Journal of Economics, Entrepreneurship, Management Business and Accounting, 2026, 4(4),1-22
https://doi.org/10.61255/jeemba.v4i4.844

Income, Saving Behavior, and Household Financial Decision-Making: A Moderated-Mediation Analysis of Behavioral and Economic Factors in Indonesia

Muhammad Irfai Sohilauw*[1], Rosdiana[2], Andi Harmoko Arifin[3], Nasir[4], Muhammad Kafrawi Yunus[5]

[1]Master of Management Program, Makassar Bongaya College of Economics, Makassar, 90131, Indonesia
[2]Departement of Management, Economic, Nuku University, Maluku Utara, 97813, Indonesia
[3]Faculty of Economics and Business, Open University, South Tangerang, Banten, 15437, Indonesia
[4]Accounting Department, Polytechnic State of Ujung Pandang, Makassar, 90245, Indonesia
[5]Department of Management, Faculty of Economic and Business, Bosowa University Makassar, 90231, Indonesia

ABSTRACT

This study develops a framework to explain household financial decision-making by examining how economic capacity and behavioral discipline jointly influence financial outcomes. While income reflects financial capacity, saving behavior represents the discipline that determines how resources are managed. Using survey data from 500 working individuals in Makassar City, Indonesia, this study applies a predictive composite modeling approach combining robust MM estimation and cross-validated regression to address non normal behavioral financial data. The results show that saving behavior strongly influences both household financial decision-making and financial risk management, and also indirectly affects financial decisions through financial risk management. Income also shows a positive but weaker effect. The interaction between income and saving behavior is statistically significant ($\beta = -0.267$, $p < 0.001$), indicating that the marginal effect of income declines as saving discipline increases. The model explains 62.8% of the variance in financial decision-making. The study introduces a capacity–discipline interaction framework and demonstrates the value of robust predictive modeling for behavioral finance research.

ARTICLE INFO

Keywords:
Household financial decision-making, Saving behavior, Financial Risk Management, Income, Behavioral household finance

Article Information:
Received: 12/03/2026
Revise: 01/06/2026
Accepted: 02/06/2026

ISSN:
2985-3168 (Online)
2985-3222 (Print)

*Corresponding Author at:
Master of Management Program, Makassar Bongaya College of Economics, Jl. Let. Jend. Mappaodang, No 28, Makassar, 90131, Indonesia
E-mail address: irfaisohilauw@stiem-bongaya.ac.id (Muhammad Irfai Sohilauw)

1. Introduction

Household financial decisions are often examined through traditional economic frameworks, where income and resource availability are assumed to be the main factors determining how funds are allocated. Conventional models suggest that higher income gives households more flexibility and improves decision-making by allowing better planning over time. However, in many emerging economies, household financial choices go beyond simple market-based optimization and are heavily influenced by social norms and cultural expectations. These external pressures create implicit obligations that can increase financial stress.

Culturally embedded expenditures, such as Mudik, the Eid al-Fitr homecoming tradition in Indonesia, illustrate this dynamic. While participation may appear voluntary, strong social expectations and collective norms often require families to allocate resources in ways that balance social participation with financial sustainability. Mudik demands substantial financial resources within a short period and reflects emotional bonds, family solidarity, and social identity. Individuals responsible for household finances must therefore carefully plan liquidity, follow disciplined budgets, and anticipate potential risks to meet these social obligations without undermining long-term financial well-being (Godase et al., 2024; Mannell et al., 2025; Warmath et al., 2022).

From a household finance perspective, culturally embedded expenditures like Mudik create a tension between fulfilling social obligations and maintaining long-term financial resilience. This tension is particularly evident for economically active individuals whose incomes are uncertain or volatile, especially those working in informal sectors. Post-pandemic patterns show that participation in Mudik varies according to perceived economic stability and financial risk exposure, suggesting that these financial decisions are shaped by the interaction of economic capacity, disciplined budgeting, and risk management ability (Alvi et al., 2025; Yeoh et al., 2025). In this study, Mudik is used as an illustrative example of culturally embedded expenditure pressures rather than a directly measured variable.

Previous research consistently identifies income and saving behavior as key predictors of financial outcomes. However, three important gaps remain. First, income and saving behavior are often treated as independent and additive predictors, assuming that higher economic capacity automatically results in better financial decisions. This approach overlooks the role of behavioral discipline in determining how effectively financial resources are used, particularly under culturally embedded expenditure pressures. Second, financial risk management is frequently viewed as an end-point outcome rather than as a mechanism that channels disciplined saving into structured financial decision-making. Third, many empirical studies rely on covariance-based models that prioritize overall fit. When survey data are ordinal or non-normal, these methods can reduce predictive accuracy and weaken the validity of estimated relationships (Ademola et al., 2025; Arsenal et al., 2025; Milyan et al., 2025; Sharma, 2024).

To address these gaps, this study proposes a framework for examining household financial decision-making by considering the interaction between income, as a measure of economic capacity, and saving behavior, as a form of behavioral discipline. Financial risk management is treated as a mediating mechanism that transforms disciplined financial behavior into structured financial decisions under normative pressures. This framework allows us to explore whether behavioral discipline shapes the marginal effect of income and whether financial risk management channels the impact of saving behavior into decision quality.

The framework draws on three complementary theories. The Life-Cycle Hypothesis (LCH) conceptualizes income as an intertemporal resource guiding consumption and saving over time (FRIEDMAN, 1957; Modigliani & Brumberg, 1954). Behavioral Life-Cycle Theory (B-LCT) emphasizes self-control and mental accounting as key factors in enabling disciplined financial allocation (Thaler & Shefrin, 1981). The Theory of Planned Behavior (TPB) highlights perceived behavioral control and intention as important determinants of structured actions under social and normative pressures (Ajzen, 1991). Together, these perspectives clarify the distinction between economic capacity, behavioral discipline, and financial risk management within a unified household finance framework.

Using survey data from 500 working adults in Makassar City, Indonesia, who represent economically active members involved in household financial management, this study contributes to the literature in three ways. First, it introduces a capacity–discipline interaction framework that shows how the marginal effect of income depends on saving discipline. Second, it clarifies the mediating role of financial risk management in turning disciplined saving into structured decisions. Third, it demonstrates the value of a robust predictive modeling approach for analyzing behavioral financial data. These findings provide new insights into household financial behavior in emerging urban economies.

2. Methodology

Research Design and Analytical Strategy

This study employs a quantitative explanatory design to examine the structural relationships among income (X_1), saving behavior (X_2), financial risk management (Y_1), and household financial decision-making (Y_2). The main goal is to identify statistically significant relationships and evaluate the stability, robustness, and predictive relevance of the proposed capacity–discipline–risk framework.

Because the study involves direct effects, mediation, and moderation, and the survey data are ordinal and non-normal, a composite-based, prediction-oriented analytical approach was used. All analyses were conducted in RStudio, which is well-suited for handling complex models with non-normal data. Rather than focusing solely on covariance reproduction or overall model fit, this study prioritizes parameter robustness, resilience to violations of distributional assumptions, and out-of-sample predictive performance (Hair et al., 2019; Shmueli, Sarstedt, et al., 2019). This approach is particularly appropriate for research on household financial behavior, where constructs measured with Likert-type scales may display skewness, kurtosis, and heteroskedasticity.

The use of a predictive and robust framework is methodologically justified for three reasons. First, the study includes interaction and mediation mechanisms that require stable coefficient estimates under non-ideal data conditions. Second, the indicators are measured on ordinal Likert scales, which violate traditional normality assumptions. Third, the study aims to produce findings that are explanatory within the sample and generalizable for predictive purposes.

The analytical procedure follows four stages. The first stage involves reliability-based construct purification to enhance internal consistency and reduce measurement noise. The second stage transforms the purified indicators into composite scores representing each construct. The third stage estimates structural relationships using multiple regression models, including mediation and moderation specifications. To handle potential

heteroskedasticity and influential observations, the main structural model was re-estimated using robust MM regression, which combines high breakdown points with strong efficiency and is suitable for non-normal behavioral data. The fourth stage evaluates model generalizability through cross-validation and hold-out prediction, assessing both predictive reliability and structural stability.

This integrated approach strengthens the credibility of the study by aligning measurement, estimation, and validation procedures with the empirical characteristics of the data. It also supports the broader goal of explaining household financial decision-making in culturally embedded contexts using a theoretically grounded and methodologically robust framework.

Sample and Data Collection

The data were collected through a structured survey in Makassar City, Indonesia, involving 500 working individuals who were economically active at the time of data collection. Respondents were selected because they represent income earners within their households and are directly involved in managing financial resources, including income allocation, saving, and risk management. While the survey focuses on individual respondents, the behaviors measured reflect household-level financial decision-making processes.

Makassar is a relevant setting for studying household financial behavior in emerging urban economies. As one of the largest economic centers in Eastern Indonesia, the city attracts a diverse workforce from across the country. Consequently, the sample includes both native residents and migrants who currently live and work in the city.

Some respondents maintain socio-economic ties with their places of origin outside Makassar. These connections often involve periodic visits and financial obligations toward family members in other regions. Such circumstances can influence financial behavior, particularly saving and risk management, as households may need to allocate resources for both local consumption and extended family obligations.

Data were collected using a structured questionnaire with items measuring income, saving behavior, financial risk management, and household financial decision-making. All items were rated on five-point Likert scales ranging from strongly disagree to strongly agree. The survey was administered directly to respondents to ensure clarity and improve response reliability.

This sampling approach reflects common characteristics of urban households in emerging economies, where internal migration and extended family obligations shape financial decision-making patterns. Focusing on economically active individuals involved in household financial management provides a suitable empirical basis for testing the proposed capacity–discipline–risk framework.

Measurement Instrument and Data Characteristics

All constructs were measured using five-point Likert scales. Ordinal survey data, such as those obtained from Likert responses, often violate the multivariate normality assumptions required by traditional covariance-based techniques (Rhemtulla et al., 2012). These deviations do not compromise the analysis when estimation methods that accommodate non-normality and emphasize robustness are employed (Norman, 2010; Shmueli, Sarstedt, et al., 2019).

The analytical strategy was therefore deliberately chosen to match the empirical characteristics of behavioral financial data, which frequently show non-normal distributions. Estimation procedures were aligned with the observed data rather than imposing strict

normality assumptions, preserving both predictive power and structural integrity despite deviations from normality.

This approach aligns with growing recognition of the need for robust methods in household financial behavior research, where skewness, kurtosis, and other non-normal patterns are common. By prioritizing parameter robustness and predictive performance over conventional global fit indices, the study produces findings that are reliable, stable, and resilient to data irregularities.

Measurement Reliability and Construct Purification

The internal consistency of the measurement instruments was first assessed using Cronbach's alpha (Cronbach, 1951). While Cronbach's alpha indicates scale consistency, the assessment was extended to include inter-item correlation analysis. This step helped identify issues such as negative or very low correlations and items that weakened construct homogeneity.

Following psychometric guidelines, a reliability-based construct purification procedure was applied before structural estimation. This step reduces measurement noise and strengthens construct validity. Refinement was conducted at the correlational level rather than relying solely on factor loadings, ensuring coherent and reliable constructs.

This purification improves construct coherence and stabilizes parameter estimates in subsequent modeling. It also ensures the measurement model aligns closely with the theoretical framework, enhancing the robustness and validity of the structural equation modeling (SEM) results.

Composite-Based Construct Operationalization

After purification, constructs were operationalized as composite indices based on the retained items. For each construct X_k, the composite score was calculated as the mean of its purified indicators:

$$X\_k = (1 / p\_k) \sum\_(i=1)^(p\_k) x\_ik$$

where p_k represents the number of retained items for construct X_k.

Operationalizing constructs as composites aligns with variance-based, prediction-oriented modeling (Shmueli, Sarstedt, et al., 2019). Unlike approaches focused on latent covariance structures, composite indices provide empirically stable representations suitable for regression-based mediation and moderation analyses. This method improves construct interpretability and reduces measurement error, supporting a robust predictive framework for examining the relationships under study.

Structural Model Specification

Structural relationships were estimated using multiple linear regression within mediation and moderation frameworks.

The first-stage mediation model was specified as:

$$Y_1 = \alpha_0 + \alpha_1 X_1 + \alpha_2 X_2 + \epsilon$$

The main structural model was specified as:

$$Y_2 = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 Y_1 + u$$

The moderation model, including the interaction term, was specified as:

$$Y_2 = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 (X_1 \times X_2) + \beta_4 Y_1 + u$$

This specification allows simultaneous examination of three key effects: the direct effects of income (X_1) and saving behavior (X_2) on financial risk management (Y_1) and household financial decision-making (Y_2), the indirect effects through financial risk management, and

the conditional effect of income at different levels of saving behavior as captured by the interaction term. The structural configuration directly reflects the capacity–discipline–risk framework.

Mediation Analysis

Indirect effects were assessed using nonparametric bootstrapping following (Preacher & Hayes, 2008). The indirect effect was calculated as:

$$IE = \alpha \times \beta$$

where α represents the effect of the independent variable on the mediator, and β represents the effect of the mediator on the dependent variable. Bootstrap confidence intervals were used to determine statistical significance, providing robust inferences for indirect effects. This method avoids assuming normality, which is important when analyzing behavioral survey data that often exhibit skewness and kurtosis.

Robust Estimation Strategy

To address heteroskedasticity and the influence of outliers, additional estimations were performed using robust regression based on MM estimators (Maronna et al., 2018; Yohai, 1987). MM estimation combines a high breakdown point with strong efficiency, providing resistance to extreme observations.

Robust estimation increases the credibility of structural parameters by minimizing the influence of distributional irregularities and outliers. This ensures that findings are not disproportionately affected by atypical cases or violations of conventional assumptions, enhancing overall result robustness.

Predictive Validation and Generalizability Assessment

Beyond in-sample estimation, predictive validation was conducted using data splitting and k-fold cross-validation. These out-of-sample procedures rigorously evaluate model quality, assessing how well the model generalizes to new data and preventing overfitting (Shmueli, Ray, et al., 2019).

Cross-validation ensures that the study evaluates not only statistical significance but also structural stability and predictive generalizability. This approach aligns with the focus on robust, explanatory modeling and ensures that the framework is relevant for similar populations or contexts beyond the initial sample.

Conceptual Framework

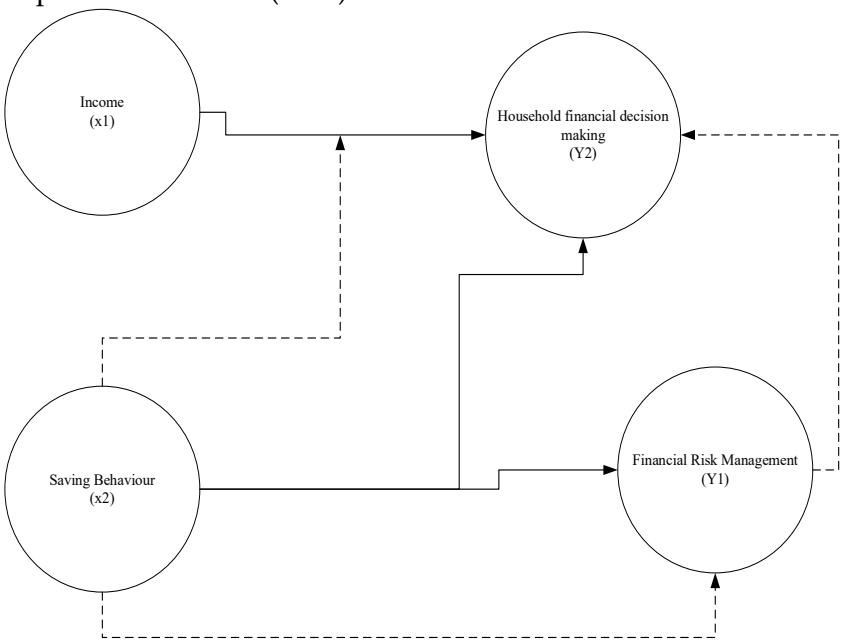
The proposed conceptual framework integrates the Life-Cycle Hypothesis, Behavioral Life-Cycle Theory, and the Theory of Planned Behavior into a unified structure for analyzing household financial decision-making. Within this framework, economic capacity, behavioral discipline, and financial risk control are conceptually distinct but interrelated dimensions shaping financial behavior.

The framework specifies three structural relationships. First, it examines the direct effects of income as economic capacity and saving behavior as behavioral discipline on household financial decision-making. Second, it incorporates a mediation pathway through financial risk management, which channels the stabilizing effect of disciplined saving into structured financial decisions. Third, it includes a moderation pathway to capture the conditional influence of income across levels of saving discipline.

By modeling mediation and moderation simultaneously, this framework goes beyond traditional linear and additive approaches in household finance research. Income functions as an enabling resource defining financial capacity, while saving behavior acts both as a

stabilizer and as a mechanism that activates effective risk management. Household financial decision-making is therefore seen as the outcome of an interdependent configuration of economic capacity, behavioral discipline, and financial risk management, particularly within culturally embedded financial contexts.

Figure 1. Conteptual Framework (2025)



Hypothesis Testing

In this section, all proposed hypotheses are tested using the processed data. The goal is to determine whether each hypothesis is supported and to provide clear interpretations of the direction and strength of relationships among the variables. The results are presented in statistical tables, accompanied by descriptive explanations to ensure easy understanding of the empirical findings.

The hypotheses for this study are formulated as follows:

- H1: Income positively influences financial decision-making within households.
- H2a: Saving behavior positively influences financial decision-making within households.
- H2b: Saving behavior positively influences financial risk management.
- H3: Financial risk management mediates the relationship between saving behavior and financial decision-making within households.
- H4: Saving behavior moderates the relationship between income and financial decision-making within households.

Analytical Tools

All data processing in this study was conducted using RStudio, which allows for advanced statistical analyses, including regression, mediation, and moderation. Microsoft Excel was used for data preparation and cleaning, including variable coding, checking for missing values, and formatting datasets. This combination of tools ensured that the data were systematically prepared for analysis and that the results could be interpreted accurately and reliably.

3. Result and Discussion

Result

Data Screening and Distributional Properties

Shapiro–Wilk tests indicated significant deviations from normality for all observed items ($p < 0.05$), which is consistent with the ordinal characteristics of Likert-scale survey measurements. Such deviations are common in behavioral finance research where respondent perceptions and attitudes are captured through ordinal scales (Rhemtulla et al., 2012).

To address these distributional properties, the analysis employed robust and prediction-oriented estimation techniques. Robust MM estimation was used in the structural model to produce stable parameter estimates and reliable inference under non-normal conditions (Hair et al., 2019; Norman, 2010). This approach improves the robustness of the results and preserves the stability of structural relationships despite violations of normality assumptions. Detailed normality diagnostics are reported in Appendix B. Operational definitions for all constructs and measurement indicators are provided in Appendix H.

Reliability Analysis and Construct Refinement

Internal Consistency

Internal consistency reliability was evaluated using Cronbach's alpha coefficients:

- Income (X_1): $\alpha = 0.759$
- Saving behavior (X_2): $\alpha = 0.835$
- Financial risk management (Y_1): $\alpha = 0.814$
- Household financial decision-making (Y_2, initial specification): $\alpha = 0.565$

The relatively low reliability of the initial Y_2 construct indicated heterogeneity among its indicators and suggested potential multidimensionality within the measurement items.

Construct Purification

Inter-item correlation analysis revealed weak and negative correlations among several Y_2 indicators. After examining the correlation structure and item contributions, indicators Y23–Y25 were removed during the purification process. The refined construct (Y_2_clean) retained indicators Y21 and Y22 and demonstrated improved internal consistency with Cronbach's alpha of 0.822.

This refinement enhanced measurement homogeneity and internal coherence. The retained indicators capture the normative–emotional dimension of household financial decision-making. Therefore, the empirical results reported in this study should be interpreted as reflecting this normative–emotional dimension rather than the full multidimensional construct of household financial decision-making. Detailed reliability diagnostics and purification procedures are provided in Appendix C.

Structural Estimation

Mediation Stage

In the first-stage mediation model, both saving behavior (X_2) and income (X_1) significantly predicted financial risk management (Y_1). Saving behavior exhibited the stronger effect, while income demonstrated a smaller but still statistically significant contribution.

The model explained approximately 51.5% of the variance in financial risk management ($R^2 = 0.515$), highlighting the importance of behavioral discipline in translating economic capacity into structured financial risk management practices.

Baseline Structural Model (OLS Estimation)

In the baseline structural model, income (X_1), saving behavior (X_2), and financial risk management (Y_1) all significantly predicted household financial decision-making (Y_2_clean). Saving behavior showed the strongest standardized coefficient among the predictors, emphasizing its dominant role in explaining household financial decision quality.

The model explained 53.8% of the variance in household financial decision-making (R^2 = 0.538).

Moderated Structural Model (Robust MM Estimation)

To account for potential violations of classical assumptions and improve robustness, the moderated structural model was estimated using robust MM regression. The results revealed a statistically significant interaction between income (X_1) and saving behavior (X_2) (β = −0.267, $p < 0.001$).

The inclusion of the interaction term substantially increased the explanatory power of the model, with adjusted R^2 rising to 0.628**.**

This finding indicates that the influence of income on household financial decision-making is contingent on the level of saving discipline. In other words, economic capacity alone is insufficient to produce high-quality financial decisions without behavioral discipline. Detailed results are reported in Appendix E2 and the interaction effects are illustrated in Figure A1.

Mediation Analysis

Mediation analysis was conducted using nonparametric bootstrapping with 1,000 resamples. The results revealed a statistically significant indirect effect of saving behavior (X_2) on household financial decision-making through financial risk management (Y_1). This finding indicates partial mediation, suggesting that disciplined saving behavior influences decision quality partly through improved risk management practices.

For income (X_1), the mediation pathway through financial risk management was statistically significant but negative, indicating that the direct effect of income on household financial decision-making remains dominant.

These results suggest that financial risk management functions as an important behavioral transmission mechanism linking saving discipline to financial decision outcomes. Detailed mediation results are reported in Appendix E3 and illustrated in Figure A2.

Effect Sizes

Effect sizes were evaluated using Cohen's f^2 statistics:

- Saving behavior (X_2): $f^2 = 0.524$ (large effect)
- Income (X_1): $f^2 = 0.201$ (medium effect)
- Financial risk management (Y_1): $f^2 = 0.056$ (small effect)
- Interaction ($X_1 \times X_2$): $f^2 = 0.074$ (small-to-moderate effect)

These results confirm that saving behavior is the strongest predictor in the model, emphasizing the central role of behavioral discipline in shaping household financial decision outcomes. Detailed calculations are provided in Appendix E2.

Robustness and Predictive Validation

Robust MM estimation was applied to address potential heteroskedasticity and outlier influence. The robust model produced coefficient patterns consistent with OLS estimates, confirming the stability of the results.

The Durbin–Watson statistic was 2.11 ($p > 0.05$), indicating no evidence of residual autocorrelation (Appendix F2).

To assess predictive performance, a 70/30 hold-out validation was implemented. The model achieved a root mean squared error (RMSE) of 0.715. In addition, five-fold cross-validation produced a mean RMSE of 0.680 and MAE of 0.570**.**

These predictive validation results indicate a low risk of overfitting and acceptable out-of-sample generalizability. Detailed validation statistics are provided in Appendix F3.

Hypothesis

Table 1. Hypothesis Result

Hypothesis	Relationship	Result	Statistic
H1	Income (X_1) → Household Financial Decision-Making (Y_2)	Supported	$\beta = 0.398$, $p < 0.001$
H2a	Saving Behavior (X_2) → Household Financial Decision-Making (Y_2)	Supported	$\beta = 0.604$, $p < 0.001$
H2b	Saving Behavior (X_2) → Financial Risk Management (Y_1)	Supported	$\beta = 0.520$, $p < 0.001$
H3	Financial Risk Management mediates Saving Behavior → Y_2	Supported	ACME = −0.111, $p < 0.001$
H4	Saving Behavior moderates Income → Y_2	Supported	$\beta = -0.267$, $p < 0.001$

All proposed hypotheses are supported. Income positively influences both household financial decision-making and financial risk management, indicating that economic capacity contributes to financial planning and risk management practices. Saving behavior strongly influences both financial risk management and household financial decision-making, highlighting the central role of saving discipline in shaping household financial outcomes. Financial risk management mediates the relationship between saving behavior and household financial decision-making. The mediation effect is statistically significant, although the indirect coefficient is negative because the estimated path from financial risk management to household financial decision-making is negative in the structural model. This indicates that disciplined saving behavior improves financial outcomes partly through structured risk management practices. Moderation analysis further shows that the impact of income on financial decisions depends on the level of saving discipline, suggesting that behavioral discipline conditions how economic capacity is translated into household financial decisions.

Novelty of the Study

This study highlights the dual role of saving behavior in household financial decision-making. First, saving behavior directly influences decision quality, making it a dominant predictor of household financial outcomes. Second, it moderates the relationship between income and decision-making, showing that higher income alone does not guarantee better financial decisions without disciplined saving behavior.

This dual role provides a more nuanced understanding of economic capacity and behavioral discipline. Income represents available financial resources, while saving behavior determines how effectively those resources are utilized. The findings suggest that economic resources alone are insufficient for optimal outcomes. Individuals managing household finances must demonstrate disciplined saving to fully leverage their financial capacity.

The study also challenges simplified interpretations of the Life-Cycle Hypothesis. While income provides capacity, it does not automatically improve financial risk management or decision-making. Instead, consistent saving and prudent risk management are more critical for quality decisions. Individuals with weak discipline may remain financially vulnerable despite relatively high income.

Furthermore, this research emphasizes the interaction between income and behavior, bridging traditional economic models and behavioral finance perspectives that highlight psychological mechanisms such as self-control and mental accounting (Thaler & Shefrin, 1981).

Finally, the findings underscore the role of social and cultural contexts. In emerging urban economies like Indonesia, household financial responsibilities often extend to extended family networks. This complexity influences saving, risk management, and decision-making,

Discussion

Income and Financial Decision-Making within Households

The findings indicate that income (X_1) significantly improves household financial decision-making (Y_2) ($\beta = 0.398$, $p < 0.001$). Higher income expands the financial capacity available for planning, saving, and managing expenditures, thereby supporting better household financial decisions. Income also positively influences financial risk management (Y_1) ($\beta = 0.301$, $p < 0.001$), although the magnitude of this effect is smaller than that of saving behavior. This suggests that while economic resources facilitate financial risk management, disciplined financial behavior remains the more influential factor in shaping effective household financial decisions.

Practically, individuals with higher income are more likely to engage in structured financial planning, allocating resources for consumption, saving, and investment, which improves household financial stability. Income represents the economic capacity that allows for more organized financial decisions. However, higher income alone does not automatically guarantee optimal financial management. Achieving prudent financial strategies also requires behavioral discipline, financial literacy, and long term planning capabilities.

These findings are consistent with the Life Cycle Hypothesis, which suggests that individuals organize consumption and saving to smooth consumption across life stages (Nahricheraghtapeh, 2025; Peterman & Sager, 2022). Individuals save when income exceeds expected lifetime needs and borrow when it falls short. Income therefore influences decisions on saving, borrowing, and investing, shaping household resource allocation over time (Kundu & Das, 2022; Shah et al., 2021).

Empirical evidence also shows that stable income facilitates saving and investment for future financial security, whereas volatile income may lead to precautionary saving or reliance on debt (Broqueza, 2025; Kachepa & Mumtaz, 2023; Sun & Xiong, 2023). Financial literacy and long term planning skills are critical in converting income into effective financial decisions (Ali & Marwat, 2021; Bandi et al., 2025).

Although income positively contributes to financial risk management, its influence is weaker than that of saving behavior. This indicates that financial resources alone are not sufficient to ensure effective financial strategies. Behavioral factors, financial discipline, and self control influence whether income is translated into effective financial management practices.

Overall, H1 is supported. Income provides the economic capacity for planning, saving, and investing, and it also contributes to financial risk management. However, the results indicate

that behavioral discipline reflected in saving behavior plays a more influential role in shaping effective household financial outcomes.

Saving Behavior and Financial Decision-Making within Households

Saving behavior (X_2) has a strong and statistically significant effect on household financial decision-making (Y_2), with a regression coefficient of $\beta = 0.604$ ($p < 0.001$). It also exhibits the largest standardized coefficient in the structural model ($\beta \approx 0.69$), indicating its dominant influence among the predictors. Individuals who practice disciplined saving tend to allocate financial resources more systematically for household needs while maintaining preparedness for both expected and unexpected financial obligations.

In addition, saving behavior significantly predicts financial risk management (Y_1) ($\beta_2 = 0.520$, $p < 0.001$), suggesting that disciplined saving practices contribute to the development of structured risk management within households.

These results are consistent with the Behavioral Life-Cycle Theory, which extends the Life-Cycle Hypothesis by including psychological factors such as self-control, mental accounting, and behavioral biases (Thaler & Shefrin, 1981). While income alone may enable saving, disciplined saving depends on self-control, planning ability, and financial literacy, which allow individuals to translate resources into long-term financial resilience (Ali & Marwat, 2021; Bandi et al., 2025).

Empirical evidence indicates that saving behavior is influenced by income stability, lifetime resource expectations, and access to financial instruments. Stable income facilitates the accumulation of savings, while debt obligations, liquidity constraints, and household responsibilities can redirect resources toward short-term needs (Gomes et al., 2021; Gupta et al., 2022; Kachepa & Mumtaz, 2023). Behavioral factors, including present bias, time preferences, and intra-household dynamics, further shape saving decisions (Bawalle et al., 2024; Białowolski et al., 2024; Chawla & Svec, 2023).

In cultural contexts such as Indonesia, where social and family obligations are strong, disciplined saving is particularly important. Consistent saving allows individuals to meet social commitments without compromising long-term financial stability. These findings support H2a, confirming that saving behavior is central to household financial resilience and decision quality.

Saving Behavior and Financial Risk Management

Saving behavior (X_2) also significantly predicts financial risk management (Y_1) ($\beta = 0.520$, $p < 0.001$). This finding suggests that disciplined saving behavior functions as a behavioral mechanism that strengthens household resilience to income volatility and unexpected economic shocks. By accumulating precautionary savings and maintaining liquidity buffers, households are better positioned to stabilize their financial conditions and manage financial risks more effectively.

These results align with Behavioral Life-Cycle Theory, emphasizing that saving behavior reflects discipline, financial literacy, and long-term planning (Thaler & Shefrin, 1981). Income enables saving, but translating resources into effective risk management depends on how savings are allocated and managed (Broqueza, 2025; Kachepa & Mumtaz, 2023; Sun & Xiong, 2023).

Saving behavior is also influenced by expectations of future income, risk tolerance, and access to financial instruments. While higher and more stable income generally supports precautionary savings, liquidity constraints and perceived risks may redirect resources to

immediate consumption (Kopylyuk & Muzychka, 2021; Rani & Sharma, 2024; Xu & Steiner, 2025). Financial literacy and planning skills enhance saving discipline and strengthen risk management capacity (Gomes et al., 2021; Mehmood et al., 2022). Behavioral characteristics such as time preference and hyperbolic discounting further influence financial outcomes (Bawalle et al., 2024; Parra et al., 2021; Xu & Steiner, 2025).

Overall, H2b is supported. Saving behavior strengthens financial risk management by enabling structured financial decisions and resilience to economic uncertainty. Income alone does not guarantee risk mitigation; behavioral discipline and financial knowledge are essential.

Financial Risk Management as a Mediator

Saving behavior also exhibited a significant indirect effect on household financial decision-making through financial risk management (ACME = −0.111, $p < 0.001$), indicating the presence of mediation. This result suggests that disciplined saving behavior influences financial decision-making partly through the development of structured financial risk management practices. However, the negative sign of the indirect effect reflects the negative relationship between financial risk management and financial decision-making in the model. In other words, households that maintain consistent saving habits tend to adopt more systematic approaches to managing financial risks, which subsequently shape their financial decision-making processes.

Income also exhibits a statistically significant indirect effect on household financial decision-making through financial risk management (ACME = −0.064, $p < 0.001$). The negative direction of this indirect effect indicates that although higher income improves financial risk management, stronger risk management practices are associated with more cautious financial strategies, which temper the direct influence of income on financial decision-making.

Within the Behavioral Life Cycle perspective, saving behavior shaped by self control, financial literacy, and income dynamics influences how households allocate precautionary savings, risk bearing assets, and liquidity buffers (Bawalle et al., 2024; Mayorova, 2025; Rani & Sharma, 2024). Individuals with strong saving discipline and access to financial instruments are more likely to implement effective financial risk strategies, reducing impulsive decisions and supporting more stable financial planning.

Thus, H3 is supported. Financial risk management functions as a behavioral transmission mechanism through which disciplined saving behavior improves the quality of household financial decision-making.

Saving Behavior as a Moderator

The interaction between income and saving behavior was statistically significant ($\beta_3 = -0.267$, $p < 0.001$). The model's adjusted R^2 increased from 0.538 to 0.628 after including the interaction term, indicating that the effect of income on household financial decision-making depends on the level of saving discipline. When saving discipline is strong, the marginal impact of income becomes weaker because disciplined financial management reduces reliance on income alone in shaping financial decisions. Conversely, when saving discipline is weak, income becomes a more influential determinant of household financial decisions.

This finding highlights the interaction between economic capacity and behavioral discipline. Income determines the potential resources available for saving, investment, and risk management, whereas behavioral discipline—shaped by financial literacy, self-control, and

financial planning—determines whether this potential is translated into effective financial decisions (Boontun et al., 2024; Sahputra, 2026; Triberti, 2022; Yoon & Hanna, 2024). In practice, cultural norms, extended family obligations, and access to financial instruments may further shape how these factors interact within household financial management.

Overall, H4 is supported**.** The interaction demonstrates that income and saving behavior complement each other in shaping household financial decisions. Policies aimed at improving household financial stability should therefore focus not only on increasing income opportunities but also on strengthening saving discipline and financial capability.

4. Conclusion and Suggestion

Conclusion

The findings of this study indicate that saving behavior, particularly disciplined saving, plays a central role in shaping both household financial decision-making and financial risk management among individuals responsible for managing household finances. Income also positively influences financial decision-making and financial risk management. However, the magnitude of its effect is smaller than that of saving behavior, suggesting that economic capacity alone is not sufficient to ensure effective financial outcomes. While income provides financial resources, the effective management of these resources depends strongly on behavioral discipline, financial literacy, and long-term financial planning.

Saving behavior directly improves household financial decision-making and significantly strengthens financial risk management. Individuals who consistently practice disciplined saving are better able to build precautionary financial buffers, manage economic uncertainty, and make structured, forward-looking financial decisions that support long-term household financial stability. These results suggest that financial resilience is driven more strongly by disciplined saving behavior than by income alone.

Financial risk management was also found to mediate the relationship between saving behavior and financial decision-making. The mediation is statistically significant, although the indirect coefficient is negative because the estimated relationship between financial risk management and household financial decision-making in the model is negative. This indicates that disciplined saving improves financial outcomes partly through the development of effective risk management practices. Households with consistent saving habits tend to adopt more systematic approaches to managing financial risks, which subsequently improves the quality of financial decisions. Income also exhibits an indirect effect on household financial decision-making through financial risk management. However, the negative direction of this indirect effect indicates that stronger financial risk management practices may temper the direct influence of income by encouraging more cautious and structured financial strategies.

In addition, saving behavior moderates the relationship between income and household financial decision-making. Individuals with strong saving discipline rely less on income alone when making financial decisions, whereas those with weaker saving habits depend more heavily on income levels to guide their financial choices. This finding demonstrates the complementary relationship between economic capacity and behavioral discipline in shaping financial outcomes.

Overall, the results emphasize that disciplined saving plays a more critical role than income alone in supporting household financial stability and resilience. The study highlights the

multidimensional role of saving behavior as a determinant, mediator, and moderator within the household financial decision-making process, offering a more comprehensive understanding of how economic resources and behavioral discipline jointly influence financial outcomes.

Suggestions

For individuals responsible for managing household finances, strengthening saving discipline should be a central component of financial planning. Structured budgeting practices that prioritize regular saving alongside daily consumption can improve the quality of financial decision-making. Consistently allocating a portion of income to savings allows households to build precautionary financial buffers, which help reduce vulnerability to income volatility and unexpected financial shocks.

Integrating financial risk management into everyday financial decisions is also essential. This includes maintaining emergency funds, managing liquidity, and preparing contingency plans for potential financial disruptions. Such practices support more structured financial management and enable households to maintain financial stability even under uncertain economic conditions.

For financial institutions and policymakers, financial programs and policy initiatives should not only focus on increasing income opportunities but also on strengthening saving discipline and financial capability. Financial literacy initiatives should emphasize behavioral aspects of financial management, including consistent saving habits, budgeting discipline, and proactive risk management. These behavioral factors play an important role in translating financial resources into effective financial outcomes.

Financial institutions can further support responsible financial behavior by offering accessible and structured saving instruments, such as automatic savings accounts, commitment-based saving programs, and long-term saving incentives. By providing these tools and supportive financial systems, policymakers and financial institutions can encourage disciplined saving behavior, strengthen household financial resilience, and improve the quality of financial decision-making over time.

Implications

The study provides several theoretical insights. First, the findings reinforce the integration of the Life Cycle Hypothesis (LCH) and Behavioral Life Cycle Theory (B LCT). While the LCH emphasizes economic capacity, including income and lifetime resources, the results of this study show that behavioral discipline reflected in saving behavior plays a more influential role in shaping financial outcomes. Income contributes to both financial decision making and financial risk management, but disciplined saving behavior more strongly determines how financial resources are utilized in practice.

The findings are also consistent with the Theory of Planned Behavior and Prospect Theory. Financial risk management is influenced not only by economic resources but also by behavioral factors such as self control, planning discipline, and risk perception. The significant role of saving behavior indicates that financial decisions are shaped by behavioral intentions and perceived control over financial actions. This highlights the importance of behavioral mechanisms in determining how households respond to financial opportunities and risks.

From a methodological perspective, the use of a moderated mediation model allows the simultaneous examination of interaction effects and underlying behavioral mechanisms. This

approach provides a more comprehensive framework for understanding household financial behavior by capturing both the mediating role of financial risk management and the moderating role of saving discipline in the relationship between income and financial decision making. The application of bootstrapping procedures further strengthens the reliability of indirect effect estimates and improves the robustness of the findings, which is particularly valuable for behavioral research based on ordinal or non normal survey data.

Novelty

This study contributes to the literature on household financial behavior in several ways. First, it demonstrates the central role of saving behavior as a dominant predictor and moderator of financial outcomes within households. Saving behavior strongly influences household financial decision making and financial risk management, while also moderating the relationship between income and financial decisions. This finding provides deeper insight into how economic capacity and behavioral discipline interact in shaping financial outcomes.

Second, the findings indicate that although income positively contributes to financial decision making and financial risk management, its influence is weaker than that of saving behavior. This suggests that economic capacity alone is not sufficient to ensure effective financial management. Behavioral discipline, particularly consistent saving behavior, plays a more critical role in determining how financial resources are managed and allocated within households.

Third, the study highlights the interaction between economic and behavioral factors in household financial decision making. By examining how income and saving behavior jointly influence financial outcomes, the study integrates traditional economic perspectives with behavioral finance approaches. This provides a more comprehensive framework for understanding real world household financial behavior, where financial resources and behavioral discipline operate together in shaping financial decisions.

Limitiations

This study has several limitations. First, the use of cross sectional data limits the ability to establish causal relationships among income, saving behavior, financial risk management, and household financial decision making. Although the statistical analysis identifies significant relationships among these variables, longitudinal studies would be valuable for observing how saving behavior and financial outcomes evolve over time and for capturing dynamic changes in household financial behavior.

Second, contextual factors such as cultural norms, extended family obligations, and traditions such as mudik may influence financial behavior among household financial decision makers. These contextual characteristics can shape spending priorities, saving patterns, and risk management practices, which may affect how financial decisions are made within households. As a result, these contextual elements may limit the generalizability of the findings beyond the local context of Makassar City, Indonesia.

Third, the study focuses on respondents within a specific geographic and socio economic setting. Variations in regional economic conditions, income distribution, financial literacy, and access to financial institutions may influence household financial behavior in different contexts. Future research could expand the analysis to multiple regions or countries in order to examine whether the relationships identified in this study remain consistent across broader economic and cultural environments.

Future Research

Future research could examine the long term impact of saving behavior on wealth accumulation and household financial stability using longitudinal data. Such an approach would help clarify the dynamic relationship between disciplined saving, financial risk management, and financial decision making across different life stages. Longitudinal analysis could also provide stronger evidence regarding how behavioral discipline contributes to sustained financial resilience over time.

Further studies could investigate the role of financial literacy and access to digital financial services as potential moderating or mediating variables. These factors may influence how individuals transform economic resources into effective financial decisions, particularly in increasingly digital financial environments where access to financial tools and information can shape saving behavior and risk management practices.

Comparative studies across regions or countries would also be valuable for determining whether the relationships identified in this study are context specific or broadly applicable across different economic and cultural environments. Differences in financial infrastructure, institutional support, and cultural attitudes toward saving may affect how income, saving behavior, and financial risk management interact in shaping household financial decisions.

Finally, incorporating additional psychological and social variables, such as risk preferences, perceived financial security, social pressure, and life satisfaction, could provide a more comprehensive understanding of household financial behavior. Including these variables would allow future research to further integrate economic and behavioral perspectives in explaining how individuals responsible for household finances make financial decisions.

Reference

Acerenza, S., & Gandelman, N. (2019). Culture is a luxury in Latin America. *Estudios de Economía*, *46*(1), 125–148. https://doi.org/10.4067/S0718-52862019000100125

Ademola, A., Kazeem, B., & Oladejo, T. M. (2025). Examining the Drivers of Savings Behavior among Women Entrepreneurs in Nigeria. *Indonesian Journal of Management*, *24*(2), 257–269. https://doi.org/10.25124/jmi.v24i2.8224

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Akinkoye, E. Y., & Bankole, O. E. (2020). Assessment of Cognitive Errors on Investor's Decision Making in Nigeria. *The International Journal of Business & Management*, *8*(2). https://doi.org/10.24940/theijbm/2020/v8/i2/BM2002-048

Ali, M. S., & Marwat, I. U. K. (2021). Financial Literacy and Saving Behavior of Private Sector Employees in Pakistan: Examining the Mediating Role of Self-Efficacy. *Journal of Management Sciences*, *8*(2), 39–54. https://doi.org/10.20547/jms.2014.2108204

Alvi, A., Ali, A., Paracha, A. N., & Mangrio, K. B. (2025). FinTech Innovations and Financial Inclusion: Digital Credit, Micro-Lending, and Poverty Alleviation. *Inverge Journal of Social Sciences*, *4*(4), 143–155. https://doi.org/10.63544/ijss.v4i4.186

Arfaoui, F., Kammoun, I., & Ben Slimene, I. (2024). Ten years after the Jasmine Revolution: do social audits matter for investment and credit-granting decision-making? *EuroMed Journal of Business*, *19*(4), 995–1015. https://doi.org/10.1108/EMJB-04-2022-0076

Arsenal, X. P. M. A., Alcoriza, K. C. S., Lanorias, N. K. S., Aquino, Z. A. R., & Fonellera, R. M. L. (2025). Managing Finances: The Lived Experiences of Working Students. *International Multidisciplinary Research Journal*, *7*(3). https://doi.org/10.54476/ioer-imrj/034768

Bandi, V., Dagadu, S., Dal, V., Rautela, G., & Kale, M. N. (2025). Optimum Finance - Personal Finance

Management Using LLM. *International Journal of Engineering Applied Sciences and Technology*, *09*(11), 62–66. https://doi.org/10.33564/ijeast.2025.v09i11.010

Bawalle, A. A., Lal, S., Nguyen, T. X. T., Khan, M. S. R., & Kadoya, Y. (2024). Navigating Time-Inconsistent Behavior: The Influence of Financial Knowledge, Behavior, and Attitude on Hyperbolic Discounting. *Behavioral Sciences*, *14*(11), 994. https://doi.org/10.3390/bs14110994

Białowolski, P., Cwynar, A., & Weziak-Bialowolska, D. (2024). The role of financial literacy in reducing financial distress: What if consumers were perfectly financially literate? *Journal of Consumer Affairs*, *58*(4), 946–975. https://doi.org/10.1111/joca.12605

Boontun, P., Buddhawongsa, P., Leurcharusmee, S., & Guntawongwan, K. (2024). The Role of Behavioral Economic Factors on Saving Decision: The Case of Gen-Y in Thailand. *Economics and Business Administration Journal Thaksin University*, *16*(3), 163–180. https://doi.org/10.55164/ecbajournal.v16i3.265763

Broqueza, V. (2025). Factors Influencing Spending Decision Among Non-Teaching Employees at Surigao Del Norte State University (SNSU) City Campus. *Fisdnte*, *1*(2), 16–28. https://doi.org/10.69481/fisdnte

Chawla, I., & Svec, J. (2023). Household Savings and Present Bias Among Chinese Couples: A Household Bargaining Approach. *Journal of Consumer Affairs*, *57*(1), 648–672. https://doi.org/10.1111/joca.12516

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, *16*(3), 297–334. https://doi.org/10.1007/BF02310555

Deaton, A. (1992). *Understanding consumption*. Oxford University Press.

Deeming, C. (2009). Determining Semi-Normative Poverty Lines Using Social Survey Data. *Social Policy & Administration*, *43*(3), 270–289. https://doi.org/10.1111/j.1467-9515.2009.00661.x

Ferrer-Rosell, B., Coenders, G., & Martínez-Garcia, E. (2015). Determinants in Tourist Expenditure Composition — The Role of Airline Types. *Tourism Economics*, *21*(1), 9–32. https://doi.org/10.5367/te.2014.0434

Fisher, P. J. (2010). Gender differences in personal saving behaviors. *Journal of Financial Counseling and Planning*, *21*(1), 14–24. http://6aa7f5c4a9901a3e1a1682793cd11f5a6b732d29.gripelements.com/pdf/volume_21_issue_1/pattiejfisher.pdf

Flodén, M. (2006). Labour Supply and Saving Under Uncertainty. *The Economic Journal*, *116*(513), 721–737. https://doi.org/10.1111/j.1468-0297.2006.01108.x

FRIEDMAN, M. (1957). The Permanent Income Hypothesis. In *Theory of the Consumption Function* (pp. 20–37). Princeton University Press. http://www.jstor.org/stable/j.ctv39x7zh.6

Fulford, S. (2014). How Important is Variability in Consumer Credit Limits? *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2512448

Gan, L., & Kay, S. R. (2025). Impacts of Financial Knowledge and Health on Household Savings Behavior: *Applied Finance Letters*, *14*, 58–79. https://doi.org/10.24135/afl.v14i.962

Godase, R., P, J., & Supriya, M. L. (2024). Financial planning propensity in working adults: exploring the role of media. *Managerial Finance*, *50*(2), 313–328. https://doi.org/10.1108/MF-04-2023-0253

Gomes, F., Haliassos, M., & Ramadorai, T. (2021). Household Finance. *Journal of Economic Literature*, *59*(3), 919–1000. https://doi.org/10.1257/jel.20201461

Grzywińska-Rąpca, M. (2025). MICROECONOMIC DETERMINANTS OF THE FINANCIAL SITUATION OF POLISH FARM HOUSEHOLDS. *Annals of the Polish Association of Agricultural and Agribusiness Economists*, *XXVII*(4), 85–98. https://doi.org/10.5604/01.3001.0055.4534

Gupta, S., Yagnaraman, D., & Jagati, A. (2022). An Endless Bargain: A Participatory Approach to Understanding Intra-Household Finance. *Journal of Emerging Market Finance*, *21*(3), 291–316. https://doi.org/10.1177/09726527221080681

Hair, J., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2019). *A Primer on Partial Least Squares Structural*

Equation Modeling (PLS-SEM).

HORIOKA, C. Y. (2019). ARE THE JAPANESE UNIQUE? EVIDENCE FROM SAVING AND BEQUEST BEHAVIOR. *The Singapore Economic Review*, *64*(01), 5–22. https://doi.org/10.1142/S0217590817430020

Jabłonkowska, J. B., & Stankiewicz, B. (2018). The low – budgeting concept of backpacking. *European Journal of Service Management*, *26*, 123–129. https://doi.org/10.18276/ejsm.2018.26-15

Javed, M. K., Sohail Tahir, M., Ahmad, J., Wasaya, A., Ahmed, A. U., Orangzab, Irfan Chani, M., & Ahmed, M. (2025). A model of sustainable entrepreneurial behavior. *Tourism and Hospitality Research*, *25*(4), 652–667. https://doi.org/10.1177/14673584241263029

Kachepa, P., & Mumtaz, M. Z. (2023). What factors influence household financial decisions in Malawi? *African Journal of Economic and Management Studies*, *14*(4), 741–756. https://doi.org/10.1108/AJEMS-11-2022-0470

Karonen, E., & Niemelä, M. (2022). Necessity-Rich, Leisure-Poor: The Long-Term Relationship Between Income Cohorts and Consumption Through Age-Period-Cohort Analysis. *Journal of Family and Economic Issues*, *43*(3), 599–620. https://doi.org/10.1007/s10834-021-09781-5

Katsuura, M. (2012). Lead–lag relationship between household cultural expenditures and business cycles. *Journal of Cultural Economics*, *36*(1), 49–65. https://doi.org/10.1007/s10824-011-9155-1

Kerr, J. M., Bum, T., Lapinski, M. K., Liu, R. W., Lu, Z., & Zhao, J. (2019). The effects of social norms on motivation crowding: experimental evidence from the Tibetan Plateau. *International Journal of the Commons*, *13*(1), 430. https://doi.org/10.18352/ijc.882

Khanal, A. R., Mishra, A. K., & Nedumaran, S. (2019). Consumption, habit formation, and savings: Evidence from a rural household panel survey. *Review of Development Economics*, *23*(1), 256–274. https://doi.org/10.1111/rode.12536

Kitayama, S., & Park, H. (2007). Cultural Shaping of Self, Emotion, and Well-Being: How Does It Work? *Social and Personality Psychology Compass*, *1*(1), 202–222. https://doi.org/10.1111/j.1751-9004.2007.00016.x

Koon, O., Chan, R. Y. K., & Sharma, P. (2020). Moderating effects of socio-cultural values on pro-environmental behaviors. *Marketing Intelligence & Planning*, *38*(5), 603–618. https://doi.org/10.1108/MIP-10-2019-0534

Kopylyuk, O., & Muzychka, O. M. (2021). Conceptual Approaches to the Transformation of Household Savings Into Investment. *Business Inform*, *6*(521), 65–71. https://doi.org/10.32983/2222-4459-2021-6-65-71

Kundu, K., & Das, J. K. (2022). Financial Literacy Among Working Women Â€“ a Study in West Bengal. *Research Bulletin*, 95–112. https://doi.org/10.33516/rb.v48i1-2.95-112p

Kurniawati, A. D., & Syamsuddin, M. M. (2025). Rational Choice Theory as a Philosophical Basis for Voluntary Disclosure of Anti-Fraud Policy. *Asia Pacific Fraud Journal*, *10*(2), 323–335. https://doi.org/10.21532/apfjournal.v10i2.414

Mannell, K., Boyle, E., Kennedy, J., & Holcombe-James, I. (2025). 'Taking the router shopping': How low-income families experience, negotiate, and enact digital dis/connections. *New Media & Society*, *27*(7), 4109–4126. https://doi.org/10.1177/14614448241234941

Maronna, R. A., Martin, R. D., Yohai, V. J., & Salibián-Barrera, M. (2018). *Robust Statistics*. Wiley. https://doi.org/10.1002/9781119214656

Mayorova, T. (2025). Determinants of Household Financial Behavior and a Model of Their Influence on Financial Decision-Making. *Financial and Credit Activity Problems of Theory and Practice*, *6*(65), 73–89. https://doi.org/10.55643/fcaptp.6.65.2025.4975

Mehmood, A., Subhan, S., Noor, F., & Shah, S. A. A. (2022). Financial Factors and Saving Behavior of Salaried Class: A Case Study of Rawalpindi, Pakistan. *Journal of Management Info*, *9*(3), 284–298. https://doi.org/10.31580/jmi.v9i3.2627

Milyan, M., Sitti Rahmatyah, & Yunila, Y. (2025). Women's Agency in Micro Enterprises and Strategies

for Family Economic Survival. *Journal of Law, Social Science and Management*, *2*(2), 112–120. https://doi.org/10.36685/jlssm.v2i2.1558

Mishra, A. K., & Chang, H. (2009). Factors affecting precautionary savings of self-employed farm households. *Agricultural Finance Review*, *69*(3), 300–313. https://doi.org/10.1108/00021460911002680

Modigliani, F., & Brumberg, R. (1954). Utility analysis and the consumption function: An interpretation of cross-section data. In K. Kurihara (Ed.), *Post-Keynesian economics* (pp. 388–436). Rutgers University Press.

Nahricheraghtapeh, M. (2025). Analyzing Financial Literacy Indicators for Children Aged 10 to 12 Within the Framework of Islamic Economic Education. *Dynamic Management in Business Analysis*, *4*(1), 17–34. https://doi.org/10.61838/dmbaj.172

Norman, G. (2010). Likert scales, levels of measurement and the "laws" of statistics. *Advances in Health Sciences Education*, *15*(5), 625–632. https://doi.org/10.1007/s10459-010-9222-y

Obenour, W. L. (2004). Understanding the meaning of the 'journey' to budget travellers. *International Journal of Tourism Research*, *6*(1), 1–15. https://doi.org/10.1002/jtr.466

Parra, C. M., Poudel, R., & Sutherland, M. T. (2021). Towards an Understanding of Low-Income Individuals' Financial Resiliency: Exploration of Risk Preferences, Personality Traits, and Savings Behavior. *Journal of Economics and Behavioral Studies*, *13*(5(J)), 32–54. https://doi.org/10.22610/jebs.v13i5(j).3219

Penne, T., Cornelis, I., & Storms, B. (2020). All we need is… Reference Budgets as an EU Policy Indicator to Assess the Adequacy of Minimum Income Protection. *Social Indicators Research*, *147*(3), 991–1013. https://doi.org/10.1007/s11205-019-02181-1

Peterman, W. B., & Sager, E. (2022). Optimal Public Debt With Life Cycle Motives. *American Economic Journal Macroeconomics*, *14*(4), 404–437. https://doi.org/10.1257/mac.20180247

Phan, K. L., Chen, S.-H., Pai, W.-T., Lee, J., & Hsieh, C.-J. (2025). How Travel-Related Factors and the Socioeconomic Characteristics of Tourists Shape Tourism Demand? New Evidence From the Role of Satisfaction. *Sage Open*, *15*(2). https://doi.org/10.1177/21582440251335471

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*(3), 879–891. https://doi.org/10.3758/BRM.40.3.879

Purwanto, B., & Amanah, N. K. (2019). Bounded Rationality Under Sharia Norms: Evidence from Indonesia. *Proceedings of the 2019 International Conference on Organizational Innovation (ICOI 2019)*. https://doi.org/10.2991/icoi-19.2019.73

Rani, P., & Sharma, V. (2024). Financial Planning and Investment Behavior of Salaried Households: A Comparative Study of Rural and Urban Areas. *Journal of Global Economics Management and Business Research*, *16*(3), 45–53. https://doi.org/10.56557/jgembr/2024/v16i39064

Reeves, A., & de Vries, R. (2019). Can cultural consumption increase future earnings? Exploring the economic returns to cultural capital. *The British Journal of Sociology*, *70*(1), 214–240. https://doi.org/10.1111/1468-4446.12374

Rhemtulla, M., Brosseau-Liard, P. É., & Savalei, V. (2012). When can categorical variables be treated as continuous? A comparison of robust continuous and categorical SEM estimation methods under suboptimal conditions. *Psychological Methods*, *17*(3), 354–373. https://doi.org/10.1037/a0029315

Rolison, J. J., Hanoch, Y., & Wood, S. (2017). Saving for the future: Dynamic effects of time horizon. *Journal of Behavioral and Experimental Economics*, *70*, 47–54. https://doi.org/10.1016/j.socec.2017.07.006

Saeedi, A., & Hamedi, M. (2018). Financial literacy: Empowerment in the stock market. In *Financial Literacy: Empowerment in the Stock Market*. https://doi.org/10.1007/978-3-319-77857-0

Sahputra, A. M. (2026). Role of Mediating Consumption Behavior in the Influence of Saving Behavior on Financial Management Ability Among Generation Z Student in Malang City. *Equivalent*

Journal of Economic Accounting and Management, *4*(1), 386–396. https://doi.org/10.61994/equivalent.v4i1.1480

Shah, M. H., Murugiah, L., & Ahmad, N. B. (2021). Saving Model Under Financial Literacy. *International Journal of Academic Research in Business and Social Sciences*, *11*(2). https://doi.org/10.6007/IJARBSS/v11-i2/8612

Sharma, V. (2024). Unveiling Financial Literacy: Perspectives from Individuals and the Global Stage. *INTERANTIONAL JOURNAL OF SCIENTIFIC RESEARCH IN ENGINEERING AND MANAGEMENT*, *08*(05), 1–5. https://doi.org/10.55041/IJSREM33947

Shmueli, G., Ray, S., Estrada, J. M., & Chatla, S. B. (2019). The elephant in the room: Predictive performance of PLS models. *MIS Quarterly*, *43*(2), 565–583. https://doi.org/10.25300/MISQ/2019/12317

Shmueli, G., Sarstedt, M., Hair, J. F., Cheah, J.-H., Ting, H., Vaithilingam, S., & Ringle, C. M. (2019). Predictive model assessment in PLS-SEM: guidelines for using PLSpredict. *European Journal of Marketing*, *53*(11), 2322–2347. https://doi.org/10.1108/EJM-02-2019-0189

Story, G. W., Vlaev, I., Dayan, P., Seymour, B., Darzi, A., & Dolan, R. J. (2015). Anticipation and Choice Heuristics in the Dynamic Consumption of Pain Relief. *PLOS Computational Biology*, *11*(3), e1004030. https://doi.org/10.1371/journal.pcbi.1004030

Sun, R., & Xiong, X. (2023). The Impact of Income on Rural Residents' Retirement Saving: Evidence From China. *Agriculture*, *13*(9), 1756. https://doi.org/10.3390/agriculture13091756

Tejas Tamnar, Prasad Shinde, Siddhant Ganeshkar, Aniruddha Muttha, & G.T. Avhad. (2025). Over Speed Detection and Number Plate Recognition. *International Research Journal on Advanced Engineering Hub (IRJAEH)*, *3*(05), 2438–2440. https://doi.org/10.47392/IRJAEH.2025.0361

Thaler, R. H., & Shefrin, H. M. (1981). An Economic Theory of Self-Control. *Journal of Political Economy*, *89*(2), 392–406. https://doi.org/10.1086/260971

Triberti, G. (2022). Savings and collective behavioral patterns in Mexico s pension system. *Análisis Económico*, *37*(94), 7–21. https://doi.org/10.24275/uam/azc/dcsh/ae/2022v37n94/Triberti

Voon, J. C., & Voon, J. P. (2011). A Structural Utility Mediation Model: China during the Global Financial Crisis. *International Journal of Economics and Finance*, *3*(6). https://doi.org/10.5539/ijef.v3n6p141

Warmath, D., Elizabeth O'Connor, G., Wong, N., & Newmeyer, C. (2022). The role of social psychological factors in vulnerability to financial hardship. *Journal of Consumer Affairs*, *56*(3), 1148–1177. https://doi.org/10.1111/joca.12468

Wei, X., & Jung, S. (2017). Understanding Chinese Consumers' Intention to Purchase Sustainable Fashion Products: The Moderating Role of Face-Saving Orientation. *Sustainability*, *9*(9), 1570. https://doi.org/10.3390/su9091570

Weisfeld-Spolter, S., Sussan, F., Rippé, C., & Gould, S. (2018). Integrating affect, cognition, and culture in Hispanic financial planning. *International Journal of Bank Marketing*, *36*(4), 726–743. https://doi.org/10.1108/IJBM-09-2017-0201

Wilska, T., Silinskas, G., & Nyrhinen, J. (2023). From hedonism to frugality: consumption desires in different age groups across 20 years. *Consumption and Society*, *2*(1), 3–23. https://doi.org/10.1332/UHZL1204

Xu, C., & Steiner, A. (2025). How Does Public Sector Employment Affect Household Saving Rates? Evidence From China. *Journal of Money Credit and Banking*. https://doi.org/10.1111/jmcb.13251

Yeoh, K. Y., Tham, K.-W., Cheng, C. T., Chai, W.-C., & Chong, K. W. (2025). Exploring the relationship between macroeconomic conditions and distressed real estate loans during the COVID-19 pandemic in Malaysia and Singapore. *International Journal of Housing Markets and Analysis*. https://doi.org/10.1108/IJHMA-04-2025-0100

Yohai, V. J. (1987). High Breakdown-Point and High Efficiency Robust Estimates for Regression. *The Annals of Statistics*, *15*(2). https://doi.org/10.1214/aos/1176350366

Yoon, D. W., & Hanna, S. D. (2024). The Relationship Between Self-Control Factors and Household Saving Behavior. *Journal of Financial Counseling and Planning*, *35*(3), 323–336. https://doi.org/10.1891/jfcp-2023-0063

Zhou, C., Xu, Z., Shi, X., Liu, H., & Chen, Y. (2025). Constructing a dual-path motivation-regulation model of elderly sport consumption: a psychological perspective on behavioral drivers. *Frontiers in Psychology*, *16*. https://doi.org/10.3389/fpsyg.2025.1628214

APPENDIX

Appendix A. Descriptive Statistics of Observed Variables (N = 500)

Table A1. Means, Standard Deviations, and Ranges of Indicators

Variable	Mean	SD	Min	Max
X11	4.32	0.74	2	5
X12	4.1	0.79	2	5
X13	4.13	0.72	3	5
X14	4.35	0.77	2	5
X15	4.28	0.84	2	5
X21	3.53	0.89	1	5
X22	4.12	0.66	3	5
X23	3.64	0.94	1	5
X24	3.48	0.93	1	5
X25	4.39	0.56	3	5
Y11–Y15	3.86–4.39	0.63–0.88	1	5
Y21–Y25	3.85–4.33	0.61–0.95	1	5

Note: Mean values indicate generally high agreement levels with moderate dispersion typical of Likert-type data.

Appendix B. Distributional and Preliminary Diagnostics

B1. Normality Tests

Variable	W Statistic	p-value	Interpretation
X11	0.97	<0.001	Not normal
X12	0.96	<0.001	Not normal
X13	0.97	<0.001	Not normal
X14	0.96	<0.001	Not normal
X15	0.95	<0.001	Not normal
X21	0.94	<0.001	Not normal
X22	0.97	<0.001	Not normal
X23	0.93	<0.001	Not normal
X24	0.92	<0.001	Not normal
X25	0.97	<0.001	Not normal
Y11	0.95	<0.001	Not normal
Y12	0.94	<0.001	Not normal
Y13	0.96	<0.001	Not normal
Y14	0.96	<0.001	Not normal
Y15	0.95	<0.001	Not normal
Y21	0.95	<0.001	Not normal
Y22	0.94	<0.001	Not normal
Y23	0.96	<0.001	Not normal
Y24	0.93	<0.001	Not normal
Y25	0.94	<0.001	Not normal

Note:
$p > 0.05$ indicates normal distribution.

B2. Multicollinearity Diagnostics (VIF)

Predictor	VIF	Tolerance	Interpretation
Income (X1)	1.32	0.758	No multicollinearity
Saving Behavior (X2)	1.32	0.758	No multicollinearity

All VIF values < 5, indicating no multicollinearity concerns.

B3. Univariate Outlier Detection

Variable	N	Mean	SD	Min	Max	Outliers ($\|Z\| > 3$)	Interpretation
X1 (Income)	500	4.24	0.6	2	5	0	No outliers detected
X2 (Saving Behavior)	500	3.83	0.7	1	5	0	No outliers detected
Y1 (Financial Risk Management)	500	4.15	0.7	1.8	5	0	No outliers detected
Y2 (Household Financial Decision Making)	500	4.07	0.7	1.8	5	0	No outliers detected

Appendix C. Reliability and Construct Refinement

C1. Internal Consistency

Construct	Number of Items	Cronbach's Alpha	Interpretation
Income (X1)	5	0.759	Acceptable reliability
Saving Behavior (X2)	5	0.835	Good reliability
Financial Risk Management (Y1)	5	0.814	Good reliability
Household Financial Decision Making (Y2)	2*	0.822	Good reliability

Note: *Initial measurement of Y2 included five items. However, three items (Y23, Y24, Y25) showed weak or negative inter-item correlations and were removed to improve internal consistency. The final construct retained two items (Y21 and Y22).*

C2. Inter-Item Correlations (Y2)

Item	Y21	Y22	Y23	Y24	Y25
Y21	1	0.71	0.26	-0.23	0.07
Y22	0.71	1	0.13	-0.19	-0.13
Y23	0.26	0.13	1	0.36	0.44
Y24	-0.23	-0.19	0.36	1	0.36
Y25	0.07	-0.13	0.44	0.36	1

C3. Diagnostic Covariance Assessment

Fit Index	Obtained Value	Recommended Threshold	Interpretation
CFI (Comparative Fit Index)	0.651	≥ 0.90	Poor fit
TLI (Tucker–Lewis Index)	0.538	≥ 0.90	Poor fit

RMSEA (Root Mean Square Error of Approximation)	0.241	≤ 0.08	Poor fit

Note: The CFA results for constructs X1 and X2 indicate inadequate global model fit (CFI = 0.651; TLI = 0.538; RMSEA = 0.241). Therefore, the constructs were operationalized using composite scores in the subsequent regression analyses.

Appendix D. Correlation Matrix (Composite Level)

Variable	X1	X2	Y1	Y2_clean
X1 (Income)	1	0.49	0.56	0.58
X2 (Saving Behavior)	0.49	1	0.67	0.66
Y1 (Financial Risk Management)	0.56	0.67	1	0.41
Y2_clean (HouseHold Financial Decision Making)	0.58	0.66	0.41	1

Note: Values represent Pearson correlations among composite variables. All constructs show moderate positive correlations, indicating related but empirically distinct constructs.

Appendix E. Structural Estimation Details

E1. Baseline Models (OLS)

Variables	Model 1 (Y1)	Model 2 (Y2_clean)
Intercept	0	0
Income (X1)	0.301***	0.398***
Saving Behavior (X2)	0.520***	0.604***
Financial Risk Management (Y1)	–	-0.214***
R^2	0.515	0.538
Adjusted R^2	0.513	0.535
F-statistic	264.2***	192.1***
Observations	500	500

E2. Full Moderation Model (Robust MM)

Predictor	β	Significance
X1	0.433	***
X2	0.66	***
X1 × X2	-0.267	***
Y1	-0.25	***
Adjusted R^2	0.628	

Effect Sizes (Cohen's f^2):

Predictor	Cohen's f^2	Effect Size Interpretation
Income (X1)	0.201	Medium
Saving Behavior (X2)	0.524	Large
Income × Saving Behavior (X1×X2)	0.074	Small
Financial Risk Management (Y1)	0.056	Small

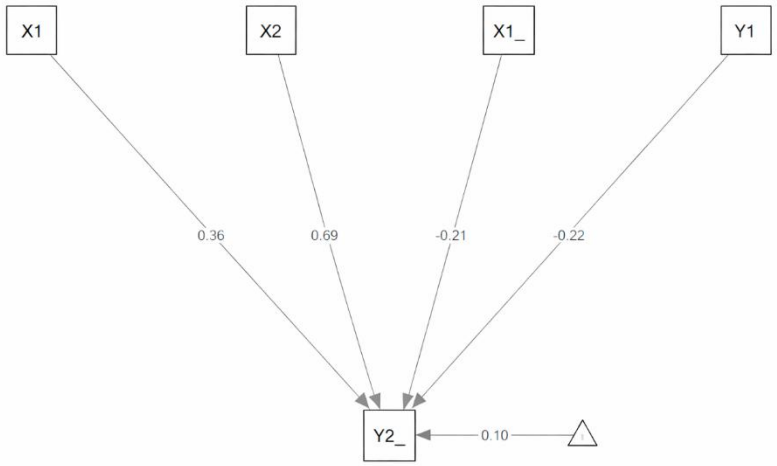


Figure A1

E3. Mediation Analysis (Bootstrap, 1,000 resamples)

Path	ACME (Indirect Effect)	95% CI Lower	95% CI Upper	ADE (Direct Effect)	Total Effect	Prop. Mediated	p-value
X1 → Y1 → Y2	-0.064	-0.097	-0.036	0.398	0.334	-0.193	<0.001
X2 → Y1 → Y2	-0.111	-0.148	-0.074	0.604	0.492	-0.226	<0.001

Notes:

- ACME = Average Causal Mediation Effect (Indirect effect)
- ADE = Average Direct Effect
- Bootstrap confidence intervals based on 1,000 resamples

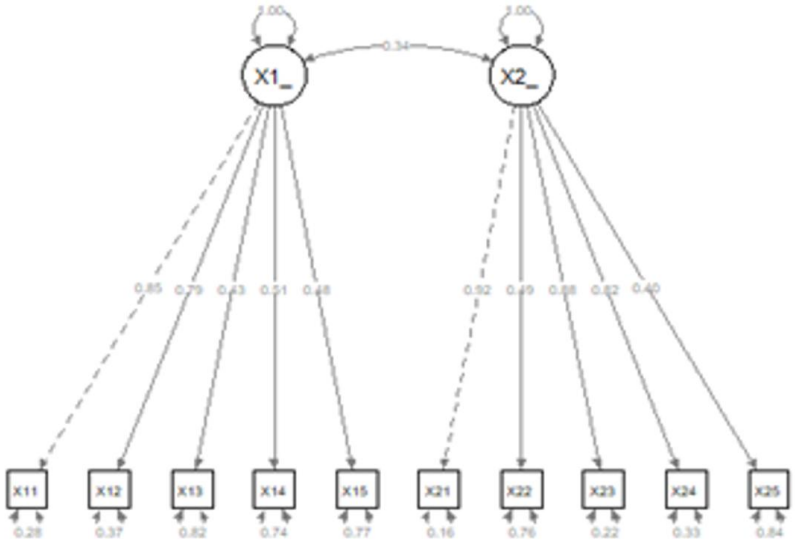


Figure A2

E4. Model Comparison Summary

Specification	Model Description	R^2
Baseline (OLS)	Income and Saving Behavior predicting Household Financial Decision Making	0.54

Full Moderation	Income, Saving Behavior, Financial Risk Management, and Interaction (Income × Saving Behavior)	0.63
Sensitivity (No Interaction)	Income, Saving Behavior, and Financial Risk Management without interaction term	0.54

Appendix F. Robustness and Predictive Validation

Test	Statistic	Result	Interpretation
Breusch–Pagan Test	BP = 38.37	$p < 0.001$	Heteroskedasticity detected
Durbin–Watson Test	DW = 2.11	$p > 0.05$	No autocorrelation
Hold-out Validation (70/30)	RMSE = 0.715	—	Good predictive accuracy
5-Fold Cross-Validation	Mean RMSE = 0.680	—	Stable prediction error
5-Fold Cross-Validation	Mean MAE = 0.570	—	Moderate prediction error

Appendix G. Sensitivity Analysis

Alternative Specification	Description	Key Result
No Interaction Model	Regression model excluding the interaction term (Income × Saving Behavior)	Coefficient signs remain consistent
Reduced Outcome Specification	Model estimated using a minimal set of Household Financial Decision Making (Y2) items	Similar coefficient magnitudes and interpretations
Baseline OLS Comparison	Comparison with baseline model specification	Results remain substantively unchanged

Appendix H

Operational Definition of Variables

Construct	Indicator Code	Indicator	Operational Meaning	Source	Scale
Income (X1)	X11	Current income level	Reflects the adequacy of current income to support culturally expected financial expenditures	(Acerenza & Gandelman, 2019; Deeming, 2009; Penne et al., 2020)	5-point Likert
	X12	Employment status and income stability	Measures income stability as a foundation for financial capacity in fulfilling cultural obligations	(Deeming, 2009; Grzywińska-Rąpca, 2025; Penne et al., 2020)	5-point Likert
	X13	Sensitivity to prices and costs	Assesses responsiveness to price fluctuations related to culturally embedded expenditures	(Acerenza & Gandelman, 2019; Deeming, 2009; Grzywińska-Rąpca, 2025)	5-point Likert
	X14	Sustainability of income sources	Measures expectations regarding short-term income continuity	(Acerenza & Gandelman, 2019; Karonen & Niemelä, 2022; Katsuura, 2012)	5-point Likert
	X15	Access to seasonal additional income	Evaluates access to additional seasonal income supporting culturally driven spending	(Acerenza & Gandelman, 2019; Karonen & Niemelä, 2022; Penne et al., 2020)	5-point Likert
Saving Behaviour (X2)	X21	Saving goals (short- and long-term)	Assesses saving orientation for anticipated culturally embedded expenditures	(Deeming, 2009; Grzywińska-Rąpca, 2025; Penne et al., 2020)	5-point Likert

	X22	Financial literacy in saving decisions	Measures financial understanding in saving-related decision-making	(Rolison et al., 2017; Saeedi & Hamedi, 2018)	5-point Likert
	X23	Cultural values in saving habits	Assesses the influence of cultural norms on saving practices	(Deaton, 1992; Khanal et al., 2019; Reeves & de Vries, 2019)	5-point Likert
	X24	Social pressure in saving	Describes the role of social pressure in shaping saving behaviour	(Story et al., 2015; Wei & Jung, 2017; Wilska et al., 2023)	5-point Likert
	X25	Adaptive saving behaviour under economic risk	Measures adaptive saving responses under economic uncertainty	(Fisher, 2010; Fulford, 2014; Gan & Kay, 2025; Mishra & Chang, 2009)	5-point Likert
Financial Risk Management (Y1)	Y11	Availability of emergency funds	Measures preparedness for unexpected financial events	(Ademola et al., 2025; HORIOKA, 2019; Koon et al., 2020)	5-point Likert
	Y12	Budgeting ability	Assesses planning discipline in managing expenditures	(Grzywińska-Rąpca, 2025; Karonen & Niemelä, 2022; Penne et al., 2020)	5-point Likert
	Y13	Debt management	Measures preference for avoiding excessive financial risk	(Flodén, 2006; Gan & Kay, 2025; Mishra & Chang, 2009)	5-point Likert
	Y14	Financial risk management during travel	Assesses awareness and evaluation of financial risk during travel	(Ferrer-Rosell et al., 2015; Obenour, 2004; Phan et al., 2025)	5-point Likert
	Y15	Response to macroeconomic conditions	Measures sensitivity to macroeconomic changes affecting expenditures	(Jabłonkowska & Stankiewicz, 2018; Tejas Tamnar et al., 2025)	5-point Likert
Household Financial Decision Making (Y2)	Y21	Emotional motivation to reunite	Captures emotional motivation underlying culturally expected financial decisions	(Kerr et al., 2019; Kitayama & Park, 2007; Zhou et al., 2025)	5-point Likert
	Y22	Cultural obligation and traditional values	Assesses the strength of cultural obligation in shaping decisions	(Deaton, 1992; Reeves & de Vries, 2019; Voon & Voon, 2011)	5-point Likert
	Y23	Rational decision-making (cost–benefit)	Measures rational evaluation processes in financial decisions	(Akinkoye & Bankole, 2020; Kurniawati & Syamsuddin, 2025; Purwanto & Amanah, 2019)	5-point Likert
	Y24	Financial readiness	Assesses perceived financial readiness to fulfil cultural obligations	(Acerenza & Gandelman, 2019; Karonen & Niemelä, 2022; Penne et al., 2020)	5-point Likert
	Y25	Accessibility of transportation and infrastructure	Describes the role of infrastructure in enabling decisions	(Arfaoui et al., 2024; Javed et al., 2025; Weisfeld-Spolter et al., 2018)	5-point Likert