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Mapping the Role of Financial Literacy in Retirement Planning: Evidence from Exploratory Factor Analysis

Tika septiani
Management Science, Faculty of Economic and Business
Universitas Negeri Jakarta
Jakarta, Indonesia
tikapramana@gmail.com

Agung Dharmawan Buchdadi
Management Science, Faculty of Economic and Business
Universitas Negeri Jakarta
Jakarta, Indonesia
agungdharmawan@feunj.ac.id

Ayatullah Michael Musyaffi
Management Science, Faculty of Economic and Business
Universitas Negeri Jakarta
Jakarta, Indonesia
musyaffi@unj.ac.id

Abstract

This study examines how financial literacy shapes retirement planning, highlighting the pivotal influence of financial knowledge on long-term financial choices. Although awareness of the need for retirement preparedness has grown, many people remain inadequately prepared due to limited financial literacy. The study's core aim is to assess how various facets of financial literacy—such as familiarity with financial products, attitudes toward planning, and observable financial behaviors—inform retirement-planning decisions. Using Exploratory Factor Analysis (EFA), the study identifies key factors that link financial literacy to retirement preparedness. Data were collected from a sample of 350 individuals, with a focus on their financial knowledge, planning behaviors, and retirement savings actions. The findings reveal that knowledge of financial products and positive attitudes toward financial planning significantly influence retirement preparedness, while behavioral practices, such as saving and consulting financial advisors, play a crucial role in retirement. The study underscores the necessity of going beyond a narrow focus on expanding financial knowledge but also fostering proactive financial behaviors. It contributes to the field of behavioral finance by providing insights for more effective financial literacy programs and retirement planning interventions. The evidence ultimately indicates that comprehensive financial education is critical to strengthening retirement planning.

Keywords: financial literacy; retirement planning; exploratory factor analysis; behavioral finance; retirement preparedness

I. INTRODUCTION

In the context of an increasingly intricate global financial system, preparing for old-age income has become a cornerstone of personal financial management. Yet, despite rising awareness, many individuals remain insufficiently prepared, largely due to gaps in financial literacy. Financial literacy—encompassing the ability to understand and apply core concepts such as saving, investment principles, the time value of money, and basic risk control—forms the foundation of effective long-horizon planning, particularly for retirement. Empirical evidence indicates that decisions made without adequate comprehension of financial products and retirement vehicles can expose individuals to avoidable risks and undermine economic security in later life (Lusardi & Mitchell, 2021).

Over recent decades, financial literacy has come to be regarded as a cornerstone of prudent household financial decision-making. Nevertheless, despite its rising salience, empirical evidence continues to document substantial deficits in knowledge and skills—especially in developing economies—that hinder informed choices. These gaps often manifest in inadequate retirement preparation, with meaningful consequences for financial security in later life. Mastering the complexities of retirement planning—including the spectrum of retirement saving vehicles, contribution rules, and investment strategies—is therefore pivotal to securing stable post-retirement resources. Accordingly, elucidating how financial literacy shapes individuals' readiness for retirement remains an essential line of inquiry (Abdallah et al., 2024).

Positioned within behavioral finance, this study advances the literature by employing Exploratory Factor Analysis (EFA) to delineate the linkage between financial literacy and retirement planning. Although numerous investigations have assessed how financial literacy influences financial decision-making in general, comparatively few have unpacked the latent factors that specifically tie financial literacy to retirement-planning outcomes. By utilizing EFA, this research aims to delve deeper into the dimensions that influence how financial literacy shapes retirement planning decisions and enrich the existing literature with new perspectives on the psychological and practical factors that affect retirement decisions (Sarıtaş, 2023).

This study advances the literature on financial literacy and retirement planning by isolating the principal determinants that underpin their association. Using exploratory factor analysis, it extracts the latent dimensions of financial literacy that shape individuals' retirement preparation and clarifies how these dimensions interact within the decision-making process. The evidence yields practical guidance for practitioners, policymakers, and financial education providers to design more targeted, effective interventions that strengthen retirement readiness at the population level (Goyal & Kumar, 2023).

The relevant theories in this research are Financial Planning Theory and Behavioral Finance. Financial Planning Theory emphasizes the importance of long-term financial management for retirement, involving decisions on savings, investments, and risk management strategies (Joo & Grable, 2023). On the other hand, Behavioral Finance provides a framework for understanding how psychological biases, such as overconfidence or present bias, influence financial decision-making, including retirement planning (Barberis & Thaler, 2021). These theories are relevant in the context of this study because they offer a foundation for analyzing how financial literacy and psychological factors interact and affect retirement planning decisions.

A substantial body of evidence identifies financial literacy as a salient determinant of household financial choices, especially in the retirement context. Lusardi and Mitchell (2021) document that limited literacy is associated with smaller retirement accumulations and weaker preparedness. Almenberg and Dreber (2019) show that individuals who better understand retirement vehicles and investment instruments are more likely to undertake effective retirement planning. Complementing these results, Cohen et al. (2020) find that higher literacy dampens impulsive decision-making and fosters longer planning horizons, including for retirement.

Despite substantial evidence that financial literacy bears on retirement planning, much of the literature relies on rudimentary indicators of literacy and overlooks its multidimensional structure. To address this limitation, the present study employs Exploratory Factor Analysis (EFA) to disentangle the latent components of financial literacy that shape retirement choices (see Sarıtaş, 2023). By moving beyond conventional knowledge-based measures, this approach provides a more granular account of how distinct facets of literacy influence retirement planning.

This study investigates the latent structure connecting financial literacy to retirement planning by employing Exploratory Factor Analysis (EFA). Through this approach, it isolates the principal dimensions of financial literacy and evaluates how each dimension differentially shapes individuals' decisions when formulating retirement plans. Provide evidence-based recommendations for improving financial literacy and retirement preparedness through more effective interventions. Additionally, this study aims to offer practical contributions for policymakers, financial advisors, and educators by informing them about the critical factors that should be considered when designing financial literacy programs aimed at improving retirement planning. By focusing on the factors that influence

retirement decisions, this research seeks to enrich our understanding of how better financial literacy can lead to more robust retirement preparedness (Abdallah et al., 2024).

II. METHOD

This section presents the research design, sampling process, operationalization of variables, and data analysis techniques used to investigate the association between financial literacy and retirement planning, employing Exploratory Factor Analysis (EFA) as the primary analytical tool.

Research Design

This research employs a quantitative design and administers a cross-sectional survey to respondents positioned at different stages of retirement preparation. By measuring financial literacy and retirement-planning outcomes at a single point in time, the design enables assessment of their contemporaneous associations and supports the identification of systematic patterns and correlations between the variables (Bryman, 2021). The primary objective is to understand how financial literacy influences individuals' preparedness for retirement, with a focus on the dimensions of financial literacy that most impact retirement planning behavior.

Sampling Process

The target population for this study includes individuals between the ages of 25 and 60 years, who are currently employed or self-employed. This age group was selected because it encompasses individuals who are at different stages of career progression and retirement preparation. Respondents were recruited via nonprobability convenience sampling across multiple metropolitan settings to capture heterogeneity in socioeconomic strata. Inclusion criteria required voluntary participation and demonstrated capacity to provide informed consent.

To ensure sufficient power for the Exploratory Factor Analysis (EFA), a minimum sample size of 300 respondents was targeted, as this is considered adequate for conducting factor analysis in behavioral research (Field, 2018). The final sample consisted of 350 respondents, meeting the required threshold for EFA and ensuring the results' generalizability.

Operationalization of Variables

The key variables in this study are financial literacy and retirement planning. These variables were operationalized as follows:

Variable	Dimension	Indicator	Measurement	Source
Financial Literacy	Knowledge of Financial Concepts	- Knowledge of savings -Knowledge of investments -Understanding of risk management	Likert scale (1-5)	Lusardi & Mitchell; Cohen. (2021) (2020)
	Attitude Towards Financial Planning	- Willingness to engage in retirement planning -Confidence in managing retirement funds	Likert scale (1-5)	Lusardi & Mitchell; Cohen. (2021) (2020)
	Behavioral Financial Practices	- Regular saving for retirement - Participation in pension plans - Use of financial advisors	Frequency of behavior (Never, Occasionally, Always)	Goyal & Kumar (2023)
Retirement Planning	Financial Preparedness for Retirement	- Amount saved for retirement - Knowledge of retirement products - Perceived adequacy of retirement savings	Likert scale (1-5)	Goyal & Kumar (2023); Joo & Grable (2023)
	Behavioral Action Towards Retirement	- Number of retirement planning actions taken (e.g., consulting a financial planner) - Participation in retirement savings plans	Frequency of behavior (Never, Occasionally, Always)	Cohen et al. (2020); Lusardi & Mitchell (2021)
	Psychological Factors in Planning	- Perceived importance of retirement	Likert scale (1-5)	Sarıtaş (2023); Barberis & Thaler (2021)

Variable	Dimension	Indicator	Measurement	Source
		- Future-oriented thinking (long-term planning)		

Data Collection

Data were gathered via a web-based questionnaire disseminated through email lists and social media channels. The instrument included demographic items (age, gender, income, and education) alongside measures of financial literacy and retirement planning. To encourage participation, respondents were entered into a drawing for a small gift card.

Data Analysis

The dataset was subjected to exploratory factor analysis (EFA) to uncover latent constructs that structure the relationship between financial literacy and retirement planning. The procedure was implemented in IBM SPSS Statistics (Version 26), a widely adopted platform for conducting factor-analytic techniques in social science research.

Data Cleaning and Preparation, the initial dataset was checked for missing values and outliers. Missing data were handled through multiple imputation, and outliers were identified using boxplots and removed from the analysis. Following data screening, factor extraction was conducted using principal axis factoring with orthogonal Varimax rotation to enhance interpretability by reducing cross-loadings (Hair et al., 2020). Sampling adequacy and factorability were verified via the Kaiser–Meyer–Olkin index and Bartlett's test of sphericity, and the number of factors retained was guided by inspection of the scree plot. Internal consistency of the resulting factors was evaluated with Cronbach's alpha, adopting .70 as the criterion for acceptable reliability (Field, 2018). The emergent structure was then evaluated in a structural equation modeling framework to estimate the relationships between financial literacy and retirement planning while controlling for demographic covariates such as age and income; SEM is particularly appropriate in behavioral research because it accommodates linkages between observed indicators and latent constructs (Kline, 2016).

Limitations of the Study

This study is subject to several limitations. First, the use of convenience sampling may limit the generalizability of the findings, as the sample may not fully represent the broader population. Additionally, the cross-sectional nature of the study precludes causal inferences between financial literacy and retirement planning. Future research could employ longitudinal designs to better understand the causal relationships over time.

III. RESULTS AND DISCUSSION

This section first summarizes the descriptive characteristics of the dataset (N = 350) obtained via an online survey, then presents the results of the Exploratory Factor Analysis (EFA), and finally discusses the implications of the findings in relation to prior literature. The respondent pool comprises adults aged 25–60. Descriptive statistics for key demographic attributes are reported below:

Demographic Characteristic	Category	Frequency (n)	Percentage (%)
Age	25-34	120	34.3
	35-44	100	28.6
	45-54	80	22.9
	55-60	50	14.3
Gender	Male	179	51, 3
	Female	171	48,7
Education Level	High School	40	11.4
	Undergraduate	150	42.9

Demographic Characteristic	Category	Frequency (n)	Percentage (%)
	Graduate	160	45.7
earned income in a month	< Rp5.000.000	110	31.4
	Rp 5.000,000 – 10.000.000	130	37.1
	> IDR 10,000,000	110	31.4

The sample was concentrated in early to mid-adulthood, with 62.9% of respondents aged 25–44. The gender distribution was near parity (51.3% men and 48.7% women). Educational attainment skewed high, as 45.7% reported a graduate degree and 42.9% held an undergraduate degree. In terms of economic status, the most common monthly income fell in the Rp 5,000,000–Rp 10,000,000 bracket (37.1%).

Results of Data Analysis

The dataset was examined with Exploratory Factor Analysis (EFA) to distill the latent dimensions underpinning financial literacy and retirement planning. The emergent factor structure and associated diagnostics are summarized below:

Factor Analysis of Financial Literacy

Using Principal Axis Factoring (PAF) and Varimax rotation, the factor analysis revealed three distinct factors underlying financial literacy:

Factor 1: Knowledge of Financial Products

This factor includes items related to knowledge of savings accounts, investment products, and insurance options.

Items such as "I know how to manage investment portfolios" and "I understand different types of retirement accounts" had the highest loadings on this factor.

Factor 2: Financial Planning Attitude

This factor captures the respondent's attitude toward financial planning, including their perceived importance of planning for retirement and the confidence to manage personal finances.

Items like "I believe it is important to plan for my retirement" and "I feel confident in making financial decisions about retirement" were strongly associated with this factor.

Factor 3: Behavioral Financial Practices

This factor measures individuals' actual behaviors related to saving for retirement, such as participation in pension plans and seeking advice from financial experts.

Items like "I regularly save for retirement" and "I consult financial advisors to plan my retirement" loaded highly on this factor.

Factor Analysis of Retirement Planning

The factor analysis of retirement planning revealed two primary factors:

Factor 1: Retirement Savings Preparedness

This factor includes items assessing the amount of money saved for retirement, knowledge of retirement savings products, and the perceived adequacy of the savings.

Items like "I feel prepared for my retirement financially" and "I have a clear understanding of the retirement savings products available to me" had the highest loadings.

Factor 2: Retirement Planning Actions

This factor reflects the behaviors of individuals towards taking concrete actions for retirement planning, such as consulting a financial planner or contributing to pension schemes.

Items like "I have met with a financial planner to discuss my retirement" and "I contribute regularly to a retirement savings plan" were most strongly associated with this factor.

Reliability and Validity

Sampling adequacy was strong: the KMO statistic reached 0.89 for financial literacy and 0.87 for retirement planning—values typically classified as excellent (Hair et al., 2020). Bartlett's test of sphericity was significant ($p < 0.001$), indicating that the correlation matrices were appropriate for factor analysis. Reliability was acceptable to good, with Cronbach's alpha coefficients spanning 0.75 to 0.87 across the factors.

Discussion

The study's results yield substantive insights into how financial literacy relates to retirement planning:

Financial Literacy and Retirement Planning

The evidence indicates that financial literacy is pivotal to effective retirement preparation. In particular, greater familiarity with financial instruments and more favorable orientations toward planning are strongly linked to heightened readiness to save for retirement and to more active retirement-planning behaviors. These patterns align with prior findings by Lusardi and Mitchell (2021) and Goyal and Kumar (2023), which highlight the central role of financial knowledge in fostering sound retirement planning.

Behavioral Factors

The analysis suggests that sustained financial practices—such as making regular contributions to retirement accounts and consulting professional advisers—are associated with greater retirement readiness. This pattern is consistent with Cohen et al. (2020), who report that higher levels of financial literacy curb impulsive decision-making and promote longer planning horizons.

IV. CONCLUSIONS

Through the application of exploratory factor analysis, this study clarifies the linkage between financial literacy and retirement planning. By isolating the latent dimensions that shape individuals' preparation for old-age income, it advances scholarship in behavioral finance and financial literacy. The evidence underscores that both cognitive competence and consistent financial practices are integral to retirement readiness. In turn, the findings yield actionable implications for policymakers, financial educators, and practitioners to craft targeted, evidence-informed initiatives that enhance financial capability and strengthen retirement planning across the population.

Implications and Contributions

The study contends that financial literacy is inherently multidimensional—encompassing product knowledge, planning orientations, and enacted financial practices—rather than a single, uniform construct. These domains meaningfully shape retirement-related choices. By employing Exploratory Factor Analysis (EFA), the research maps how these facets interrelate and offers a more granular account of the pathways through which literacy translates into retirement readiness. The evidence indicates that initiatives to strengthen literacy should pair knowledge acquisition with the cultivation of constructive attitudes and consistent, goal-aligned behaviors toward retirement planning.

From an applied perspective, the findings support the design of targeted financial-education programs that build conceptual understanding while also promoting behaviors such as sustained retirement saving and timely engagement with professional advice. Policymakers and financial practitioners can leverage these insights to craft tailored interventions that prioritize the specific facets of literacy most predictive of improved retirement outcomes.

Limitations of the Research

Notwithstanding its contributions, this study has several limitations. First, reliance on nonprobability convenience sampling constrains external validity; the predominantly urban sample may not capture the socioeconomic heterogeneity of the wider population or the circumstances of rural and underserved groups. Second, the cross-sectional design offers only a contemporaneous snapshot, precluding strong causal inference about the linkage between financial literacy and retirement planning. Finally, the use of self-reported measures of retirement-planning behavior introduces the risk of social desirability bias, whereby respondents may overstate their level of preparedness.

Suggestions for Future Studies

Future work should explicitly address the study's constraints. In particular, adopting probability-based (random) sampling would yield a more representative cross-section of respondents across regions and socioeconomic strata, thereby improving external validity and the generalizability of results. Moreover, longitudinal designs would illuminate temporal dynamics and persistence, permitting stronger causal inferences about how financial literacy shapes retirement planning over time.

Additional avenues include examining digital financial literacy, given the growing centrality of online platforms for transactions and retirement planning; clarifying its role in retirement choices is increasingly critical. Researchers should also integrate psychological drivers highlighted in behavioral finance—such as overconfidence, present-biased preferences, and loss aversion—which were beyond the scope of this study but likely exert meaningful influence on financial decision-making.

Lastly, future research could extend the analysis by including more specific and diverse indicators of retirement planning behavior, such as the use of specific retirement savings products or the influence of workplace pension plans, to better capture the complexities of retirement planning in different contexts.

Final Thoughts

In closing, this study advances understanding of the dynamics between financial literacy and retirement preparation. The evidence underscores that literacy is a multidimensional construct—comprising knowledge, attitudes, and behaviors—that plays a salient role in steering long-term financial trajectories. By delineating these constituent dimensions, the analysis offers practical, evidence-informed guidance for strengthening financial education and enhancing retirement readiness, with wide-ranging implications for financial well-being in later life.

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