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Does Financial Literacy Mediate, Future Perspective, and Risk Tolerance On Retirement Saving Behavior.

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Abstract

This study sought to investigate how retirement saving behavior was impacted by financial literacy, future perspective, and significant risk tolerance. Additionally, the financial literacy factors mediate risk tolerance and future perspective. The causal design is a type of quantitative descriptive research that is useful for analyzing one variable's effects on another or measuring the relationship between research variables. All of the participants in this study were Padang residents. Random sampling was used as the sampling method. Primary data and Likert scale measurements were used. The data processing technique used the SEM method based on Partial Least Square (PLS.). The results of this study stated that financial literacy had a significant positive effect on retirement savings behavior. Future perspective had a significant positive effect on financial literacy and retirement savings behavior. The risk tolerance variable had a significant positive effect on financial literacy. Conversely, risk tolerance did not affect retirement savings behavior. Financial literacy as a mediating variable, future perspective, and risk tolerance did not affect their retirement savings planning.

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1. Introduction

Indonesia is currently enjoying the highest demographic bonus because the population's age distribution has changed (Badawi, et.al, 2024). A decline in the dependency ratio—also known as the ratio of the non-productive population (those under 15 and those 65 and older) to the productive population (those between 15 and 64)—indicates this. The demographic bonus is an uncommon occurrence since it only happens once in a country's history (Saputra and Pitoyo, 2020). In 2020, when the millennial generation is between the ages of 20 and 40, the demographic bonus starts. This is the productive age range that will support the Indonesian economy (Badawi, et.al, 2024). Being born in the era of globalization makes the millennial generation have a greater advantage in mastering and adapting to technology compared to previous generations (Rianto, et.al, 2020). The fast flow of information has infiltrated this generation, making it easy for them to obtain information, learn a lot, and become more receptive. The ease of access to information made possible by social media and the internet, however, is like two sides of a coin for this generation. It has the capacity to promote moral and spiritual decadence, but it can also increase knowledge and create a creative atmosphere (Budiati et al., 2018).

This demographic bonus is expected to end in 2038 and in 2045 the demographic structure will shift. The number of non-productive populations will increase, the dependency ratio is estimated to be above 50%, meaning that two people of productive age support more than one person outside of working age (non-productive), this situation indicates the phenomenon of an aging population. This trend of increasing dependency ratio has the potential to increase the burden of financing for the Indonesian economy. The higher the percentage of the elderly population in a country, the greater the expenditure on public pension funds (IFG, 2021)

On the other hand, the millennial generation, which is the backbone of the Indonesian economy, when preparing their retirement funds may not have crossed their minds. They are more focused on thinking about today's needs and desires. The ease of access to information and their interest in technology, show a higher entrepreneurial drive compared to the previous generation. The results of a study by Budiati et al., (2018), the informal economic sector has been an issue for quite a long time in Indonesia. In Indonesia, a large number of people continue to make their living in the unorganized sector. Workers in the unorganized sector play a significant part in boosting the economy and lowering unemployment. However, workers in the unorganized sector are susceptible to unstable income and a lack of job protection.

The vulnerability of the millennial generation with unstable income, and preparing for retirement funds may not have crossed their minds, because they are still more focused on thinking about current needs and desires. Meanwhile, generation X, the shadow of retirement is already in sight. Study Dorfman, (1989); Ferraro & Su, (1999), stated that individuals are surprised when they realize they can't retire because they didn't start saving money early in life. Due to the lack of savings resulting from this financial planning delay, hardship will ensue.

As a result, people must establish retirement objectives and make detailed financial plans. To set aside a portion of their money for investments or savings, people must manage their money. The act of reserving a portion of one's present income for future requirements is commonly referred to as saving. Therefore, the degree to which people save depends on their expectations for future income and their preferences for current consumption in the future. Prior research has attempted to identify the reasons behind personal saving habits and the variables that affect them, including psychological, environmental, and demographic factors (Tomar et al., 2021).

Financial knowledge is also an important factor in planning individual finances. A study conducted in Bukavu City, DRC, by Cibangala, (2019), demonstrated that a person's financial well-being is significantly impacted by their level of financial literacy. People from financially literate families also have more risk-tolerant attitudes toward financial management and planning, in addition to having more positive social attitudes. They believe that budgeting for their projects and future costs improves their well-being and financial stability. Lin et al., (2017) in their study demonstrated how financial literacy improves retirement planning. A person's retirement planning skills improve with their level of financial literacy.

According to Deputy Minister of SOEs II Kartika Wirjoatmodjo at the 2022 IFG International Conference, in Indonesia, the low development of pension funds is due to the low public awareness of future financial risks and awareness in preparing pension funds for the next generation. Insurance industry assets have only reached 8.5 percent of Indonesia's GDP, while pension fund assets were only 2.7 percent of GDP in 2020. This is a serious problem because Indonesia will face a large aging population in the coming decades. The risk management curve for personal financial risks of the Indonesian people is still very low. People tend to prioritize saving money in the bank so that their money can be withdrawn at any time, rather than putting their money into future investments. People also tend to invest in high-risk investment instruments because they want quick returns. (https://finansial.bisnis.com).

Strengthening and developing pension funds in Indonesia is very urgent in a relatively limited time. The penetration rate of public pension funds in Indonesia is still lower than in other developing countries such as Thailand, Brazil, and Mexico. The next IFG-Progress study will estimate the potential of Indonesian pension funds based on several scenarios of participant coverage and mandatory contribution levels. Indonesia's success in increasing pension fund contributions can not only help finance the old age of the Indonesian population but also become a large source of domestic funds for investment and fiscal financing (IFG, 2021). Based on the background above, the author is interested in studying "Does financial literacy mediate, future perspective, and risk tolerance on retirement fund saving behavior.

2. Literature Review

Studies on financial literacy and retirement planning have been carried out in several nations, including the United States, Canada, and the Netherlands. The findings of research conducted in these nations highlight some problems with the connection between financial literacy and the degree of private pension fund management. The most financially literate workers were more likely to use their retirement plans, contribute a larger portion of their pay, and have more equity in their account requirements, according to a case study on Federal Reserve employees in America (Lusardi, 2007; Lusardi & Mitchell, 2011). According to research from Canada, financial literacy and retirement planning are closely related. In the Netherlands, one in eight people make retirement savings decisions, with the system claiming to know a lot about retirement (Kalwij et al., 2017; Lusardi, 2007; Van Rooij et al., 2011).

There is a strong correlation between financial literacy research and retirement savings ownership. This demonstrates that retirement savings are influenced by financial literacy. This is also consistent with earlier research findings that financial literacy influences or has a relationship with retirement savings or planning. (Lusardi & Mitchell, 2011; Lusardi & Oggero, 2017; Van Rooij et al., 2011).

It can be argued that Indonesia still has unfinished initiatives by the government and other stakeholders to raise the community's level of financial literacy, particularly with regard to retirement products. In addition, it is also necessary to pay attention to the culture of the community who prepare retirement funds by utilizing traditional instruments such as land investment, building land, gold or gold pawn. Although they are not listed in the system, traditional investments are frequently made by the community, particularly in Padang, where the study is being conducted. This is anticipated to result in a low density and penetration rate of pension fund products.

A troubling picture of the current level of financial literacy in the United States can be found in our National Financial Capability Survey results. Many respondents don't understand important financial concepts and don't make retirement plans, even though they are only five to ten years away. The ability to create and carry out a retirement plan is the foundation of retirement security, so this is significant. Without a plan, people will only have half as much money when they retire. Additionally concerning is the lack of knowledge among the least educated and lowest-income groups, as these groups are more likely to be at risk of making bad financial decisions (Lusardi & Mitchell, 2011).

It is crucial to stress that the study focuses on people's choices to voluntarily contribute to other private pension plans. Other methods of building wealth for retirement exist as well. Some have argued that the net returns from investing in these pension plans, after accounting for comparatively high fees, are not as high as those from investing in more advanced financial products. However, investing in financial assets that do not restrict early withdrawals may yield short-term gains but long-term repercussions and may not be the most reliable indicator of retirement financial security. However, we leave open for future study the significance of financial literacy in the demand for advanced financial products (Cupák et al., 2019).

The act of reserving a portion of one's present income for future needs is commonly referred to as saving. Therefore, the degree to which a person saves depends on their expectations for future income and their preferences for current consumption in the future. The retirement planning of private employees in Blitar Regency is significantly impacted by research on financial literacy and saving habits. According to the study's findings, retirement planning is significantly impacted by financial literacy. This shows that the financial literacy of private workers will affect retirement planning. The Financial Literacy possessed by private workers will affect the preparation of emergency funds and insurance as well as knowledge of investment and its risks. Saving behavior also has a significant effect on the retirement planning of private workers in the Blitar Regency (Santoso et al., 2022).

The theory and the findings of several earlier studies allow for the formulation of the following conceptual framework:

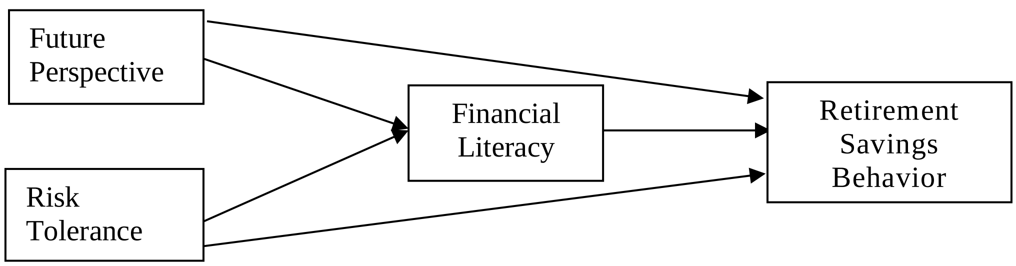


Figure 1. Framework

Furthermore, this study can develop the following hypotheses using the framework.:
H_1: Financial literacy has a significant impact on retirement saving behavior.
H_2: Future perspective has a significant impact on retirement saving behavior
H_3: Future perspective has a significant impact on financial literacy
H_4: Risk tolerance has a significant impact on financial literacy
H_5: Risk tolerance has a significant impact on retirement saving behavior
H_6: Financial literacy significantly mediates future perspective on retirement saving behavior.
H_7: Financial literacy significantly mediates risk tolerance on retirement saving behavior

3. Research Methods

The purpose of this explanatory study is to evaluate a theory or hypothesis that has been developed in relation to strengthening or rejecting the consistency of the theory or hypothesis that has been carried out in previous research. The entire Padang population is the subject of this study. The number of samples—103 respondents who will be the subject of the study will be determined using a random sampling technique approach with a 5% error tolerance.

Data was collected through the distribution of questionnaires, and the measurement scale employed a five-point Likert scale, which runs from 1 to 5. Five score is assigned to strongly agree responses, four to agree responses, three to neutral responses, two to disagree responses, and one to strongly disagree responses. Analysis technique using the SmartPLS program, this technique is specifically used to determine the feasibility of the role of moderating variables in the developed model.

Based on the results of the outer loading test analysis process for each variable, the PKP variable has 7 question items into 4 valid questions, the PMD variable has 6 valid question indicators, and only 2 question indicators. Only two of the five question indicators for the TR variable pass and only four of the five question indicators for the LK variable are valid. The analysis process goes through 3 analysis processes until all question indicators are feasible and valid. For more details, here are the results of the outer model test from this study:

Table 1. ***Convergent Validity and Reliability***

Construct	Item Code	Outer Loading	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
First Order Construct					
Financial Literacy	LK 1	0.821	0.867	0.910	0.717
	LK 2	0.905			
	LK 3	0.896			
	LK 5	0.757			
Retirement Savings Behavior	PKP 1	0.845	0.834	0.890	0.670
	PKP 2	0.916			
	PKP 3	0.836			
	PKP 5	0.741			
Future Perspective	PMD 1	0.916	0.705	0.869	0.768
	PMD 2	0.835			
Risk Tolerance	TR 3	0.883	0.746	0.887	0.797
	TR 4	0.902			

Source: Processed data (2024)

Table 1 tests reliability using composite reliability, seen from all instruments in measuring the constructs of accuracy, consistency, and precision, because the composite reliability value is greater than 0.70. When the outer loading value of every indicator is greater than 0.50, the validity test results for each indicator construct are deemed valid. The AVE and communality indicator values are above 0.50, meaning that the selected indicators can measure each latent variable (construct) well or it can be said that the 12 measurement models are reliable.

The results of the convergent validity and discriminant validity tests illustrate that the tested constructs can be declared valid and are able to measure the variables represented so that they can be used in the inner model analysis. The Fornall-Larcker criteria and the heterotrait-monotrait ratio, which are displayed in table 2 below, demonstrate the discriminant validity test:

Table 2. Discriminant Validity Fornell Larcker Criterion

	LK	PKP	PMD	TR
LK	0.847			
PKP	0.356	0.819		
PMD	0.297	0.564	0.877	
TR	0.358	0.118	0.212	0.893

Heterotrait-monotrait ratio (HTMT)

	LK	PKP	PMD	TR
LK				
PKP	0.411			
PMD	0.373	0.716		
TR	0.437	0.187	0.282	

Source: Processed data (2024)

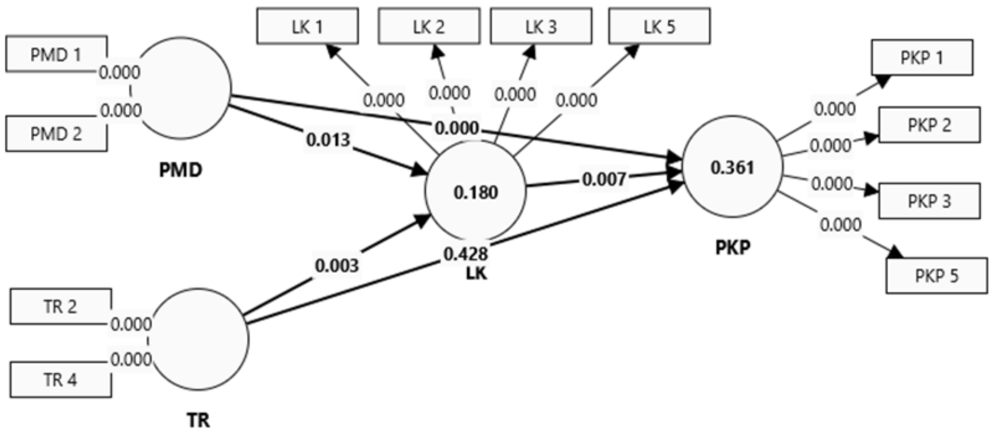
4. Results

There were 103 participants in this study, and the demographics of the participants were displayed according to their income and expenses, gender, status, age, and level of education. The majority of respondents (72.8%) are female, and the majority of them (53%), are married, according to the results of the tabulation of respondent characteristics. 54% of respondents have a diploma or bachelor's degree, indicating that financial literacy has a significant impact on respondents' retirement savings planning. Based on the respondents' jobs, almost half (41%) have jobs in the private sector, where the respondents' income is almost evenly distributed in all groups, namely income of less than IDR 3 million (38%), income> IDR 3 million - 5 million (31%) and respondents' income> IDR 5 million - IDR 10 million (25%). The majority of respondents' income is used to meet their needs, as evidenced by their expenses, which range from less than IDR 1 million to IDR 3 million (34%), > IDR 3 million to 5 million (25%), and > IDR 5 million to IDR 10 million (13%). If respondents have a sound financial foundation and a positive outlook on the future, they will consider their retirement saving plans.

Hypothesis Testing

Based on the findings of the research's outer model assessment, hypothesis testing can be carried out. Three criteria—convergent validity, discriminate validity, and composite reliability—are used to evaluate the outer model. Tables 3.3 and 3.4 above show the correlation between item scores and component scores determined using PLS, which is used to evaluate the convergent validity of the measurement model with reflective indicators. Furthermore, this study is worthy of hypothesis testing with the PLS procedure using the bootstrapping method. The estimated parameter significance results give important insights into how the research variables relate to one another. If the calculated t values are less than the t table (1.96), the alternative hypothesis (Ha) will be rejected, or the null hypothesis (Ho) will be accepted. The threshold for rejecting and accepting the proposed hypothesis is +1.96 for $p < 0.05$.

The results of the test were carried out with PLS using the bootstrapping method on the research sample, this research model is described in the following model:



Source: SEM PLS

Figure 2. Research Model After Bootstrapping Retirement Savings Behavior

Table 3 below shows the outcomes of the research hypothesis test:

Table 3. Path Coeficient and Result of Hypotheses Testing

Hipotesis	Path	Stdr Beta	Stdr Error	T-Value	P-values	Bias	Confidence Interval 2.5%	Confidence Interval 97.5%
H1	Financial literacy -> Retirement Savings Behavior	0.230	0.085	2.699	0.007	0.003	0.050	0.385
H2	Future Perspective -> Financial Literacy	0.232	0.093	2.485	0.013	0.009	0.038	0.404
H3	Future Perspective-> Retirement Savings Behavior	0.511	0.080	6.394	0.000	0.002	0.319	0.640
H4	Risk Tolerance -> Financial Literacy	0.309	0.103	2.995	0.003	0.001	0.089	0.494
H5	Risk Tolerance -> Retirement Savings Behavior	-0.073	0.092	0.793	0.428	-0.003	-0.253	0.111

Source: Processed data (2024)

Table 3 presents the findings of the hypothesis testing, which indicate that the hypotheses have a direct impact, which will be explained one by one. The hypothesis (H1) Financial literacy significantly improves retirement saving behavior, as evidenced by the P-value of 0.007, which is less than the 5% significance level ($\alpha = 5\%$). Hypothesis (H2) Future perspective has a significant positive effect on Financial Literacy is accepted, this can be seen from the P-value of 0.013 which is smaller than the 5% significance level (α = 5%). Hypothesis (H3) the P-value of 0.000, which is less than the 5% significance level (α = 5%), indicates that future perspective has a significant positive impact on retirement saving behavior. Hypothesis (H4) The P-value of 0.003, which is less than the 5% significance level (α = 5%), indicates that risk tolerance significantly improves financial literacy. Hypothesis (H5) is rejected because risk tolerance has no discernible impact on retirement savings behavior. The P-value of 0.428, which is higher than the significance level of 5% (α = 5%), illustrates this.

The effect of financial literacy as a mediating variable is found in Hypothesis 6 (H6) Financial literacy mediates future perspectives on Retirement Savings Behavior and Hypothesis 7 (H7) financial literacy mediates risk tolerance on Retirement Savings Behavior is not proven, meaning it is rejected. These results can be seen in table 4.3 specific indirect effects for P-values on H6 and H7 are greater than the significance level of 5% (α = 5%).

Table 4. Specific indirect effects

Hipotesis	Path	**Stdr Beta**	**Stdr Error)**	**T-Value**	**P- values**	**Bias**	**Confidence Interval**	
							2.5%	**97.5%**
H6	**PMD -> LK -> PKP**	0.053	0.032	1.685	0.092**	0.003	0.050	0.385
H7	**TR -> LK -> PKP**	0.071	0.037	1.904	0.057**	0.009	0.038	0.404

Source: processed data, 2024
**significance α = 10% Hypothesis accepted

Discussion

Hypothesis 1 indicates that it is accepted that financial literacy significantly improves retirement saving behavior. It can be said that the increasing financial knowledge of respondents will also increase their retirement fund preparation behavior. A good understanding of financial literacy related to calculating interest, inflation, and good investment products has an impact on increasing retirement fund preparation for respondents. Respondents in this study mostly have a diploma/bachelor's education as much as 52.4%. seen from the level of education which is mostly diploma/bachelor's their knowledge of finance is good, if there is an increase in their financial knowledge, then the impact will increase their readiness to prepare retirement funds.

This study is supported by research findings (Lusardi, 2007; Lusardi & Mitchell, 2011) Retirement planning-related financial literacy studies have been carried out in several nations, including the United States, Canada, and the Netherlands. The findings highlight several problems with the connection between financial literacy and the degree of private pension fund management. The most financially literate workers are more likely to have more equity in their account requirements, contribute a larger percentage of their salary, and take part in their retirement programs. A Canadian study also revealed a strong correlation between financial literacy and retirement planning. According to a study conducted in the Netherlands, one out of every eight respondents said they knew a lot about finances, particularly retirement (Kalwij et al., 2017; Lusardi, 2007; Van Rooij et al., 2011).

Ownership of retirement savings and financial literacy are significantly correlated. This demonstrates that retirement savings are influenced by financial literacy. This is also consistent with earlier research findings that financial literacy influences or has a relationship with retirement savings or planning (Lusardi & Mitchell, 2011; Lusardi & Oggero, 2017; Van Rooij et al., 2011). Lin et al., (2017) in their study showed that Retirement planning is positively impacted by financial literacy. A person's ability to plan for retirement improves with their level of financial literacy.

Hypothesis 2 future perspective has a significant positive effect on financial literacy is accepted. These findings suggest that respondents will increase their financial literacy to better prepare for their retirement plans the more positive they are about their futures. Judging from the age of the respondents, most of them are in productive age (43%) with a diploma/bachelor's degree (53%) and their jobs are mostly private employees (41%). Based on age, education, and occupation, it is very supportive for them to improve their future perspective and improve their financial literacy. Future perspective refers to the process of developing and assembling a vision for the future by breaking it down into short-, medium-, and long-term orientations. This allows people to have a positive outlook on the future, particularly in retirement, and then find a way to accomplish their goals by developing a positive vision and mission for their lives, which will lead to prosperity in the future, particularly in retirement. This description helps individuals in directing themselves to achieve systematic changes to achieve what they want (Rahmawati, 2018). In preparing a future plan, a person must have better financial knowledge, knowledge can be obtained formally or informally. For the millennial generation who understand technology, it is not an obstacle to obtaining this knowledge.

Hypothesis 3 is accepted because the future perspective has a major positive impact on retirement saving behavior. This finding indicates that respondents have a positive outlook on their future and consider saving for their later years. This is made possible by the demographics of the respondents, who are primarily private employees and primarily between the ages of 30 and 45, or productive age. A psychological factor that has drawn a lot of attention in the literature on financial planning is the future perspective. This gauges how much people concentrate on the future rather than the past or present (Jacobs-lawson & Hershey, 2005). This measures how much individuals focus on the future, rather than the present or the past. Future time perspective shows the seriousness of each individual in making decisions for the future regarding education, work, family, and preparation for retirement. A person's preference for a long-term perspective, as opposed to concentrating on the past or present, and having a long-term planning orientation is referred to as their future time perspective. When predicting retirement financial readiness, it has been demonstrated that both interact with risk tolerance and one another. Kooij et al., (2018) in their study confirmed that there is a significant positive relationship between future time perspective and retirement planning. Strengthened by the research results of Kerry &

Embretson, (2018) study examined the factors that precede retirement planning and discovered that two concepts that are highly relevant to the retirement planning field are financial risk tolerance and future time perspective.

The acceptance of Hypothesis 4, which states that the risk tolerance variable has a significant positive impact on financial literacy, indicates that respondents with a high-risk tolerance are more willing to make riskier investments to secure their financial stability in retirement and are more interested in learning more about investments, inflation, and retirement funds. Their productive age factor, education (mostly diplomas and bachelor's degrees), and work experience (mostly private employees) all strongly support this positive outcome.

One aspect of cognitive bias is the perception of risk. The more biased someone is in their actions, the less risky they perceive themselves to be (Ricciardi & Simon, 2000). Human behavior is significantly influenced by risk perception, particularly when making decisions in uncertain circumstances (Forlani & Mullins, 2000). If someone suffers a loss as a result of bad choices, they are likely to perceive the situation as risky, particularly if the loss affects their financial situation. As a result, risk perception is an individual's evaluation of a hazardous situation that is heavily influenced by their psychological traits and state (Nur Aini & Lutfi, 2019).

When return and risk are correlated, investing in less hazardous options yields lower returns and less wealth. The inclination to save and portfolio selection is influenced by risk tolerance. Short-term savings are less common among women who are less risk tolerant, Grable & Lytton, (1999); Jacobs-lawson & Hershey, (2005) reported that An aggressive retirement savings plan is more likely to be developed by someone with a higher risk tolerance.

Risk tolerance does not effect retirement savings behavior, hence hypothesis 5 is rejected. This means that respondents who have risk tolerance in terms of overall retirement investment growth are more important than risk levels and are willing to make risky investments to ensure financial stability in retirement, do not have an impact on increasing/decreasing their retirement savings planning. The respondents' attitude toward risk has no bearing on how they plan to save for retirement. When viewed from their opinions and expenses, most of their opinions are in the range < Rp. 3 million to Rp. 10 million, while their expenses are in the range > Rp. 1 million to Rp. 10 million. Respondents do not make risk tolerance an important part of deciding to save their retirement funds. Hypothesis 6 (H6) and hypothesis 7 (H7) financial literacy as a mediator of future perspective and risk tolerance on saving behavior are not accepted (rejected), meaning that financial knowledge does not have a better impact as an intermediary, and it turns out that the direct influence has a significant impact on retirement saving behavior.

5. Conclusion and Suggestion

The following conclusions can be made in light of the study's findings and discussion. Financial literacy has a significant positive impact on retirement saving behavior is accepted. This means that the increasing financial knowledge of respondents will also increase their retirement fund preparation behavior. Future perspective has a significant positive impact on financial literacy is accepted. According to these findings, respondents are more likely to improve their financial literacy to get ready for retirement if they have a more positive outlook on their future. Future perspective has a significant positive impact on retirement saving behavior is accepted. These results indicate that respondents are optimistic about their future lives and think about savings for their retirement. This is made possible by the demographics of the respondents, the majority of whom are private employees and are between the ages of 30 and 45, or productive age. It is acknowledged that the risk tolerance variable has a significant positive impact on financial literacy. This means that respondents who have a high-risk tolerance are more likely to be willing to take on risky investments in order to secure their financial stability in retirement, and they are also more likely to be more knowledgeable about inflation, pension funds, and investments in general.

However, risk tolerance does not affect Pension saving behavior, meaning that hypothesis 5 is rejected. It means that respondents who believe that overall pension investment growth is more significant than risk level and who are prepared to take on risky investments to secure their financial security in retirement do not influence how much or how little they plan to save for their pension. Financial literacy as a mediator of future perspective and risk tolerance with savings behavior are not accepted (rejected), meaning that financial knowledge does not provide a better impact as an intermediary, and it turns out that the direct influence that has a significant impact on retirement savings behavior There are still a lot of issues with this study, so it is suggested that the locus of control variables be added as mediating variables in future studies. The number of samples in this study is limited due to the short research period; therefore, more samples will be needed for future studies.

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