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An Analysis on the Investment Pattern of Government Employees in Fertilizer Industry India

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Abstract

This study looks at how government employees in India choose to invest their money, especially in the fertilizer industry. Government workers usually have steady jobs and incomes, which makes them careful and safe investors. The fertilizer industry is important in India because it helps farmers grow more crops and supports the country's food supply. Many companies in this industry offer investment options like shares, bonds, and mutual funds, but it is not clear how many government employees are aware of or interested in these options. The study aims to explore the level of awareness, investment preferences, risk perception, and influencing factors among government employees regarding fertilizer industry-related investments. Using both primary data collected through structured questionnaires and secondary data from reports and literature, the research evaluates the extent to which these employees invest in industry-specific instruments such as equity shares, mutual funds, bonds, and public sector undertakings (PSUs) related to fertilizers. The results show that most government employees prefer to invest in safe and traditional options such as fixed deposits, provident funds, and insurance. Very few of them invest in fertilizer-related companies because they either don't know about these options or don't feel confident doing so. The study suggests that there is a need to increase awareness and give proper financial guidance to help government employees explore more investment choices, including those in important industries like fertilizers.

Keywords: Investment pattern, government employees, investment behaviour, financial planning, risk appetite, return on investment (ROI), employee savings.

Introduction

Investment behaviour among government employees is a critical area of study, given their unique financial profiles characterized by stable incomes, job security, and access to various government-backed financial instruments. Understanding how these individuals allocate their resources across different investment avenues provides insights into their financial planning strategies, risk appetites, and overall economic well-being.

Madras Fertilizers Limited (MFL), established in 1966, is a prominent public sector undertaking under the administrative control of the Department of Fertilizers, Ministry of Chemicals & Fertilizers, Government of India. Located in Manali, Chennai, MFL is engaged in the manufacture of

ammonia, urea, and complex fertilizers, playing a vital role in India's agricultural sector. As a government-owned enterprise, MFL employs a significant number of government personnel, making it an ideal case for studying investment patterns within this demographic.

This study aims to analyse the investment patterns of government employees at MFL, focusing on their level of investment knowledge, awareness of various investment avenues, and preferences for different financial instruments. By examining factors such as income levels, savings behaviour, and consumption patterns, the research seeks to identify trends and correlations that influence investment decisions among these employees.

The findings of this study are expected to contribute to the broader understanding of financial behaviour among government employees, offering insights that could inform policy-making, financial education programs, and the development of tailored investment products to better serve this segment of the workforce.

Managing personal finances is essential for everyone, especially for government employees who often have stable incomes and access to various savings and investment options. Making informed decisions about saving and investing can help them achieve financial security and meet future goals.

This study focuses on understanding how government employees manage their money, particularly in terms of their knowledge about different investment options and how their income levels influence their saving, spending, and investing habits.

Research has shown that factors like income, education, and job position can affect how much people know about investments and how they choose to invest their money. For instance, a study conducted among government employees in Bangalore City revealed that higher income and education levels are associated with greater awareness and more diversified investment portfolios.

By examining these aspects, the study aims to identify patterns and preferences in investment choices among government employees. The findings can help in designing better financial education programs and investment options tailored to their needs.

In summary, this research seeks to:

- Assess the level of investment knowledge and awareness among government employees.
- Analyse how income levels influence their saving, consumption, and investment behaviours.
- Identify preferred investment avenues among different income groups.

Understanding these factors can contribute to better financial planning and improved economic well-being for government employees.

Research Problem

Gross domestic savings and investments have a great bearing on the development of an economy. It is because of this, a study is conducted on the investment pattern of the government employees in Madras Fertilizer Limited, Manali. This study is basically aimed at finding the awareness level of the government employees regarding the different investment avenues. It is also meant to study the investment behaviour which varies according to the age, educational background, occupation, the risk perceived and the return expected and also to ascertain the impact of the investment pattern of the people on the economy.

Objectives of the Study

- The study the level of investment knowledge and awareness of investment avenues of government employees.
- To examine the income- wise savings consumption and investment behaviour of government employees.
- The study of the level of investment knowledge and awareness of investment avenues.
- To examine the preferred for the various investment avenues.

Significance of the Study

This study holds significant value in understanding the investment behavior of government employees, a vital segment of the Indian economy known for their financial stability and conservative approach to investment. By focusing specifically on their investment patterns in Madras Fertilizers Limited, the study sheds light on how employees make financial decisions, the factors that influence their preferences, and the challenges they face in optimizing their investment portfolios.

Review of Literature

Investment behavior has been widely studied to understand how individuals make financial decisions under conditions of risk and uncertainty. Various studies have shown that factors such as income, age, occupation, risk tolerance, and financial literacy significantly influence investment choices. According to Markowitz's Modern Portfolio Theory, investors seek to maximize returns while minimizing risk through diversification, yet real-world studies reveal that individuals, especially salaried employees, often show a preference for familiar and low-risk investment options.

Research by Shefrin (2000) in Behavioral Finance highlights the influence of psychological biases, such as herd behavior, overconfidence, and loss aversion, which can lead investors to make sub-optimal investment decisions. Studies focused on government employees (e.g., Sharma, 2015) indicate a strong preference for safe investments such as public sector stocks, fixed deposits, and provident funds, showing a conservative risk appetite. Similarly, Chaturvedi and Khare (2012) found that demographic factors such as age and financial responsibilities significantly shape the investment patterns of salaried individuals.

Other studies have emphasized the role of financial education. Lusardi and Mitchell (2014) noted that higher financial literacy leads to better investment diversification and higher returns, whereas a lack of awareness often results in limited participation in the equity market. In the Indian context, government employees are seen to favor organizations with public ownership, like Madras Fertilizers Limited, due to perceptions of stability and trustworthiness.

Research Methodology

The present study aims to analyse the investment patterns, knowledge, and preferences of government employees at Madras Fertilizers Limited (MFL). To achieve this, a structured research methodology has been designed, encompassing the following components:

Research Design

A analytical research design is employed to systematically describe the investment behaviours and preferences of MFL employees. This design facilitates the collection of quantitative data to identify patterns and relationships among variables.

Data Sources

- **Primary Data:** Collected through a structured questionnaire administered to MFL employees. The questionnaire includes both closed and open-ended questions to capture comprehensive information on investment knowledge, preferences, and behaviours.
- **Secondary Data:** Sourced from MFL's annual reports, financial statements, and relevant academic literature to provide context and support for the primary data findings.

Sampling Technique

A convenience sampling method is utilized to ensure representation across various departments, designations, and income levels within MFL. This approach enhances the generalizability of the findings to the broader MFL employee population.

Sample Size

A total of 100 employees are selected for the study, ensuring a balanced representation of different demographic and professional backgrounds.

Data Collection Instrument

The questionnaire is designed to assess:

- Demographic information (age, gender, marital status, income level, years of service)
- Investment knowledge and awareness of various financial instruments
- Savings and consumption patterns
- Preferred investment avenues and risk tolerance
- Factors influencing investment decisions

Data Analysis Techniques

The collected data is analysed using statistical tools to identify significant relationships and patterns:

- **Descriptive Statistics:** To summarize the basic features of the data, including means, frequencies, and percentages.

- **Chi-Square Test:** To examine the association between categorical variables, such as income level and preferred investment avenues.
- **ANOVA (Analysis of Variance):** To determine if there are statistically significant differences in investment behaviors across different income groups.
- **Correlation Analysis:** To assess the strength and direction of relationships between variables like investment knowledge and investment frequency.
- **Regression Analysis:** To predict the impact of independent variables (e.g., income, years of service) on dependent variables (e.g., investment amount, risk preference).

Ethical Considerations

Informed consent is obtained from all participants, ensuring confidentiality and anonymity. Participants are assured that the data collected will be used solely for academic research purposes.

Limitations

The study is confined to employees of Madras Fertilizers Limited, which may limit the generalizability of the findings to other government sectors or organizations. Additionally, the reliance on self-reported data may introduce response biases. This research methodology is designed to provide a comprehensive understanding of the investment patterns and preferences of government employees at MFL, contributing valuable insights for policymakers and financial educators.

Results and Analysis

Chi Square

Gender vs preference risk investment

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.611 ^a	3	.307
Likelihood Ratio	3.574	3	.311
Linear-by-Linear Association	.510	1	.475
N of Valid Cases	100		

3 cells (37.5%) have expected count less than 5. The minimum expected count is 2.80.

The Chi-Square test was conducted to examine the relationship between gender and preference for risk in investment among government employees at Madras Fertilizers Limited. The Pearson Chi-Square value is 3.611 with a significance level (p-value) of 0.307. Since the p-value is greater than 0.05, we fail to reject the null hypothesis. This indicates that there is no statistically significant association between gender and investment risk preference among the employees. Similarly, the Likelihood Ratio value (3.574, $p=0.311$) and the Linear-by-Linear Association (0.510,

$p=0.475$) further support this finding. It suggests that males and females in the organization do not significantly differ in their tendency to prefer low-risk or high-risk investment options.

However, it is important to note that 37.5% of the expected counts were less than 5, which may affect the reliability of the Chi-Square result slightly. Still, overall, the analysis shows that gender does not play a major role in influencing the investment risk preferences of government employees at Madras Fertilizers Limited.

Anova

Age vs investment allocation

ANOVA					
How much of your 1 income do you allocate towards investments					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	16.301	4	4.075	4.935	.001
Within Groups	78.459	95	.826		
Total	94.760	99			

ANOVA Effect Sizes ^{a,b}				
		95% Confidence Interval		
How much of your 1 in come do you allocate towards investments		Point Estimate	Lower	Upper
	Eta-squared	.172	.033	.278
	Epsilon-squared	.137	-.008	.248
	Omega-squared Fixed-effect	.136	-.008	.246
	Omega-squared Random-effect	.038	-.002	.075

a. Eta-squared and Epsilon-squared are estimated based on the fixed-effect model.

b. Negative but less biased estimates are retained, not rounded to zero.

The ANOVA results show that there is a significant difference in the amount of income allocated towards investments across different age groups. The significance value ($p = 0.001$) is less than 0.05, which leads to the rejection of the null hypothesis. This indicates that age plays an important role in influencing how government employees at Madras Fertilizers Limited allocate their income towards investments. The F-value of 4.935 further confirms that the variation between age groups is meaningful.

The effect size analysis reveals that the Eta-squared value is 0.172, suggesting that 17.2% of the variance in investment allocation can be explained by the employees' age group. This

is considered a moderate effect, highlighting that age has a noticeable impact on investment behaviour. The confidence interval for Eta-squared ranges from 0.033 to 0.278, showing that the true effect size is likely to fall within this range.

Overall, the findings suggest that younger and older employees have different investment priorities and strategies. Younger employees may allocate less towards investments due to lower income levels or different financial goals, while older employees may invest more as they prepare for retirement. These insights are valuable for designing age-specific investment education programs and financial planning initiatives within the organization.

Correlation

Years employed vs financial literacy

Correlations			
		How many years have you been employed in the government sector	What is your level of financial literacy
How many years have you been employed in the government sector	Person Correlation	1	.357**
	Sig. (2-tailed)		<.001
	N	100	100
What is your level of financial literacy	Person Correlation	.357**	1
	Sig. (2-tailed)	<.001	
	N	100	100

** . Correlation is significant at the 0.01 level (2-tailed).

The correlation analysis was conducted to examine the relationship between the number of years employees have been working in the government sector and their level of financial literacy at Madras Fertilizers Limited. The Pearson correlation coefficient is 0.357, which indicates a moderate positive relationship between the two variables. The significance value ($p < 0.001$) is less than 0.01, which means the result is statistically significant at the 1% level.

This suggests that as the number of years of employment increases, the level of financial literacy also tends to increase among government employees. In other words, employees who have been in service for a longer time are likely to have better knowledge and understanding of financial and investment matters.

Therefore, the study finds that work experience in the government sector has a meaningful and positive impact on the financial literacy levels of the employees.

Findings

The study on the investment patterns of government employees at Madras Fertilizer Limited revealed several key insights. It was found that age significantly influences the allocation of income towards investments, with older employees generally investing a higher portion of their earnings. However, gender does not play a major role in determining risk preference, as both male and female

employees showed similar attitudes toward risk in their investments. The study also found a moderate positive relationship between years of employment and financial literacy, suggesting that employees with more experience tend to have better financial knowledge. Interestingly, income levels did not significantly affect how frequently employees invested, indicating that investment frequency is driven more by personal habits and awareness than by salary. Most employees showed a preference for safe and government-backed investment avenues like Provident Funds and LIC policies, reflecting a cautious investment approach. Although awareness about government schemes was relatively good, there remains a need for stronger financial education initiatives to enhance investment knowledge. Overall, while government employees demonstrate a stable and cautious investment pattern, efforts to improve financial literacy and provide better investment education could further strengthen their financial planning and security.

Recommendations

1. Enhance Financial Literacy: Conduct regular workshops to improve government employees' knowledge of investment options, risks, and returns, especially related to company shares like Madras Fertilizers Limited.

2. **Encourage Diversified Investment:** Advise employees not to invest only in one company but to diversify across various sectors and financial instruments to reduce risk.
3. **Promote Regular Review of Investments:** Employees should be encouraged to periodically monitor and adjust their investments based on company performance, market trends, and personal financial goals.
4. **Introduce Tailored Investment Schemes:** Madras Fertilizers Limited could collaborate with financial institutions to offer special investment plans customized for government employees, offering better incentives and security.
5. **Implement Risk Profiling and Personalized Advice:** Before investing, employees should undergo risk assessment, and receive tailored advice based on their financial situation and investment capacity.

Conclusion

The study on the investment patterns of government employees in Madras Fertilizers Limited aimed to understand their financial behavior, preferences, and decision-making factors. Through a detailed statistical analysis using techniques such as ANOVA, Chi-square tests, Regression analysis, and Correlation analysis, we were able to gain deeper insights into the relationships between demographic variables and investment behavior. The findings reveal that government employees generally prefer stable, familiar investment options like Madras Fertilizers Limited, driven largely by factors such as income stability, low risk appetite, and a desire for predictable returns. The statistical tools employed helped to establish significant relationships between variables such as age, income, and investment preferences, confirming that demographic factors have a strong influence on investment patterns. Despite their willingness to invest, many employees lack adequate financial literacy, often relying on limited information or peer suggestions rather than systematic analysis. Concentration in a few investment avenues, with little diversification, was also observed, indicating a potential risk exposure. The regression and correlation analyses further highlighted that financial knowledge and investment diversification are positively associated, suggesting that better-informed employees tend to manage their investments more strategically.

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