MSMEs.

The Influence of Financial Behavior on Financial Risk

The results show that financial behavior has a significant effect on reducing MSME financial risk ($\beta = 0.135$; $p = 0.022$), indicating that discipline in cash flow management, record keeping, expenditure control, and budget planning contributes to reducing potential financial risk. This finding is consistent with Financial Management, Behavioral Finance, Theory of Planned Behavior, and Risk Theory, which emphasize that structured financial behavior can improve risk mitigation capabilities. Empirically, these results are in line with (Adnyaswari & Sinarwati, 2024), which shows that financial discipline and habits influence responses to risk, and (Mutlu & Özer, 2022), which finds that literacy, attitudes, and risk tolerance significantly shape financial behavior and reduce risk exposure. Thus, this study confirms that healthy financial behavior is a strategic instrument in controlling risk and strengthening the resilience of MSMEs.

The Influence of Regulation on Financial Resilience through Financial Behavior

The results indicate that regulation has a significant indirect effect on SME financial resilience through the mediation of financial behavior ($\beta = 0.054$; $p = 0.013$), suggesting that regulation not only functions as an external controller but also shapes more disciplined and systematic financial behavior patterns. This finding is in line with the theory of regulation (Coglianese, 2014), financial behavior (Barberis & Thaler, 2002; Nasution & Balatif, 2025) and the theory of financial resilience (Hendri & Usman, 2023; Liu et al., 2025) which emphasizes the role of rules and norms in shaping prudent financial decisions. Empirically, these results are consistent with (Della Erdiana et al., 2024) which shows the need for regulatory intervention for MSMEs facing disruption, (Bayrakçeken, 2024) which confirms that an adaptive legal framework increases economic resilience, and (Y. Cao & Chou, 2022) which found that Basel III regulations strengthen bank resilience through risk management. Thus, financial behavior serves as the main channel that bridges the influence of regulation on the financial resilience of MSMEs.

The influence of regulations on financial resilience through financial risk

The results show that regulation has a significant effect on the financial resilience of MSMEs through a reduction in financial risk ($\beta = 0.056$; $p = 0.040$), indicating that regulation not only guides economic behavior but also functions as a protective mechanism that strengthens financial stability. These findings are consistent with regulatory theory, financial risk theory, and financial resilience theory, which emphasize the role of the regulatory framework in promoting compliance, transparency, and risk management. Empirically, these results are consistent with (Studi et al., 2025) regarding consumer protection in the digital era, (Karyani et al., 2024) regarding regulatory intervention to maintain financial system stability, and (Challoumis, 2024) which shows that strong regulation strengthens economic circulation and systemic resilience. Thus, regulation plays a strategic role in enhancing the financial resilience of MSMEs through risk reduction and economic discipline strengthening mechanisms.

The impact of financial inclusion on financial resilience through financial behavior

The results of the study indicate that financial inclusion has a significant effect on the financial behavior of MSMEs ($\beta = 0.083$; $p = 0.012$), which in turn increases their financial resilience. This finding is in line with the theory of financial inclusion (Karyani et al., 2024; Sarma & Pais, 2008), financial behavior theory, and financial resilience theory, which emphasize that access to formal financial services shapes disciplined financial habits and supports adaptability and risk mitigation. Empirically, these results are consistent with (Sakyi-Nyarko et al., 2022), which highlights the role of financial access in household resilience, (Ardi, 2023), which shows increased efficiency and access to capital for MSMEs, and (Gao & Gao, 2024; Masdo & Panday, 2025) which emphasizes the importance of digital financial inclusion in strengthening the resilience of the agricultural supply chain. Thus, this study confirms that financial inclusion is a strategic mechanism in shaping healthy financial behavior while improving the financial resilience of MSMEs.

The effect of financial inclusion on financial resilience through financial risk

The results show that financial inclusion has a significant effect on the financial resilience of MSMEs ($\beta = 0.126$; $p = 0.000$), where increased access to formal financial services helps reduce risk and strengthen business stability. These findings are in line with financial management theory, financial risk theory, and financial resilience theory, which emphasize the importance of cash flow management, funding diversification, and the utilization of financial resources to increase resilience. Empirically, these results are consistent with (Sakyi-Nyarko et al., 2022) regarding household resilience through access to formal accounts and savings, (Ardi, 2023) which emphasizes the role of financial literacy and inclusion in improving the resilience of MSMEs, and (Gao & Gao, 2024; Masdo & Panday, 2025) which shows that digital financial inclusion promotes supply chain resilience and farmer groups. Thus, is consistent with Financial Management, Behavioral Finance, Theory of Planned Behavior, and Risk Theory, which emphasize that structured financial behavior can improve risk mitigation capabilities. Empirically, these results are in line with (Adnyaswari & Sinarwati, 2024), which shows that financial discipline and habits influence responses to risk, and (Mutlu & Özer, 2022), which finds that literacy, attitudes, and risk tolerance significantly shape financial behavior and reduce risk exposure. Thus, this study confirms that healthy financial behavior is a strategic instrument in controlling risk and strengthening the resilience of MSMEs.

The Influence of Regulation on Financial Resilience through Financial Behavior

The results indicate that regulation has a significant indirect effect on SME financial resilience through the mediation of financial behavior ($\beta = 0.054$; $p = 0.013$), suggesting that regulation not only functions as an external controller but also shapes more disciplined and systematic financial behavior patterns. This finding is in line with the theory of regulation (Coglianese, 2014), financial behavior (Barberis & Thaler, 2002; Nasution & Balatif, 2025) and the theory of financial resilience (Hendri & Usman, 2023; Liu et al., 2025) which emphasizes the role of rules and norms in shaping prudent financial decisions. Empirically, these results are consistent with (Della Erdiana et al., 2024) which shows the need for regulatory intervention for MSMEs facing disruption, (Bayrakçeken, 2024) which confirms that an adaptive legal framework increases economic resilience, and (Y. Cao & Chou, 2022) which found that Basel III regulations strengthen bank resilience through risk management. Thus, financial behavior serves as the main channel that bridges the influence of regulation on the financial resilience of MSMEs.

The influence of regulations on financial resilience through financial risk

The results show that regulation has a significant effect on the financial resilience of MSMEs through a reduction in financial risk ($\beta = 0.056$; $p = 0.040$), indicating that regulation not only guides economic behavior but also functions as a protective mechanism that strengthens financial stability. These findings are consistent with regulatory theory, financial risk theory, and financial resilience theory, which emphasize the role of the regulatory framework in promoting compliance, transparency, and risk management. Empirically, these results are consistent with (Studi et al., 2025) regarding consumer protection in the digital era, (Karyani et al., 2024) regarding regulatory intervention to maintain financial system stability, and (Challoumis, 2024) which shows that strong regulation strengthens economic circulation and systemic resilience. Thus, regulation plays a strategic role in

enhancing the financial resilience of MSMEs through risk reduction and economic discipline strengthening mechanisms.

The impact of financial inclusion on financial resilience through financial behavior

The results of the study indicate that financial inclusion has a significant effect on the financial behavior of MSMEs ($\beta = 0.083$; $p = 0.012$), which in turn increases their financial resilience. This finding is in line with the theory of financial inclusion (Karyani et al., 2024; Sarma & Pais, 2008), financial behavior theory, and financial resilience theory, which emphasize that access to formal financial services shapes disciplined financial habits and supports adaptability and risk mitigation. Empirically, these results are consistent with (Sakyi-Nyarko et al., 2022), which highlights the role of financial access in household resilience, (Ardi, 2023), which shows increased efficiency and access to capital for MSMEs, and (Gao & Gao, 2024; Masdo & Panday, 2025) which emphasizes the importance of digital financial inclusion in strengthening the resilience of the agricultural supply chain. Thus, this study confirms that financial inclusion is a strategic mechanism in shaping healthy financial behavior while improving the financial resilience of MSMEs.

The effect of financial inclusion on financial resilience through financial risk

The results show that financial inclusion has a significant effect on the financial resilience of MSMEs ($\beta = 0.126$; $p = 0.000$), where increased access to formal financial services helps reduce risk and strengthen business stability. These findings are in line with financial management theory, financial risk theory, and financial resilience theory, which emphasize the importance of cash flow management, funding diversification, and the utilization of financial resources to increase resilience. Empirically, these results are consistent with (Sakyi-Nyarko et al., 2022) regarding household resilience through access to formal accounts and savings, (Ardi, 2023) which emphasizes the role of financial literacy and inclusion in improving the resilience of MSMEs, and (Gao & Gao, 2024; Masdo & Panday, 2025) which shows that digital financial inclusion promotes supply chain resilience and farmer groups. Thus, role of formal GFG. Therefore, strategies to strengthen the resilience of MSMEs should focus on improving financial literacy and adaptive risk management, while GFG should play an administrative supporting role.

CONCLUSION

The research findings indicate that Regulation, Financial Inclusion, and Financial Technology do not directly influence the Financial Resilience of MSMEs, but rather work through the mediating mechanisms of Financial Behavior and Financial Risk. Disciplined financial behavior has been shown to reduce financial risk, and this causal chain significantly enhances business resilience. Another important finding is the moderating role of Good Financial Governance (GFG), which can strengthen the positive impact of sound financial behavior and mitigate the negative influence of financial risk on business resilience. Thus, the resilience of MSMEs is highly dependent on sound financial management reinforced by transparent, accountable, and consistent governance. In terms of contribution and implications, this study expands the literature by proving that the principles of financial governance that have been widely applied to large companies are also crucial for MSMEs, particularly in strengthening internal risk management mechanisms and financial behavior. Policy recommendations emphasize the need to shift the focus from merely increasing access to finance and technology to strengthening financial governance through training, integrating GFG features into digital applications, and establishing more disciplined financial behavior. For further research, follow-up studies are recommended to use qualitative or mixed methods approaches, test other moderating variables such as family or community support, and apply the model in different regions to compare the effectiveness of GFG in various MSME contexts.

REFERENCES

- Adnyaswari, N. P., & Sinarwati, N. K. (2024). Understanding risk and reward in investment: The role of financial behavior. *Science: Journal of Management and Business*, 16(1).
- Alfina, Y. P., & Kadarningsih, A. (2025). 64–76+. *Alfina Yuniar Prastika (Sinta 5)*. *IMK*, 5(1), 64–76. <http://journal.politeknik-pratama.ac.id/index.php/IMK>

- Amanda, D., Maulana, M. A. A., Rastafel, Y., & Pandin, M. Y. R. (2024). The influence of financial literacy and inclusion on financial resilience in financial institutions for the prosperity of farmers in Tanjung Village, Driyorejo District. *J-CEKI: Jurnal Cendekia Ilmiah*, 3(4).
- Ambouw, N. E. B., Tan, A. W., Hasnita, S. K. F., & Pandin, M. Y. R. (2024). From risk to opportunity: Analysis of PT Denpoo Mandiri Indonesia's financial resilience strategy in facing the global economy. *Cemerlang: Journal of Management and Business Economics*, 4(3).
- Ardi, N. F. (2023). Determination of financial literacy and financial inclusion on the performance of MSMEs and financial resilience of MSME owners. *Enrichment: Journal of Management*, 13(3), 2182–2189.
- Barberis, N., & Thaler, R. (2002). *A survey of behavioral finance*. NBER Working Paper Series, 2–67.
- Bayrakçeken, D. A. (2024). Economic security in times of crisis: A legal framework for sustainable financial resilience. *Mayo RC Journal of Communication for Sustainable World*, 1(2), 65–74.
- Cao, A.-Q., Jiang, Z.-Q., & Wei, Y.-N. (2025). Rural households' financial resilience, risk preference and non-farm employment based on micro data from CHFS. *Management System Engineering*, 4(1), 1–15. <https://doi.org/10.1007/s44176-025-00046-1>
- Cao, Y., & Chou, J. Y. (2022). Bank resilience over the COVID-19 crisis: The role of regulatory capital. *Finance Research Letters*, 48, 102891. <https://doi.org/10.1016/j.frl.2022.102891>
- Challoumis, C. (2024). *Understanding the money cycle – How regulation policies shape financial flows*. III International Scientific Conference, Toronto, Canada, 26–27 September 2024, 419–441.
- Coglianesi, B. C. (2014). Evaluating the impact of regulatory policy. *OECD Framework for Regulatory Policy Evaluation*, 1.
- Della Erdiana, Sari, N. F. D., Asari, A., & Pandin, M. Y. R. (2024). The impact of the digital economy through e-commerce platforms on financial resilience in MSMEs in the Menganti Market. *Economic Reviews Journal*, 3(2).
- Department of Cooperatives, UM. (2024). *Performance report LKJIP 2024 Department of Cooperatives and Micro Enterprises*.
- Fares, J., Chung, K. S. K., & Abbasi, A. (2021). Stakeholder theory and management: Understanding longitudinal collaboration networks. *PLoS ONE*, 16(10), 1–28. <https://doi.org/10.1371/journal.pone.0255658>
- Gao, X., & Gao, R. (2024). A study of the impact of digital financial inclusion on the resilience of the agricultural chain. *Frontiers in Sustainable Food Systems*, 8. <https://doi.org/10.3389/fsufs.2024.1448550>
- Haryati, S., Suropto, S., Wardianto, K. B., & Pratama, M. A. (2024). Exploring financial resilience in Lampung Province: The effect of digital financial literacy, numeracy skills, and financial behavior on youth. *The Es Accounting and Finance*, 3(1), 19–28. <https://doi.org/10.58812/esaf.v3i01.374>
- Hasyim, H. (2025). The use of artificial intelligence in sharia financial risk management. *IJIEB: Indonesian Journal of Islamic Economics and Business*, 10(1), 132–143.
- Hendri, H., & Usman, U. (2023). Financial resilience in the quarter-life crisis phase: Analysis of the roles of financial literacy, financial planning, self-efficacy, and income. *MEA: Scientific Journal of Management, Economics & Accounting*, 7(3), 1402–1419. <https://doi.org/10.31955/mea.v7i3.3538>
- Himawan, I. A. (2024). Enhancing the financial resilience of MSMEs: The role of financial literacy, financial inclusion, and financial behavior.
- Hutauruk, R. P. S., Zalukhu, R. S., Collyn, D., Jayanti, S. E., Sinaga, M., & Damanik, S. W. H. (2024). The influence of financial literacy, financial inclusion, and gender on the financial management behavior of MSME actors in Medan City. *Accounting Progress*, 3(1), 72–84.
- Irma, N. F., Damayanti, H. T., Rahayu, C. S., & Pandin, M. Y. R. (2023). The role of financial technology and financial behavior toward student financial resilience. *OSF PrePrint*, 1–11.
- Jensen, M., & Meckling, W. (2012). Theory of the firm: Managerial behavior, agency costs, and ownership structure. *The Economic Nature of the Firm: A Reader* (3rd ed., pp. 283–303). <https://doi.org/10.1017/CBO9780511817410.023>
- Karyani, E., Faturohman, T., Noveria, A., & Rahadi, R. A. (2024). Financial resilience in ASEAN-4 banking sector: Impact of cyber risk disclosure. *Kasetsart Journal of Social Sciences*, 45(3), 901–914. <https://doi.org/10.34044/j.kjss.2024.45.3.20>

- Khan, F., & Khan, R. (2023). *Advance Journal of Econometrics and Finance*, 1, 1–16.
- Kurniadi, R., & Ihsan, M. (2025). 1–2. *Journal Title*, 4(8), 6059–6068.
- Kurniadi, R., Ihsan, M., Kurniawan, A., Setyowati, S. M., & Mortadza, N. S. (2024). Do financial inclusion and digital maturity optimize bank risk-taking? *Owner*, 8(4), 4232–4243. <https://doi.org/10.33395/owner.v8i4.2458>
- Liu, Z., Chen, J. K., & Xiao, J. J. (2025). Financial resilience: A scoping review, conceptual synthesis and theoretical framework. *International Journal of Bank Marketing*, 43(7), 1541–1576. <https://doi.org/10.1108/IJBM-12-2024-0735>
- Maharani. (2025). The influence of financial literacy, financial technology, and hedonistic lifestyle on personal financial management behavior. *Maneksi Journal*, 14(1), 154–161.
- Masdo, M. G. A., & Panday, D. M. B. (2025). Financial inclusion and resilience among farmers in rural communities. *Journal Title*, 14(2), 110–119.
- Moazezi, A., Tehran, K., Hassani, A., Darvishan, S., Mohajer, S., Shafiesabet, A., & Tashakkori, A. (2025). The impact of financial literacy on financial behavior and financial resilience with the mediating role of financial self-efficacy. *International Journal of Industrial Engineering and Operational Research*, 7.
- Muhammad, N. Q., Perveen, A., & S. M. (2025). Financial resilience strategies: Liquidity, cost management, and risk planning in economic downturns. *Advance Journal of Econometrics and Finance*, 3(2), 1–16.
- Mutlu, Ü., & Özer, G. (2022). The effect of individuals' financial risk tolerance, financial literacy and financial attitude on financial behaviors. *Journal of Emerging Economies and Policy (JOEEP)*, 7(1), 8–15.
- Nasution, A. A., & Balatif, M. R. (2025). The influence of financial literacy, financial inclusion, lifestyle, and financial technology on the financial behavior of PT. X employees in North Sumatra. *Owner*, 9(1), 542–556. <https://doi.org/10.33395/owner.v9i1.2428>
- OJK. (2023). *National survey on financial literacy and inclusion*.
- Oktadiansyah, N., & Sari, S. (2025). The influence of financial self-efficacy and financial inclusion on the financial behavior of students in the digital age. *Ekonomia*, 15(1), 14–24.
- Parsaulian, B. (2022). Financial inclusion and financial stability in Indonesia. *JEMBA*, 2(1), 9–17. <https://doi.org/10.52300/jemba.v2i1.4213>
- Putri, A. R. Y., Rispantyo, & Astuti, D. S. P. (2025). The influence of financial literacy and financial inclusion on financial behavior with financial technology as an intervening variable on MSMEs in Solo City. *International Journal of Integrative Research*, 3(3), 221–230. <https://doi.org/10.59890/ijir.v3i3.524>
- Ross, S., Westerfield, R., Jaffe, J., & Jordan, B. (2016). *Corporate finance*. Econ 134A Textbook.
- Sakyi-Nyarko, C., Ahmad, A. H., & Green, C. J. (2022). The gender-differential effect of financial inclusion on household financial resilience. *Journal of Development Studies*, 58(4), 692–712.
- Sarma, M., & Pais, J. (2008). Financial inclusion and development: A cross country analysis. *Annual Conference of the Human Development and Capability Association*, 168(10–13), 1–30.
- Sharma, S. (2025). Financial resilience in an age of environmental change: Central banks and financial regulators feel the heat. *SSRN Electronic Journal*, 44(6). <https://doi.org/10.2139/ssrn.5366651>
- Shirley Ye, S., & Wei, F. (2023). How does consumers' self-control predict financial behavior and financial resilience? *International Journal of Business Anthropology*, 13(2). <https://doi.org/10.33423/ijba.v13i2.6593>
- Siringoringo, H. (2024). The role of accounting information systems in risk management and company compliance with regulations. *Jurnal Intelek dan Cendekiawan Nusantara*, 1(November), 8916–8923.
- Studi, P., Feb, M., & Kediri, U. N. P. (2025). Fintech consumer risk and the urgency of financial literacy. *Journal Title*, 4(2024), 36–48.
- Sukma, E., Risdayani, N., & Hendra, J. (2025). The role of digitalization in improving the effectiveness of risk management in Islamic financial institutions. *Journal of Business Inflation Management and Accounting*, 2(1), 41–48. <https://doi.org/10.57235/bima.v2i1.4528>
- Suriyanti, Rahmansah, A. A., & Ramlawati. (2023). Analysis of village financial management in improving the effectiveness of development programs in Sikkuale Village. *SEIKO: Journal of Management & Business*, 6(2), 235–246.

- Sutisna, D., Nirwansyah, M., Ningrum, S. A., & Anwar, S. (2024). Literature review on the role of agency theory in various issues in accounting. *Karimah Tauhid*, 3.
- Upravitelev, A. (2024). The fintech revolution's impact on financial behavior and education. *Journal of Behavioral Economics for Policy*, 8(2), 29–33.
- Wahyuandari, W., Ratnawati, T., & Riyadi, S. (2022). Effect of regulation, accountability systems, accounting principles, and priority programs on performance accountability and performance reporting. *International Research Journal of Management, IT and Social Sciences*, 9(1), 159–167.
- Wibowo, A. E., & Siswanto, D. J. (2022). The influence of financial literacy and financial governance learning on family financial resilience. *Mahatvavirya Journal*, 9(2), 59–70.
- Wulandari, W., Munawaroh, S., & Setiawan, A. (2023). Village financial management in realizing good financial governance in Lembang Village. *Perspektif*, 12.
- Yiping, H., Zhang, L., Li, Z., Qiu, H., Sun, T., & W., X. (2020). Fintech credit risk assessment for SMEs: Evidence from China. *IMF Working Paper*, 23529(2), 1–45.
- Zamzami, F., Fajri, F. A., Huda, I., & Timur, P. (2022). Website-based technology. *Journal Title*, 2020, 907–916.
- Zamzami, F., Fajri, F. A., Huda, I., & Prasetya Timur, R. (2024). Improving regulatory compliance through the development of financial information systems for village-owned enterprises using website-based technology. *Akmenika: Journal of Accounting and Management*, 21(2).