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The Interaction of Emergency Funds, Debt-to-Income Ratio, and Retirement Savings in Improving the Financial Resilience of Indonesian Households

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A R T I C L E I N F O

Keywords:
Household financial resilience; emergency fund; debt-to-income ratio; retirement savings; financial literacy; household financial management; financial capability; long-term financial planning

A B S T R A C T

Household financial resilience is increasingly important amid economic uncertainty. This study examines the effects of emergency funds, debt-to-income ratio, and retirement savings on household financial resilience, with financial literacy as a moderating variable. A quantitative survey was conducted involving 400 Indonesian households, and the data were analyzed using PLS-SEM. The results show that emergency funds and retirement savings positively affect financial resilience, while the debt-to-income ratio has a negative effect. Financial literacy strengthens the positive effects of emergency funds and retirement savings and mitigates the negative impact of debt burden. These findings highlight the importance of financial capability in enhancing household financial resilience.

A B S T R A K

Ketahanan keuangan rumah tangga menjadi semakin penting di tengah ketidakpastian ekonomi. Penelitian ini menganalisis pengaruh dana darurat, rasio utang terhadap pendapatan, dan tabungan pensiun terhadap ketahanan keuangan rumah tangga dengan literasi keuangan sebagai variabel moderasi. Penelitian menggunakan metode survei kuantitatif terhadap 400 rumah tangga di Indonesia dan dianalisis menggunakan PLS-SEM. Hasil penelitian menunjukkan bahwa dana darurat dan tabungan pensiun berpengaruh positif terhadap ketahanan keuangan, sedangkan rasio utang terhadap pendapatan berpengaruh negatif. Literasi keuangan memperkuat pengaruh positif dana darurat dan tabungan pensiun serta mengurangi dampak negatif beban utang. Temuan ini menegaskan pentingnya kemampuan keuangan dalam meningkatkan ketahanan keuangan rumah tangga

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Introduction

Household financial resilience is an issue receiving increasing attention in economic and financial studies, given economic uncertainty, income fluctuations, and the frequency of unexpected financial shocks. In this context, financial resilience is not only defined as the ability to meet current consumption needs, but also as the household's capacity to withstand, adapt, and recover from economic pressures such as job loss, rising living costs, or other emergencies. In Indonesia, this challenge is increasingly relevant given that most households still face structural vulnerabilities in the form of limited access to formal financial services, low savings rates, and a high proportion of expenditure relative to income. Therefore, understanding the factors influencing household financial resilience is crucial for developing policies and strategies to strengthen community economic well-being (Hamid et al., 2023).

Various previous studies have attempted to explain the determinants of household financial resilience through economic and behavioral approaches. Emergency funds are viewed as a short-term financial protection mechanism that serves as a buffer against unexpected income shocks or expenses. The debt-to-equity ratio is widely used as an indicator of household financial health, as relatively high debt levels can limit financial flexibility and increase vulnerability to risk. Meanwhile, retirement savings are positioned as a crucial instrument for maintaining long-term financial well-being. However, previous research has shown that ownership of these financial instruments does not always result in optimal levels of financial resilience (Puspita, 2024; Zhang, 2026). This indicates that there are conditional factors that have not been fully considered in explaining variations in household financial resilience.

Previous studies have widely examined the direct effects of emergency funds, debt-to-income ratio, and retirement savings on household financial resilience. However, the findings remain inconclusive because the effectiveness of these financial resources may depend on the household's financial capability in managing and utilizing them properly (Salignac et al., 2019). Most prior studies have paid limited attention to the conditional role of financial literacy as a moderating factor, particularly in the context of developing countries such as Indonesia (Liu et al., 2024). In addition, previous research gap by examining the relationship between emergency funds, debt-to-income, retirement savings, and household financial resilience among Indonesian households. A limitation of previous research lies in the tendency to directly assess the influence of emergency funds, debt-to-income ratio, and retirement savings on household financial resilience, without considering factors that may strengthen or weaken this relationship (Sun et al., 2022).

This research is based on the Financial Resilience theory developed by Salignac et.al. (2019, 2022) as a grand foundation. Financial resilience theory . This theory defines financial resilience as the ability of individuals and households to cope with financial stress through a combination of interacting financial resources, capabilities, and social support. (Salignac et al., 2019) conceptualize financial resilience not as a static condition, but rather as a dynamic process influenced by the economic, social, and behavioral contexts of individuals. Within this framework, financial resilience is not solely determined by the size of assets or financial instruments held, but also by the household's capacity to mobilize and utilize these resources effectively when facing economic shocks. This theory is relevant to explaining why having an emergency fund, managing the debt ratio, and accumulating retirement savings do not automatically result in optimal financial resilience, as their effectiveness depends heavily on the household's ability to understand and manage these financial instruments. (Salignac et al., 2022) further expands this framework by emphasizing that financial literacy is one dimension of capability that conditionally influences the relationship between financial resources and household financial resilience, thus supporting the position of financial literacy as a moderating variable in this study.

This study aims to analyze the influence of emergency funds, debt-to-income ratio, and retirement savings on household financial resilience, and to examine the role of financial literacy as a moderating variable in this relationship in the context of households in Indonesia.

Literatur Review

Financial Resilience Theory

According to (Lusardi & Mitchell, 2014), Financial resilience Theory explains that financial resilience is the ability of individuals or households to withstand, adapt to, and recover from unexpected economic shocks, such as job loss, health crises, or sudden drops in income. This theory views households as economic units that require a solid financial foundation to absorb financial pressures without experiencing long-term well-being disruptions (Atkinson, 2012). Emergency funds strengthen financial resilience because they serve as the first line of liquidity support that can be accessed without having to sacrifice productive assets or increase debt burdens; Thus, households with adequate emergency funds tend to be better able to maintain consumption stability amid crisis situations (Ilham et al., 2026).

Furthermore, the debt-to-income ratio is a key factor in the context of Financial Resilience Theory, as households burdened with excessive debt will face significant cash flow pressures, thereby reducing their ability to accumulate protective assets and respond effectively to financial shocks. Households with high debt-to-income ratios are more vulnerable to the risk of default and a decline in quality of life when income disruptions occur, making prudent debt management a crucial element in building long-term financial resilience (Brunetti et al., 2025). Pension savings also contribute more efficiently by accurately assessing risks and using available financial instruments as a strategy to protect against economic shocks (Atkinson, 2012). Thus, financial literacy functions not merely as passive knowledge but as an active catalyst that optimizes the effectiveness of emergency funds, a controlled debt-to-income ratio, and retirement savings in building household financial resilience.

Based on this discussion, the Financial Resilience Theory is used to explain the relationship among the variables of emergency funds, debt-to-income ratios, and retirement savings in relation to household financial resilience, as all three serve as fundamental pillars that collectively determine a household's capacity to withstand and recover from financial pressures, while financial literacy acts as a moderator that strengthens or weakens the effectiveness of each of these variables in shaping sustainable financial resilience.

Emergency Fund

An emergency fund is a financial reserve held by a household to anticipate various unforeseen economic risks, such as job loss and the emergence of urgent needs. Within the framework of *Financial Resilience Theory,* the existence of an emergency fund reflects a household's ability not only to understand the importance of financial planning but also to implement that knowledge into practical financial management practices.

Several studies have shown that households with emergency funds tend to maintain consumption stability and reduce reliance on debt when facing economic shocks, resulting in relatively lower levels of financial stress and improved adaptability (Nguyen, 2023). However, empirical findings also indicate that emergency fund ownership remains relatively limited, particularly in developing countries, reflecting the limited ability of some households to access and manage financial resources optimally (Lulaj et al., 2021).

Furthermore, most previous studies still analyze emergency funds as a stand-alone factor without comprehensively linking them to financial capability and its interaction with other financial variables. This situation suggests that the strategic role of emergency funds in building household financial resilience still requires further study. Therefore, emergency funds are suspected to have a positive effect on household financial resilience.

H1 : **Emergency funds have a positive effect on household financial resilience.**

Debt to Income Ratio

The debt-to-income ratio reflects the proportion of household income used to meet debt repayment obligations. This ratio reflects a household's ability to manage financial obligations relative to its income capacity. The higher the debt-to-income ratio, the greater the financial stress a household faces because a portion of its income is allocated to debt repayment.

From the perspective of Financial Resilience Theory, debt management is a critical factor influencing a household's ability to weather economic shocks. Households with a high debt-to-income ratio tend to have less financial flexibility due to limitations in allocating funds for savings, emergencies, or other urgent needs. This situation can increase household vulnerability to financial risk, particularly when income declines or living costs increase.

Previous research has shown that a high debt-to-income ratio is associated with increased financial stress and decreased household financial resilience. (Xiao & Kim, 2022)found that high debt burdens can increase the risk of financial stress and reduce a household's ability to maintain economic stability. Similar findings also indicate that households with excessive debt obligations are more vulnerable to financial difficulties when facing unstable economic conditions.

However, several studies have shown that debt does not always have a negative impact if it is managed proportionally and used for productive purposes, such as investing in education, business, or owning productive assets. This suggests that the effect of the debt-to-income ratio on financial resilience can vary depending on a household's ability to manage debt wisely. Furthermore, most previous research has focused on the direct impact of debt on financial conditions without examining its interaction with behavioral factors and household financial management. Therefore, the debt-to-income ratio is suspected to have a negative impact on household financial resilience.

H2: The debt-to-income ratio has a negative effect on household financial resilience.

Retirement Savings

Retirement savings is a form of long-term financial planning aimed at maintaining the financial well-being of individuals or households when they no longer receive active income. Within the framework of *Financial Resilience Theory* , retirement savings are viewed as a strategic asset that reflects a household's ability to plan, manage, and allocate financial resources sustainably to address lifecycle risks .

From the perspective of Financial Resilience Theory, retirement savings are viewed as a long-term protection asset that reflects a household's preparedness to face economic risks in later stages of the life cycle. Households with retirement savings tend to be better able to maintain financial stability because they have a reserve of financial resources that can be used to meet living expenses in retirement. Thus, retirement savings play a role in strengthening the adaptive capacity and sustainability of household financial well-being.

Previous research has shown that retirement savings positively contributes to household financial stability and resilience. (Cribb et al., 2023)found that retirement savings play a significant role in reducing economic vulnerability and financial dependence in old age, particularly amid rising life expectancy and uncertain living costs. Furthermore, (Zhao et al., 2024)demonstrated that demographic factors, job characteristics, and pension system support influence an individual's ability to build retirement savings, with participation in formal or voluntary pension schemes encouraging long-term savings behavior.

However, most previous research has focused on static conditions and has been conducted primarily in developed countries with relatively well-established pension systems. Research on the dynamics of retirement saving behavior and its interaction with social and cultural factors, particularly in developing countries, is still relatively limited (Blaufus et al., 2025). Furthermore, the relationship between retirement savings and household financial resilience has not been comprehensively studied alongside other financial factors. Therefore, retirement savings are suspected to have a positive effect on household financial resilience.

H3: Retirement savings have a positive effect on household financial resilience .

Financial Literacy

Financial literacy refers to an individual's ability to understand financial concepts and products, evaluate financial risks, and make informed financial decisions. Financial literacy is a crucial aspect in helping households manage their financial resources effectively through planning, controlling spending, managing debt, and making long-term financial decisions.

From the perspective of Financial Resilience Theory, financial literacy is seen as a factor that can improve a household's ability to cope with economic pressures and financial uncertainty. Households with a good level of financial literacy tend to be better able to build emergency funds, manage debt proportionally, and prepare retirement savings as a form of protection against economic risks. Thus, financial literacy plays a role not only in financial knowledge but also as a skill that supports strengthening household financial resilience.

Several studies have shown that individuals with better financial literacy tend to be able to manage debt more effectively, develop financial plans, and build emergency funds as a form of protection against economic risks (Ankrah et al., 2022)low -income households , can strengthen family financial management and increase household financial resilience through budgeting practices, spending control, and the development of productive economic activities (Goso, 2022).

However, several studies have shown that high financial literacy does not necessarily automatically increase financial resilience if it is not accompanied by the actual ability to implement that knowledge. In the Indonesian context, the low level of financial literacy remains a barrier to optimal utilization of financial resources, thus weakening efforts to build long-term financial resilience (Ida & Gustaf, 2024). Furthermore, previous research has predominantly positioned financial literacy as a direct independent variable, while its role as a moderating variable in strengthening the relationship between financial factors and household financial resilience is still relatively limited.

Based on this description, financial literacy is thought to be able to strengthen the influence of emergency funds, debt-to-income ratio, and retirement savings on household financial resilience.

H4: Financial literacy moderates the effect of emergency funds, debt-to-income ratio, and retirement savings on household financial resilience.

Research Methods

This study uses a quantitative approach with a *multivariate causal associative method.* This approach was chosen to examine the causal relationship between variables through the analysis of numerical data obtained from household respondents. The research model allows for testing the direct influence of independent variables on the dependent variable, as well as testing the moderating effect of financial literacy.

Population and Sample

The population in this study was all households in Indonesia. Based on BPS data, the number of households in Indonesia was recorded at 74,749,466. The sampling technique used was *probability sampling* with a *stratified sampling method.* The sample size was determined using the Slovin formula , with an error rate of *0.05 . tolerance* of 5%, which is formulated as follows:

$$n = \frac{N}{1+N(e)^2}$$

Information:

n= number of samples
N= population size
e= error rate (5%)

Based on this formula, the calculation of the number of samples is as follows:

$$n = \frac{74.749.466}{1+74.749.466\ (0{,}05)^2}$$

$$n = \frac{74.749.466}{1 + 74.749.466(0{,}0025)}$$

$$n = \frac{74.749.466}{186.874.665}$$

$$n = 399{,}46 \approx 400$$

This resulted in a minimum sample size of 400 respondents. This number meets the representative criteria for multivariate statistical analysis using the *Partial Sample approach. Least Squares-Structural Equation Modeling* (PLS-SEM).

Data collection technique

Research data was collected through a survey using a structured questionnaire. The questionnaire was structured as a closed-ended statement using a Likert scale to measure respondents' perceptions and behaviors regarding emergency funds, debt-to-income ratio, retirement savings, financial literacy, and household financial resilience. In addition to primary data, this study also utilized secondary data sourced from official publications and statistical reports from relevant institutions to support the analysis.

Data Analysis Techniques

The collected data was analyzed using multivariate statistical analysis techniques. The analysis was conducted in stages, starting with data quality testing, measurement model testing, and finally structural model testing to test the research hypotheses. The moderating effect of financial literacy was tested by incorporating interaction variables into the analysis model. All stages of the analysis were arranged sequentially and consistent with the presentation of the research results in the following section.

Result and Discussion

Research result

Convergent Validity Test

Table 1. Results of Convergent Validity Test (Outer) Loading)

	D D (X1)	KF (Y)	L K(Z).	RU(X2)	TP(X3)
Fund1	0 , 848				
Funds2	0 , 791				
Dana3	0 , 906				
Dana4	0 , 729				
Dana5	0 , 844				
Dana6	0 , 841				
Ket1		0 , 899			
Ket2		0 , 935			
Ket3		0 , 854			
Ket4		0 , 887			
Ket5		0 , 850			
Ket6		0 , 877			
Literacy1			0 , 879		
Literacy2			0 , 931		
Literacy3			0 , 880		
Literacy4			0 , 802		
Literacy5			0 , 841		
Literacy6			0 , 871		
Ratio1				0 , 869	
Ratio2				0 , 929	
Ratio3				0 , 718	
Ratio4				0 , 941	
Ratio5				0 , 959	
Ratio6				0 , 879	

Savings1	0 , 925
Savings2	0 , 820
Savings3	0 , 873
Savings4	0 , 962
Savings5	0 , 861
Savings6	0 , 754

Source: Primary data processed using SmartPLS 4, 2025

Based on Table 1, all indicators have outer values The loading value was above 0.70, indicating that all indicators were valid in representing the research constructs. These results indicate that the research instrument met convergent validity criteria and was suitable for use in the next analysis stage.

Reliability Test and Construct Validity

Table 2 Results of Reliability Test and Convergent Validity of Constructs

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	**Average variance extracted (AVE)**
Emergency Fund (X1)	0.910	0.928	0.929	0.686
Financial Resilience (Y)	0.944	0.948	0.955	0.782
Financial Literacy(Z).	0.934	0.937	0.948	0.754
Debt Ratio(X2)	0.944	0.964	0.956	0.785
Retirement Savings(X3)	0.933	0.944	0.948	0.754

Source: Primary data processed using SmartPLS 4, 2025

Table 2 shows that all constructs have Cronbach's α values. Alpha and Composite Reliability above 0.70 and Average value Variance Extracted (AVE) above 0.50. Thus, all constructs are declared reliable and meet convergent validity.

Discriminant Validity Test

Table 3. Discriminant Validity Test (HTMT)

	DD (X1)	KF(Y)	LK (Z)	RU (X2)	TP (X3)	LK (Z) x DD (X1)	LK (Z) x TP(X3)	LK (Z) x RU (X2)
DD (X1)								
KF(Y)	0.410							
LK (Z)	0.301	0.238						
RU (X2)	0.269	0.162	0.217					
TP(X3)	0.215	0.256	0.249	0.227				
LK (Z) x DD (X1)	0.182	0.142	0.180	0.100	0.051			
LK (Z) x TP(X3)	0.048	0.246	0.265	0.102	0.155	0.122		
LK (Z) x RU (X2)	0.097	0.268	0.104	0.185	0.100	0.142	0.169	

Source: Primary data processed using SmartPLS 4, 2025

The HTMT test results show that all values between constructs are below the 0.90 threshold. This indicates that each construct has clear differences, thus meeting discriminant validity.

Multicollinearity Test

Table 4. Multicollinearity Test

	VIF
Emergency Fund (X1) -> Financial Resilience(Y)	1,165
Financial Literacy (Z) -> Financial Resilience (Y)	1,204
Financial Literacy (Z) x Emergency Fund (X1) -> Financial Resilience (Y)	1,071

Financial Literacy (Z) x Debt Ratio (X2) -> Financial Resilience(Y)	1,075
Financial Literacy (Z) x Retirement Savings(X3) -> Financial Resilience(Y)	1,109
Debt Ratio (X2) -> Financial Sustainability (Y)	1,130
Retirement savings(X3) -> Financial resilience(Y)	1,114

Source: Primary data processed using SmartPLS 4, 2025

Based on the test results, all VIF values are below 5.00 so that the research model does not experience multicollinearity problems and is suitable for use in testing structural models.

Predictive Test Relevance

Table 5. Predictive Test Results Relevance (Q²_predict)

	Q²predict	PLS-SEM_RMSE	PLS-SEM_MAE	LM_RMSE	LM_MAE	IA_RMSE	IA_MAE
KK1	0.293	0.898	0.684	1,008	0.817	1,068	0.862
KK2	0.295	0.877	0.682	0.976	0.783	1,044	0.854
KK3	0.278	0.841	0.653	0.933	0.743	0.990	0.801
KK4	0.284	0.922	0.707	1,018	0.816	1,090	0.885
KK5	0.215	0.928	0.709	1,023	0.815	1,048	0.830
KK6	0.267	0.897	0.689	0.970	0.771	1,047	0.850

Source: Primary data processed using SmartPLS 4, 2025

The Q² Predict value for all indicators shows a positive value, so the research model has good predictive ability in explaining endogenous variables.

Model Fit Test

Table 6. Model Suitability Test Results (SRMR)

	Saturated model	Estimated model
SRMR	0.041	0.040
d_ULS	0.765	0.753
d_G	0.281	0.277
Chi- square	654,683	642,981
NFI	0.920	0.921

Source: Primary data processed using SmartPLS 4, 2025

The results of the model evaluation show that the SRMR value is below 0.08 and the NFI value is close to 1. This indicates that the research model has a good level of fit with the empirical data.

Hypothesis Testing

Table 7. Hypothesis Test Results

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
DD (X1) -> KF(Y)	0.390	0.391	0.041	9,465	0.001
LK (Z) x DD (X1) -> KF(Y)	0.160	0.159	0.037	4,283	0.001
LK (Z) x RU (X2) -> KF(Y)	0.216	0.219	0.041	5,233	0.001
LK (Z) x TP (X3) -> KF(Y)	0.242	0.240	0.043	5,570	0.001
RU (X2) -> KF(Y)	-0.258	-0.265	0.039	6,677	0.001
TP(X3) -> KF(Y)	0.231	0.231	0.045	5,173	0.001

Source: Primary data processed using SmartPLS 4, 2025

Hypothesis testing results indicate that emergency funds and retirement savings have a positive and significant effect on household financial resilience, while the debt-to-income ratio has a negative and significant effect. Furthermore, financial literacy has been shown to moderate the relationship between emergency funds, debt-to-income ratio, and retirement savings on household financial resilience. Square value of 0.432 indicates that variations in household financial resilience can be explained by 43.2% by emergency funds, debt-to-income ratio, retirement savings, and financial literacy moderation, while the remainder is explained by other variables outside the research model.

Discussion

The Impact of Emergency Funds on Household Financial Resilience

The analysis shows that emergency funds have a positive and significant impact on household financial resilience. These results indicate that households with adequate emergency funds tend to be better able to cope with unexpected situations, such as loss of income, urgent medical needs, or other emergency expenses. Having an emergency fund helps households maintain financial stability without having to rely on debt or be forced to sell productive assets.

Households without adequate cash reserves are generally more vulnerable to financial stress when facing economic shocks. This situation can lead to poor financial decisions and potentially worsen financial conditions in the long term. Therefore, emergency funds act as a financial buffer, helping households maintain their ability to meet financial obligations and maintain more stable consumption patterns.

The results of this study are in line with research (Leng & Melinda, 2025) This suggests that individuals with emergency funds tend to be better able to maintain financial stability and cope with unexpected risks. Furthermore, (Liu et al., 2024)found that liquid assets serve as an important indicator of household financial stability during periods of economic shock because they can provide liquidity in emergencies.

Theoretically, the results of this study support the Financial Resilience Theory, which emphasizes that a household's ability to face and adapt to economic pressures is influenced by the readiness of its financial resources. Emergency funds reflect a household's financial readiness to face short-term economic risks through the ownership of liquid assets that can be used at any time. Therefore, the better a household's financial readiness through emergency funds, the stronger its financial resilience. Therefore, H1 is accepted.

The Effect of Debt-to-Income Ratio on Household Financial Resilience

The analysis shows that the debt-to-income ratio has a negative and significant impact on household financial resilience. This finding suggests that the higher the debt-to-income ratio, the lower the household's ability to maintain financial stability. High debt burdens cause a large portion of household income to be allocated to meet installment obligations, thereby reducing financial flexibility and limiting the household's ability to save and invest.

Excessive debt burdens also increase household vulnerability to economic shocks and unexpected financial needs. Households with high levels of debt are more likely to experience financial stress due to limited financial resources. Furthermore, unwise use of credit can trap households in a cycle of perpetual debt and weaken their ability to accumulate wealth in the long term. Therefore, prudent debt management is crucial to maintain a balance between debt and household income.

The results of this study are in line with research (Calcagnini et al., 2025) which shows that households with better financial literacy tend to be better able to manage debt burdens strategically and reduce the risk of financial stress. Furthermore, (Jalili et al., 2025) found that households with good financial planning and debt management skills are better able to weather economic shocks and reduce their vulnerability to financial hardship.

Theoretically, the results of this study support the Financial Resilience Theory, which explains that household financial resilience is influenced by the ability to manage risks and economic pressures. A high debt-to-income ratio reflects a household's low financial adaptive capacity because a significant portion of financial resources is used to meet debt obligations. Therefore, the higher the debt-to-income ratio, the lower the household's financial resilience. Therefore, H2 is accepted.

The Impact of Retirement Savings on Household Financial Resilience

The research results show that retirement savings have a positive and significant impact on household financial resilience. These results suggest that households with retirement savings tend to be better prepared to face long-term economic risks due to better financial planning. Retirement savings not only reflects a household's ability to meet current needs but also indicates financial readiness for future situations.

Retirement savings play a crucial role in reducing household dependence on active income, especially as they enter their retirement years or experience a decline in their ability to work. With retirement savings, households have an alternative source of funds to meet their living expenses without relying entirely on assistance or debt. This helps households maintain financial stability despite changes in the life cycle.

Furthermore, households that consistently prepare for retirement savings generally exhibit more disciplined and planned financial management practices. The ability to set aside a portion of income for long-term goals reflects a household's ability to prioritize finances, control spending, and anticipate future economic risks. This behavior indirectly strengthens a household's ability to cope with financial uncertainty.

The results of this study align with previous research showing that sound retirement planning plays a crucial role in improving household well-being and financial preparedness. (Liu et al., 2024)found that the level of retirement savings readiness in the community has increased, reflecting a greater awareness of the importance of long-term financial protection. Furthermore, (Tao & Lian, 2025) Data from the China Household Finance Survey shows that financial literacy encourages households to increase their retirement asset allocation and use of financial protection instruments as a form of preparedness for future economic risks.

Theoretically, the results of this study support the Financial Resilience Theory, which emphasizes that household financial resilience is influenced by the readiness of financial resources to face various economic risks throughout the life cycle. Retirement savings reflect a household's ability to build long-term financial protection, thereby increasing the stability and sustainability of financial well-being. Therefore, the greater the pension savings holdings, the stronger the household's financial resilience. Therefore, H3 is accepted.

The Role of Financial Literacy in Moderating the Effect of Emergency Funds, Debt-to-Income Ratio, and Retirement Savings on Household Financial Resilience

The research results show that financial literacy plays a moderating role in the influence of emergency funds, debt-to-income ratio, and retirement savings on household financial resilience. This finding indicates that a household's level of understanding and ability to manage finances can strengthen the effectiveness of financial resource management in building financial resilience.

In the context of emergency funds, financial literacy helps households understand the importance of providing a reserve fund and its appropriate use in the event of an emergency. Households with higher levels of financial literacy tend to be able to develop more effective emergency fund management strategies, thereby maximizing their financial protection function. Conversely, poor financial literacy can lead to inappropriate use of emergency funds, reducing their effectiveness in maintaining household financial stability.

Regarding the debt-to-income ratio, financial literacy helps households understand the risks of excessive debt use and the importance of aligning debt obligations with their income capacity. Households with good financial literacy tend to be more cautious in making debt decisions, understand the financial consequences of credit obligations, and are able to manage debt repayments in a more planned manner. Thus, the negative impact of the debt-to-income ratio on financial resilience can be minimized.

Furthermore, financial literacy also strengthens the role of retirement savings in household financial resilience. A sound financial understanding encourages households to be more aware of the importance of long-term financial planning and to prepare funding sources for downtime. Households with high levels of financial literacy tend to be better able to select appropriate retirement savings or investment instruments and manage their retirement savings more optimally to maintain sustainable financial well-being in the future.

The results of this study support several previous studies showing that financial literacy contributes to households' ability to manage savings, debt, and long-term financial planning. (Sulkiah, 2023) found that financial literacy positively impacts family financial management skills through savings management, debt management, and financial decision-making. Furthermore, (Dawolo et al., 2025)and (Soseco et al., 2025)demonstrated that financial literacy helps households manage debt obligations more effectively, thereby reducing financial stress. Research by Wang, 2023 and Mulviansyah et al., 2025 also shows that financial literacy plays an important role in improving the readiness of retirement planning and long-term savings management.

Theoretically, the results of this study support the Financial Resilience Theory, which emphasizes that household financial resilience is influenced not only by the ownership of financial resources but also by the household's ability to understand, manage, and utilize those resources effectively. Financial literacy enables households to optimize the function of emergency funds, control debt use, and prepare retirement savings in a more planned manner, thereby strengthening financial resilience in the face of various economic risks. Therefore, H4 is accepted.

Theoretical Implications

The results of this study strengthen the Financial Resilience Theory, which explains that household financial resilience is influenced not only by the ownership of financial resources but also by the household's ability to manage and utilize these resources effectively. This study contributes by demonstrating that financial literacy acts as a moderating variable, strengthening the effectiveness of emergency funds and retirement savings and weakening the negative impact of the debt-to-income ratio on household financial resilience. Thus, this study expands the development of financial resilience theory in the context of households in Indonesia.

Practical Implications

Practically, this research can be used as a reference by the government, financial institutions, and educational institutions in designing programs to improve public financial literacy. Financial education programs should be directed at households' ability to build emergency funds, manage debt healthily, and prepare for retirement savings to enhance long-term financial resilience. Furthermore, financial institutions can develop financial education and mentoring programs that help communities improve their household financial management skills in a more planned manner.

Benefits of research

This research is expected to contribute to the development of literature on household financial resilience, particularly regarding the moderating role of financial literacy in household financial management. Furthermore, the research can serve as a reference for households in improving their financial management to cope with future economic uncertainty and financial risks.

Conclusion and Suggestion

Conclusion

This study concludes that emergency funds and retirement savings have a positive and significant effect on household financial resilience, while the debt-to-income ratio has a negative and significant effect. These findings indicate that households with adequate liquid reserves and long-term financial preparation are better able to withstand financial shocks and maintain economic stability. Conversely, a higher debt burden reduces household flexibility in managing income and responding to unexpected financial pressures. Financial literacy also moderates these relationships by strengthening the positive effects of emergency funds and retirement savings and reducing the negative impact of the debt-to-income ratio. Therefore, household financial resilience is not only determined by the availability of financial resources but also by the ability to understand, manage, and utilize those resources effectively.

Suggestion

Based on these findings, households are encouraged to improve financial planning by consistently building emergency funds, controlling debt according to income capacity, and preparing retirement savings from an early stage. Government institutions, financial service providers, and educational institutions should strengthen financial literacy programs that focus on practical household financial management, particularly debt control, savings behavior, and long-term financial planning. Future studies are recommended to include other factors, such as income level, financial behavior, financial inclusion, and social support, and to expand the research scope across different regions to provide a more comprehensive understanding of household financial resilience.

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