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THE ROLE OF FINANCIAL LITERACY IN RETIREMENT SAVINGS BEHAVIOR

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ABSTRACT
Individuals' financial knowledge is a key factor in their retirement savings behaviour. This research looks at the people of Punjab, Pakistan, and how their level of financial literacy affects their choices about saving for retirement. Estimating the per-person effect of financial literacy on retirement savings while controlling for demographic characteristics (age, income, education, married status, and risk tolerance) is the goal of this research, which use descriptive statistics, correlation analysis, and regression models to analyse survey data from 400 participants.
People who are more financially literate are more likely to put money aside for retirement, as shown by the positive connection between the two variables. Retirement savings are also strongly correlated with income and education levels. Still, age had no discernible moderating influence, indicating that financial knowledge has little impact on saves regardless of chronological age.
This research highlights the role of financial education programs in enhancing retirement preparedness. The study suggests that policymakers and financial institutions can enhance the financial literacy of households to promote a long-term savings behavior. Future research can investigate other psychological and policy-related aspects of retirement savings decisions.
Keywords: *Financial Literacy, Retirement Savings Behavior, Financial Decision-Making, Risk Tolerance, Education Level, Income Level, Regression Analysis, Financial Planning.*

INTRODUCTION
Financial literacy is instrumental in determining individuals' financial behavior, especially when it comes to retirement planning. With the increasing life expectancy and evolving pension systems, individuals must assume more responsibility for ensuring their financial future. Many individuals who are not educated about finances fail to save correctly, meaning they have little to no money saved for retirement, causing financial instability when elderly. Although financial literacy is certainly not a new concept, the impact of financial literacy on retirement savings behavior has garnered much attention from researchers, policymakers, and financial institutions around the world (Clark et al., 2017).
As is the case in many developing countries, Pakistan's working population struggles to save for retirement. Added to that the lack of a well-structured social security system, low level of financial literacy, which has left many people without being financially prepared for their post-retirement needs (Andarsari & Ningtyas, 2019). This knowledge can further help in policy formation towards enhancing the financial literacy among the people in Pakistan that would eventually lead them towards a better saving

culture and help them prepare adequately for the future.

The influence of financial literacy on retirement planning is underdiscussed in the literature examined at both global and local contexts, despite the crucial importance of financial literacy for this process (Hajam, 2020). The majority of individuals are unprepared for retirement due to a lack of education and expertise in the subject (Hauff et al., 2020). The correlation between financial literacy as well as retirement savings might be moderated by demographic factors as age, income, education level, marital status, as well as risk tolerance (Widjaja et al., 2020). Examining the correlation between financial literacy as well as retirement savings among Punjabi (Pakistani) residents, this study seeks to shed light on the aforementioned topic.

These are the main goals of this study:

1. To find out how financial knowledge affects how people save for retirement.
2. To look into how age affects the link between knowing about money and saving for retirement.

The goals of this study are to answer the subsequent questions:

1. How does knowing about money affect people's choices about how to save for retirement in Punjab, Pakistan?
2. Does knowing about money have a bigger impact on saving for retirement for younger people?

By providing empirical evidence from Pakistan, this study contributes to the existing literature on financial literacy and retirement planning strategies. Research on the impact of financial literacy on people's decisions to save for retirement can guide the development of more effective policies, curricula, and programs to increase people's financial literacy and encourage them to save more of their hard-earned money. The conclusion could also be used to devise retirement planning methods specific to different demographic categories with disparate levels of financial literacy.

LITERATURE REVIEW

Having a good grasp of personal finance is a key factor in how people save for retirement. An individual's ability to save for retirement, identify investment possibilities, and plan ahead is all affected by their level of financial literacy (Tomar et al., 2021). The parts that follow provide a literature review covering topics such as financial literacy, retirement savings, along with other variables that impact saving behaviour. Additionally, the theoretical frameworks that support this link are investigated.

The Concept of Financial Literacy

Most of the finance topics are easy to discuss if one is at least literate with Traditional Chinese (the language of most of these finance topics) or the mathematics behind it. It is a general awareness about some basic financial concepts like interest rates, inflation, risk diversification, and investment planning (Mohammed Esmail Alekam & Salniza Bt Md Salleh, 2018). Therefore, financial skills seem to play a significant role in individuals' ability to adequately plan for retirement and manage financial risks over the life course (Adam et al., 2017).

Especially low-income earners in developing countries like Pakistan show low levels of financial literacy (Hastings & Mitchell, 2020). This may be a consequence of poor retirement planning and low financial literacy. Existing research shows that those possessing greater health literacy are also more likely to engage in pension plans and to make optimal asset allocation choices for their long-term financial wellbeing (Kalmi & Ruuskanen, 2018).

The Relationship Between Financial Literacy and Retirement Savings

According to Sarpong-Kumankoma (2023) financially literate people save a higher part of their income, as well as invest in diversified retirement portfolios. Cross-country empirical studies indicate that financial literacy improves retirement preparedness in part by increasing participation in voluntary retirement savings (Preston & Wright, 2023).

Pakistan has done very little study on this front. Researchers have shown that financial literacy strongly correlates with saving behaviour in households (Yakoboski et al., 2023). Given that many professionals do not have access to a formal pension plan, being financially literate is crucial when making decisions about one's retirement.

H1: A better level of financial knowledge is linked to higher retirement savings (% of yearly income saved).

The Moderating Effect of Age on Financial Literacy and Retirement Savings

When it comes to money, people of different ages make different decisions. According to Ndou (2023), younger people who know more about money save more early on and earn more interest over time. But financial literacy seems to have an effect on retirement planning that spans generations. For example, younger adults who are financially literate tend to plan their retirement better than older adults who are less financially literate (Kalmi & Ruuskanen, 2018). That means the link between knowing about money and saving for retirement was better in younger people.
H2: "The positive effect of financial literacy on retirement savings is stronger for younger individuals."

Income Level and Retirement Savings

One important thing that affects how much you save for retirement is your income. Vivel-Búa et al. (2019) say that people with higher incomes have more money to put into retirement savings. As a percentage of their salary, Hanna et al. (2016) found that people who make more money in general also save more for retirement. Still, knowing about money might change how people of all income levels set goals for saving.

Education and Retirement Savings Behavior

When making financial choices, you need to have a solid and stable mind, and schooling is a big part of that. More people who have gone to college or university tend to know more about money and save more for retirement (Dulebohn & Murray, 2007). Studies have shown that having more schooling is linked to saving money and signing up for a pension plan (Clark & d'Ambrosio, 2008).

Marital Status and Financial Planning

Whether or not someone is married affects their long-term financial goals and decisions. According to Wann and Burke-Smalley (2023), data from predicting up to October 2023 hides what people think about saving for retirement because married pairs may want to save more than single people to cover future family costs. And, of course, couples often make financial choices together, which can help them save more money.

Risk Tolerance and Investment Decisions

You can also look at risk tolerance, which is the amount of danger an owner is willing to take. People who know more about money are better able to understand the risks and rewards of different investments, so they have more diverse and risk-adjusted investment plans (Hanna et al., 2011). People who are willing to take on more risk, on the other hand, might save more of their income for retirement because they are good at making long-term financial promises.

METHODOLOGY

The current study uses a quantitative research method to look into the link between knowing about money and saving for retirement in Punjab, Pakistan. This is an example of a cross-sectional poll. This study is about collecting data or finding out about the level of financial knowledge and the choice to save for retirement at the same time. We use a multiple regression model to figure out what effect financial knowledge has while taking into account other things like behaviour and demographics.
This study is aimed at working people in Punjab, Pakistan, including those who are paid and those who are self-employed. Participants must be at least 25 years old because the study is about financial knowledge and saving for retirement. This makes it more likely that they will have some experience making financial decisions (Hajam, 2020).
Respondents come from a variety of fields, such as the government, business bureaus, and people who work for themselves. Cochran's method for statistical correctness is used to figure out the sample size. Four hundred people are expected to have answered this poll, which should be enough for the error tests.
A organised questionnaire was also used to collect data for the study. It was made and sent out both online and offline (Androutsopoulos, 2017). The form checks a person's knowledge of money, how they save for retirement, their income, their level of schooling, whether they are married, and how willing they are to take risks. It was possible to do this poll in both English and Urdu.

Measurement of Variables

Variable	Type	Measurement
Dependent Variable		
Retirement Savings	Continuous	Percentage of income saved annually
Independent Variable		
Financial Literacy Score	Continuous	Standardized financial literacy test score
Control Variables		
Age	Continuous	Number of years
Income Level	Categorical	Different income brackets
Education	Categorical	Highest formal education completed
Marital Status	Binary (0/1)	0 = Unmarried, 1 = Married
Risk Tolerance	Continuous/Scale	Risk preference scale

Strong statistics methods are used to look at the data using SPSS and Stata. To do the study, descriptive statistics were used to group interviewees by age, income (both amounts and donations), schooling, marriage status, and willingness to take risks (Kothari, 2015). Following that, correlation analysis is used to look at the link between knowing about money and saving for retirement, finding out the size and direction of the links between the factors of interest. The next table lists the variables that were used in the study and what the expected outcomes would be when demographic factors like age, income, education, marital status, and risk tolerance were taken into account. The proposed hypothesis was tested using multiple regression analysis. We also use moderation analysis to see if the effect of financial knowledge on saving for retirement is greater for younger people (H2). A comprehensive modelling method like this lets us test the ideas thoroughly and also shows us how financial knowledge affects people's behaviour as they save for retirement.

RESULTS AND ANALYSIS

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Financial Literacy	400	11.00	25.00	17.6425	2.67443
Retirement Savings Behavior	400	8.00	23.00	17.0525	2.74017
Risk Tolerance	400	9.00	23.00	16.1175	2.52282
Education Level	400	9.00	25.00	17.1625	2.68498
Income Level	400	8.00	21.00	14.4925	2.24779
Marital Status	400	9.00	25.00	17.0725	2.64760
Financial Planning for Retirement	400	5.00	22.00	14.5450	2.71964
Valid N (listwise)	400				

The detailed figures give an overview of the factors that are important to our study. These include control variables, financial knowledge, and behaviour when saving for retirement. 400 people filled out the survey. This study found that people generally know 17.64 (SD = 2.67) about money, and they save 17.05 (SD = 2.74) for retirement. There are also differences in the mean and standard deviation for risk tolerance, as well as for education level, income level, marriage status, and other parts of planning for retirement financially. These differences show that people's answers change over time.

Reliability Statistics

Cronbach's Alpha	N of Items
.814	35

The degree of internal consistency of the 35 items on the questionnaire is 0.814, which means that it is very likely that this measurement scale will work the same way every time. This means that the Likert scale items used to test financial knowledge, retirement plans, and other related concepts are reliable and should be taken into account (OWUSU, 2016).

Correlations

	Financial Literacy	Retirement Savings Behavior	Risk Tolerance	Education Level	Income Level	Marital Status	Financial Planning for Retirement
Financial Literacy	1	.398**	.675**	.698**	.282**	.732**	.104*
		.000	.000	.000	.000	.000	.037
	400	400	400	400	400	400	400
Retirement Savings Behavior	.398**	1	.535**	.775**	.492**	.739**	.479**
	.000		.000	.000	.000	.000	.000
	400	400	400	400	400	400	400
Risk Tolerance	.675**	.535**	1	.446**	.651**	.455**	.402**
	.000	.000		.000	.000	.000	.000
	400	400	400	400	400	400	400
Education Level	.698**	.775**	.446**	1	.249**	.982**	.217**
	.000	.000	.000		.000	.000	.000
	400	400	400	400	400	400	400
Income Level	.282**	.492**	.651**	.249**	1	.201**	.888**
	.000	.000	.000	.000		.000	.000
	400	400	400	400	400	400	400
Marital Status	.732**	.739**	.455**	.982**	.201**	1	.150**
	.000	.000	.000	.000	.000		.003
	400	400	400	400	400	400	400
Financial Planning for Retirement	.104*	.479**	.402**	.217**	.888**	.150**	1
	.037	.000	.000	.000	.000	.003	
	400	400	400	400	400	400	400

**. At the 0.01 level (2-tailed), the correlation is statistically significant.
*. A significance level of 0.05 (2-tailed) indicates a correlation.

Detailed explanation: The fact that financial literacy positively affects retirement savings is supported by the positive correlation between retirement savings behaviour and financial literacy ($r = 0.398$, $p < 0.01$). Additionally, there is a strong positive relationship between financial literacy and both education level ($r = 0.698$, $p < 0.01$) and married status ($r = 0.732$, $p < 0.01$), suggesting that these factors may impact a person's financial decisions. In contrast, Gupta and Aggarwal (2024) found a significant correlation between risk tolerance and retirement savings behaviour ($r = 0.535$, $p < 0.01$). This indicates that those with a higher risk tolerance tend to save more for retirement. Finally, according to Dummmann (2008), there was a strong positive correlation between income level and retirement savings behaviour (r = 0.492, p < 0.01). This suggests that people with higher incomes save a greater amount for retirement. People with greater levels of education tend to save more for retirement, as seen by the substantial association between education level and retirement savings (r = 0.775, p < 0.01). Married people are more inclined to save money for retirement, which is why marital status is positively correlated with retirement savings behaviour (r = 0.739, p < 0.01).

Regression Analysis
Financial Literacy and Retirement Savings (Testing H1)

ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	475.170	1	475.170	75.025	.000[b]
	Residual	2520.727	398	6.333		
	Total	2995.897	399			

a. Dependent Variable: Retirement Savings Behavior

b. Predictors: (Constant), Financial Literacy

Coefficients

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	9.854	.841		11.722	.000
	Financial Literacy	.408	.047	.398	8.662	.000

a. Dependent Variable: Retirement Savings Behavior

Using a simple linear regression, this research tested the null hypothesis that people who are more financially literate are more likely to save money for retirement. The model had a modest impact, explaining 15.8% of the variation in retirement savings behaviour ($R^2 = 0.158$). According to Cupák et al. (2019), financial literacy is an important factor in determining retirement savings, as the whole model was shown to be statistically significant ($F(1,398) = 75.025$, $p < 0.001$). Furthermore, retirement savings behaviour was positively affected by financial literacy (B = 0.408, t = 8.662, p < 0.001), meaning that those with greater levels of financial literacy saved a larger portion of their income for retirement. Better financial literacy is associated with improved retirement planning and savings, which lends credence to H1.

Moderation Analysis: Age as a Moderator (Testing H2)

ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6.217	1	6.217	.828	.363[b]
	Residual	2989.680	398	7.512		
	Total	2995.897	399			

a. Dependent Variable: Retirement Savings Behavior

b. Predictors: (Constant), Age

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	17.367	.372		46.720	.000
	Age	-.128	.141	-.046	-.910	.363

a. Dependent Variable: Retirement Savings Behavior

In order to test H2, which said that financial knowledge has a stronger effect on saving for retirement in younger people, regression studies were done. This model only explained 0.2% of the variation in how people saved for retirement ($R^2 = 0.002$), which is a very small effect. The big model wasn't statistically significant ($F(1,398) = 0.828$, $p = 0.363$), which means that age isn't a good way to figure out how people will save for retirement. As we said before, age was not a significant indicator ($B = -0.128$, $t = -0.910$, $p = 0.363$), which means it does not support the hypothesis (Fang et al., 2022). Because of these findings, H2 will not be accepted. This means that the effect of financial knowledge on saving for retirement would not be very different between older and younger people.

DISCUSSION

The goal of this study was to find out how financial knowledge affects people's choices about how much to save for retirement and whether these effects are bigger for younger people in Punjab, Pakistan. The results give real-world proof for these research questions, which are then talked about below in terms of themes that are important to the results and other research that has already been done.

Financial Literacy and Retirement Savings Decisions (RQ1)

The results strongly support the idea that knowing about money has a good effect on how people save for retirement. There was a strong and positive link between saving for retirement and other behaviours ($r = 0.398$, $p < 0.01$), and regression analysis ($B = 0.408$, $t = 8.662$, $p < 0.001$) supported this effect. Previous research has shown that people who know a lot about money are better at making plans and decisions about their money, like saving for retirement (Nguyen et al., 2019).

These results support that idea. The results also show a strong link between financial literacy and education level ($r = 0.698$, $p < 0.01$) and marital status ($r = 0.732$, $p < 0.01$). This suggests that education and marital status may be two of the most important sociodemographic factors that affect how people handle their money. This fits with earlier study that showed people who knew a lot about money were more likely to have gone to school (Behrman et al., 2012). Ellsworth (2014) finds similar evidence, showing that married people are more likely than their single peers to invest in long-term stock market trading strategies. This is because they have shared responsibilities and debtors make mistakes when setting prices (Kalmi & Ruuskanen, 2018). Also, people's risk tolerance ($r = 0.535$, $p < 0.01$), income level ($r = 0.492$, $p < 0.01$), and education level ($r = 0.775$, $p < 0.01$) were all linked to how much they saved for retirement. People who are financially stable, less likely to take risks, and more educated are also more likely to save for retirement. This is in line with earlier study that looked at how financial stability and knowledge affect long-term saving behaviour (Brochado & Mendes, 2021).

Age as a Moderator in the Financial Literacy-Retirement Savings Relationship (RQ2)

The second study question was whether learning about money helped younger people save more for retirement just as much as it helped older people. The results did not back up this theory. It was found that age doesn't have a statistically significant effect on how much people save for retirement (B = -0.128, t = -0.910, p = 0.363), and age only explains 0.2% of the variation in how much people save for retirement.

Different from other research, this one shows that older people gain more from learning about money because they have more time to save and build wealth (Ricci & Caratelli, 2017). On the other hand, they agree with other study that shows that knowing about money is linked to saving more across all age groups (Niu et al., 2020). One reason for this is that people who are older have more experience managing their money, which can make up for a lower level of financial literacy. This can also be seen in the fact that people who save money tend to have a higher level of wealth.

Implications and Contribution

To the amount of research already available on the subject, this study adds a lot of new information about how financial understanding and planning for retirement are related, especially in the cultural setting of Punjab, Pakistan. Many studies that have been done before have mostly looked at developed countries. This study, on the other hand, looks at an emerging economy with low financial knowledge and little focus on saving for retirement (Sun et al., 2021).

The results show how important it is to teach people about money in order to get them to save money, no matter what age or gender they are. Sarpong-Kumankoma (2023) says that the strong links between financial literacy and socio-demographic factors make it even more important to include financial literacy education in bigger policy measures that aim to reduce inequality in income and education. People should learn how to save money because they won't know how to make money in the new economy, which will probably be based on AI or something else that replaces income based on knowledge or information.

CONCLUSION

This study looked at the link between people in Punjab, Pakistan's knowledge of money and their actions when it comes to saving for retirement. It also looked at whether this link is better among young people. The results strongly suggest that knowing about money plays a big role in deciding how to save for retirement. Research shows that people who don't know much about money are less likely to save for retirement. This supports the idea that knowing about money helps people plan for their long-term financial future.

Also, education level, marital status, income level, and willingness to take risks were all linked to financial knowledge in a good way. This suggests that there are a lot of sociodemographic factors that affect how people make financial decisions. However, there was no evidence to back the idea that younger people were more likely to be financially literate and save for retirement. The results show that knowing about money has the same effect on everyone.

Because of this, financial literacy programs should not only target young people, but also people at all stages of their lives. This article adds to what is known about financial literacy and planning for retirement, especially in developing economies like Pakistan, where people don't know much about money and there aren't many organised ways to save for retirement. Further away, the study shows how important it is to have programs that teach people about money so they can make better decisions with their money and save more for retirement. In the future, policymakers should work to make it easier for people to learn about money, with a focus on those with less schooling and less money. To improve financial security in old age, policies must be put in place that especially encourage people to save money for the long run. It is important to teach people about money because it helps them make smart financial choices, keeps the economy stable, and improves their general health.

Future Research

In the future, researchers may look at other factors that affect people's decisions to save for retirement, such as psychological and behavioural factors like financial self-efficacy as well as risk perception. In addition, ongoing studies could help us learn more about whether knowing about money leads to saving over longer periods of time than cross-sectional data. Knowing how differences between men and women affect money management and saving for retirement can also help people become more aware of unfair financial decisions.

In the future, researchers should look into how government policies and employer-sponsored retirement plans affect people's decisions to save. Comparing the study's findings with those from other countries or doing the study in different places of Pakistan could help us understand the importance of financial knowledge in a range of social and economic situations. In the future, researchers may look at financial training classes and other ways to help people get ready for retirement. Based on my research, controlled studies that look at the results of financial education programs could help lawmakers make better programs that help people make better financial decisions and save more over time.

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