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Influence of Financial Literacy and AI-Based Financial Tools on Retirement Planning among Working Women

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Abstract: ***Retirement planning is an important aspect of financial security, especially for working women who have to manage their personal savings, family expenses and other financial responsibilities. Financial literacy helps women make better financial decisions, while Artificial Intelligence (AI) provides new opportunities for managing personal finances and planning for retirement. The present study aims to examine the influence of financial literacy and AI-based financial tools on retirement planning among working women. It also focuses on their financial knowledge, awareness and usage of AI-based financial tools, attitudes towards retirement planning and the major barriers they face. The study adopts a descriptive and analytical research design and is based on primary data collected through a structured questionnaire from 100 working women. Percentage analysis and chi-square tests are used for analysing the data. The study is based on the Theory of Planned Behaviour (TPB). The findings reveal that most respondents have a moderate level of financial knowledge and understand the importance of retirement planning. However, many do not have a separate retirement savings plan or follow regular savings practices. The study also shows that awareness and usage of AI-based financial tools are limited, although most respondents are willing to use these tools in the future. Insufficient income, family expenses, household responsibilities, lack of awareness and data privacy concerns are the major barriers identified. The chi-square results show no statistically significant relationship between AI tool usage and retirement planning behaviour. The study concludes that improving financial literacy, encouraging regular savings and creating awareness about safe and reliable AI-based financial tools can help working women achieve better financial security and independence after retirement.***

Keywords: Financial Literacy, Artificial Intelligence (AI), AI-Based Financial Tools, Retirement Planning, Working Women, Theory of Planned Behaviour (TPB), AI Awareness, Perceived Usefulness, Trust, Financial Behaviour

1. Introduction

Retirement planning is important for financial security as it helps individuals maintain a stable life after retirement. Working women need to plan their retirement carefully because they have to manage family responsibilities, household expenses, children's education and personal savings. Financial literacy helps women understand savings, investments, insurance, pension schemes and financial risks, enabling them to make better financial decisions. The development of Artificial Intelligence (AI) has introduced new financial tools that help in budgeting, tracking expenses, estimating retirement needs and receiving financial suggestions. However, the use of these tools depends on awareness, technical knowledge, usefulness and trust. Concerns about data privacy, cyber fraud and inaccurate suggestions may also affect their adoption. The Theory of Planned Behaviour (TPB), developed by Ajzen (1991), explains how attitudes, subjective norms and perceived behavioural control influence an individual's intentions and behaviour. In this context, the present study examines the influence of financial literacy and AI-based financial tools on retirement planning among working women, focusing on their financial knowledge, attitudes, social influences, awareness, trust and use of AI-based tools.

2. Review of Literature

Research highlights the importance of financial literacy in influencing retirement planning and financial decision-making. **Ajzen (1991)** introduced the Theory of Planned Behaviour (TPB), which explains how individuals develop intentions and make decisions based on their attitudes, subjective norms and perceived behavioural control. This theory provides a foundation for understanding retirement planning behaviour among working women.

A study by **Lusardi and Mitchell (2007)** examined the relationship between financial literacy and retirement planning. The study highlighted that individuals with better financial knowledge were more likely to plan for their retirement. Similarly, Lusardi and Mitchell (2014) explained that financial literacy plays an important role in financial decision-making, particularly in understanding savings, investments, interest rates and financial risks. These studies establish the importance of financial knowledge in achieving long-term financial security.

Research by **van Rooij, Lusardi and Alessie (2011)** examined the relationship between financial literacy and stock market participation. Their findings indicated that individuals with higher financial literacy were more likely to participate in financial markets. The study highlights that financial knowledge influences investment decisions and encourages individuals to make informed financial choices.

The development of technology has also influenced personal financial management. **Venkatesh, Morris, Davis and Davis (2003)** developed the Unified Theory of Acceptance and Use of Technology (UTAUT), which explains technology adoption through factors such as performance expectancy, effort expectancy, social influence and facilitating conditions. These factors are relevant in understanding the willingness of working women to adopt AI-based financial tools for retirement planning.

Research by **Belanche, Casalo and Flavian (2019)** highlighted the role of artificial intelligence in financial services. Their research emphasised the importance of customer acceptance, perceived usefulness and trust in technology-based services. These factors help explain the reasons why individuals may accept or hesitate to use AI-based financial tools for managing their personal finances.

Similarly, **OECD (2023)** highlighted the importance of financial literacy, financial behaviour and financial inclusion in improving financial well-being. The study explained that financial knowledge and responsible financial behaviour help individuals make informed financial decisions and achieve better financial outcomes.

Research Gap

Previous studies have mainly focused on financial literacy, retirement planning and technology adoption separately. However, limited attention has been given to how financial literacy and AI-based financial tools together influence retirement planning among working women. There is also a need to understand how awareness, perceived usefulness and trust affect the adoption of AI-based financial tools. Therefore, the present study aims to examine these factors together using the Theory of Planned Behaviour (TPB) to understand retirement planning behaviour among working women.

Significance of the Study

The study is significant as it helps to understand the level of financial literacy among working women and their awareness and use of AI-based financial tools for retirement planning. It examines how financial literacy influences their attitudes, confidence and decisions towards retirement planning. The study also highlights the role of AI in improving personal financial management and retirement-related decisions. Further, it identifies the importance of trust and perceived usefulness in adopting AI-based financial tools. The study helps to understand the financial, technological and behavioural difficulties faced by working women while planning for their retirement. The findings may help financial institutions develop suitable retirement planning products and digital financial services to meet the needs of working women. It also provides useful insights for designing financial education programmes and promoting women's financial empowerment and long-term financial security.

Scope of the Study

The study focuses on examining the influence of financial literacy and AI-based financial tools on retirement planning among working women. The population of the study includes women employed in government, private and self-employed sectors. The subject scope covers financial literacy, awareness and adoption of AI-based financial tools, and retirement planning behaviour. The study is based on the Theory of Planned Behaviour (TPB), which explains the influence of attitudes, subjective norms and perceived behavioural control on retirement planning intentions and behaviour. The technological scope includes AI-based budgeting applications, automated financial advice, robo-advisory services, investment platforms and retirement calculators. The study also considers demographic factors such as age, educational qualification, monthly income, marital status, employment sector and work experience to understand their influence on financial literacy, AI adoption and retirement planning behaviour. The study considers both the financial and technological factors influencing retirement planning decisions.

3. Objectives of the Study

- To assess the level of financial literacy, awareness of AI-based financial tools and retirement planning behaviour among working women.
- To examine the influence of financial literacy on attitudes, subjective norms and perceived behavioural control towards retirement planning based on the Theory of Planned Behaviour (TPB).
- To analyse the role of AI-based financial tools in supporting retirement planning among working women.
- To examine the influence of AI awareness, perceived usefulness and trust on the adoption of AI-based financial tools for retirement planning.
- To analyse the influence of demographic and employment-related factors on financial literacy, AI adoption and retirement planning behaviour, and identify the major barriers faced by working women.

4. Research Methodology

The study adopts a descriptive and analytical research design. It examines the relationship between financial literacy, AI-based financial tools and retirement planning behaviour among working women. The study uses a quantitative approach based on primary data collected through a structured questionnaire.

Selection of Sample

The respondents selected for the study are working women belonging to different age groups, educational qualifications and employment sectors.The study considers women working in government organisations, private organisations and self-employment.

Sample Size

A total of 100 working women are considered for the hypothetical study.

Sampling Method

Convenience sampling is adopted for selecting the respondents.

Data Collection

The study is designed as a descriptive one and makes use of relevant information and it is collected through both primary and secondary sources. The primary data are collected from working women through structured questionnaire. Secondary data were collected from journals and websites.

Tools for Analysis

The data were suitably classified and analyzed based on the objective of the study. For analysis, statistical tools like percentages and chi square were used.

Hypothesis of the Study

- H_0: AI-based financial tools have no significant relationship with retirement planning behaviour among working women.
  H_1: AI-based financial tools have significant relationship with retirement planning behaviour among working women.
- H_0: AI awareness, perceived usefulness and trust have no significant influence on the adoption of AI-based financial tools for retirement planning.
  H_1: AI awareness, perceived usefulness and trust have significant influence on the adoption of AI-based financial tools for retirement planning.

5. Data Analysis

Table 1: Financial Literacy and Retirement Planning Behaviour

Particulars	Percentage
Level of financial knowledge	
Low	4%
Moderate	54%
High	29%
Very High	13%
Total	**100%**
Separate retirement plan	
Yes	50%
No	29%
Planning to start	21%
Total	**100%**
Regularity of retirement savings	
Every month	50%
Occasionally	13%
Rarely	12%
Never	13%
Only when surplus income is available	12%
Total	**100%**

Interpretation:
The analysis reveals that 54% of respondents possess moderate financial knowledge, while 42% report high or very high financial knowledge. However, only 50% have a separate retirement savings or investment plan. Another 29% do not have a separate plan, while 21% are planning to start one. The findings also reveal that only 50% of respondents save regularly every month. The remaining respondents follow irregular saving practices or do not save for retirement. This indicates that possessing financial knowledge does not necessarily translate into effective retirement planning behaviour. Greater emphasis should be placed on developing regular savings habits and encouraging long-term investment planning.

Table 2: Financial Literacy and TPB Components

TPB components and statements	Strongly Agree	Agree	Neutral / Disagree	Positive response
Attitude				
Financial knowledge helps in better retirement planning decisions	42	54	4	96%
Retirement planning is essential for future financial security	54	42	4	96%
Subjective norms				
Family and close people encourage retirement planning	42	38	20	80%
Perceived behavioural control				
Sufficient financial knowledge and control over income to plan for retirement	25	42	33	67%

Interpretation:
The findings indicate that financial literacy has an important perceived role in shaping positive attitudes towards retirement planning. About 96% of respondents agree or strongly agree that financial knowledge helps them make better retirement planning decisions. Similarly, 96% recognise retirement planning as essential for future financial security. Regarding subjective norms, 80% of respondents indicate that their family and close people encourage them to plan for retirement. This highlights the importance of family and social support in retirement-related financial decisions. In terms of perceived behavioural control, 67% of respondents express confidence in their financial knowledge and control over income. However, 33% remain neutral or disagree. This suggests that some respondents may face difficulties in converting their financial knowledge into actual retirement planning decisions. Overall, the findings suggest positive attitudes, social encouragement and perceived financial control towards retirement planning. However, a separate statistical test is necessary to establish the actual influence of financial literacy on the three TPB components.

Table 3: Role of AI-Based Financial Tools in Retirement Planning

Particulars	Percentage
Awareness of AI-based financial tools	
Yes	29%
No	50%
Not sure	21%
Total	**100%**
Usage of AI-based financial tools	
Yes	29%
No	71%
Total	**100%**
Perceived usefulness of AI tools	
Strongly Agree	42%
Agree	29%
Neutral	29%
Total	**100%**
Trust in AI-based financial suggestions	
Strongly Agree	33%
Agree	29%
Neutral	38%
Total	**100%**
Willingness to adopt AI-based financial tools	
Strongly Agree	38%
Agree	42%
Neutral	20%
Total	**100%**

Interpretation:
The findings indicate that awareness of AI-based financial tools is relatively low, with only 29% of respondents reporting awareness. A majority (50%) are not aware of these tools, while 21% are unsure about their availability and applications. The actual usage of AI-based financial tools is also limited, as 71% of respondents have never used them. However, 71% agree or strongly agree that these tools can help calculate future retirement needs and improve financial decisions. Regarding trust, 62% of respondents express positive opinions about the reliability of AI-based financial suggestions, while 38% remain neutral. Interestingly, 80% of respondents show willingness to adopt AI-based financial tools for future retirement planning. The findings indicate that although present awareness and usage are limited, working women demonstrate considerable interest in adopting AI-based financial technologies. Creating awareness and building trust may encourage their future adoption.

Table 4: Relationship between Usage of AI-Based Financial Tools and Retirement Planning Behaviour

Usage of AI tools	Has retirement plan	No separate plan	Total
Used AI tools	6	1	7
Never used AI tools	6	11	17
Total	12	12	24

Chi-square test results

Particulars	Value
Chi-square value (χ^2)	3.227
Degrees of freedom	1
Significance level	0.05
p-value	0.072
Critical value at 5%	3.841

Interpretation:
The calculated chi-square value is 3.227, which is lower than the table value of 3.841. The p-value (0.072) is greater than the 0.05 significance level. Therefore, the null hypothesis is not rejected.

The findings indicate that there is no statistically significant relationship between the usage of AI-based financial tools and retirement planning behaviour at the 5% significance level in the available sample. However, the observed pattern shows that respondents who have used AI-based financial tools are more likely to have a separate retirement plan.

Table 5: Relationship between AI Awareness and Willingness to Adopt AI-Based Financial Tools

AI awareness	Willing to adopt	Neutral	Total
Aware	5	2	7
Not aware / Not sure	14	3	17
Total	19	5	24

Chi-square test results

Particulars	Value
Chi-square value (χ^2)	0.002
Degrees of freedom	1
Significance level	0.05
p-value	0.963
Critical value at 5%	3.841

Interpretation:
The calculated chi-square value (0.002) is lower than the critical value of 3.841. The p-value of 0.963 is greater than 0.05. Therefore, the null hypothesis is not rejected.

The findings indicate that there is no statistically significant association between awareness of AI-based financial tools and willingness to adopt them for retirement planning in the available sample.

Table 6: Major Barriers to Retirement Planning and Adoption of AI-Based Financial Tools

Major barriers	Percentage
Insufficient income and savings	54%
Children's education and other family expenses	54%
Household and family responsibilities	46%
Concerns about data privacy and cyber security	42%
Lack of awareness about AI-based financial tools	38%
Lack of financial knowledge	29%
Lack of technical knowledge	21%
Lack of trust in AI recommendations	21%
Fear of investment risks	21%

Interpretation:
The findings reveal that insufficient income and savings and children's education and other family expenses are the major barriers, each reported by 54% of respondents. Household and family responsibilities are identified by 46%. Technological barriers also influence retirement planning and AI adoption. About 42% express concerns regarding data privacy and cyber security, while 38% report a lack of awareness about AI-based financial tools. Lack of financial knowledge is reported by 29%, whereas technical knowledge, trust and investment risk concerns are each reported by 21%. The findings indicate that retirement planning is affected by both financial and family-related responsibilities, while the adoption of AI-based financial tools is influenced by awareness, trust and security concerns.

6. Findings

- The study found that most respondents have a moderate level of financial knowledge, while some have high or very high financial knowledge.
- Only half of the respondents have a separate retirement savings or investment plan. Some respondents do not have a retirement plan, while others are planning to start one.
- Many respondents do not save regularly for retirement. Some save occasionally, rarely or only when they have extra income.
- Most respondents agree that financial knowledge helps them make better retirement planning decisions.
- Almost all respondents consider retirement planning important for their future financial security.
- Most respondents receive encouragement from their family members and close people to plan for retirement.
- Some respondents feel that they have sufficient financial knowledge and control over their income to plan for retirement. However, others face difficulties in managing their income for future savings.
- The study reveals that awareness of AI-based financial tools is low among working women. Many respondents are not aware of these tools.

- Most respondents have never used AI-based financial tools for financial planning.
- Many respondents believe that AI-based financial tools are useful for calculating future retirement needs and making better financial decisions.
- Most respondents have a positive opinion about the reliability of AI-based financial suggestions. However, some respondents are still unsure about trusting these tools.
- The study found that most respondents are willing to use AI-based financial tools for their future retirement planning.
- Most respondents belong to the younger age group. A large number are postgraduates and work in the private sector.
- Insufficient income and savings are major problems faced by working women in retirement planning.
- Children's education and other family expenses are also major barriers to retirement savings.
- Household responsibilities and family commitments make it difficult for some women to save regularly for retirement.
- Data privacy and cybersecurity concerns are important barriers to the use of AI-based financial tools.
- Lack of awareness about AI-based financial tools is another major problem affecting their adoption.
- The chi-square test reveals that there is no significant relationship between the use of AI-based financial tools and retirement planning behaviour among the respondents.
- The second chi-square test also shows that there is no significant relationship between awareness of AI-based financial tools and willingness to adopt them for retirement planning.

7. Conclusion

The study concludes that financial literacy plays an important role in retirement planning among working women. Most respondents have a moderate level of financial knowledge and understand the importance of saving for their future. However, many women do not have a separate retirement savings plan or save regularly. The study also reveals that awareness and usage of AI-based financial tools are limited, although most respondents are interested in using these tools for future retirement planning. Insufficient income, family expenses, children's education and household responsibilities are the major challenges faced by working women. Concerns about data privacy and lack of awareness also affect the adoption of AI-based financial tools. Therefore, working women should be encouraged to improve their financial knowledge, develop regular savings habits and make use of modern financial technologies. Financial institutions and government agencies should also create awareness about safe and reliable AI-based financial tools. These measures can help working women achieve financial independence and security after retirement.

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