

# EXPLORATORY FACTOR ANALYSIS OF INVESTMENT PLAN IN INDIA

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## Abstract

Savings and investments are the two essential ingredients of the capital formation of any country. Now a day's there are multiple options are available for investments and saving. The present paper focuses on various investment options like Banks, LIC, PPF, Bonds, Mutual Funds, Real estate, Commodity Market, Gold, Equity Shares, Futures & Options, and instruments of the Post Office like NSC & MIS to trace the preference of an investor. A survey of 300 respondents has been carried for finding the best investment options available in the current situation. Data analysis has been done by statistical tools like descriptive statistics and exploratory factor analysis

**Key Words:** Investments Options, Descriptive Statistical Analysis, Exploratory Factor Analysis

## Introduction

Developing countries, like India, require a high rate of capital formation to secure the desired level of growth. Investments are largely depending upon the behavior of the investor as well as the availability of different investment avenues. The choice is required to be made amongst available alternative options for investments. An awareness of these investment avenues is extremely important to make the right investment decisions that will suit the different needs of different individuals. To trace the real aspects of different investments option's present study is mainly focusing on- Banks, LIC, PPF, Bonds, Mutual Funds, Real Estate, Commodity Market, Gold, Equity Shares, Futures & Options, and instruments of Post Office like NSC & MIS. The study discusses the investment options and preferences of investors towards the various investment alternatives. Primary data has been collected through a questionnaire. 300 respondents have been taken for the study. Descriptive statistics and Factor Analysis have been used for finding the best investment options in the current scenario in India

## Literature Review

1. (S.Poongavanam et.al, 2013) studied investment in the Indian scenario. They found that Indian economic reforms, annual growth rate, curbing inflation rate, etc are beneficial for the domestic and foreign investment in recent years. Investors should understand about investing in India for long term growth.
2. (Reddy, 2017) presented a study on an analysis on investment in mutual funds through systematic investment planning a smart investors preference. He found that the most influencing factors for the selection of Mutual Fund scheme in India are high returns, net asset value, market trends, tax policy, and reputation of mutual fund in their order of priority. Most of the investors preferred to invest their money in open-ended schemes of Mutual Funds
3. (Mubeen, 2018), presented a paper on the perception of Indian women investors towards investment in mutual funds. This paper marked an attempt to identify various factors affecting the perception of women investors regarding investment in mutual funds. He suggested that mutual fund companies have to identify the areas required for improvement to create greater awareness among women investors regarding investment in mutual funds
4. (Lanjekar, 2018), conducted a study on saving and investment patterns of salaried class people with special reference to Pune city (India). The researcher had analyzed and found that that salaried employees considered the safety as well as a good return on investment that is invested on regular basis. Respondents are much more aware of the different investment avenues available in India except for female investors.
5. (Pandey, 2019) studied on savings and capital formation in India. The paper

highlighted the issues in infrastructure and MSME financing and proposed an agenda for reforms. Reduced financial repression, deep and liquid bond markets, improvement in banking regulation, improved access to bank credit to MSMEs should be the plan for financial sector reforms.

### Objectives of the study

1. To understand the awareness level of the people about various investment avenues.
2. To find out the most preferred investment avenues among the people.
3. To understand and analyze the factors considered for investing.
4. To find out the overall criterion of investors regarding investment.

### Research methodology

- **Data Collection:** The present study is mainly based on primary data. The required data were collected through a questionnaire.
- **Sources of Data:** Primary data was collected through a questionnaire and Secondary data was collected from the

reports, articles, journals, documents, printed literature, certain websites, and other online databases, etc.

- **Sample Size** The study has taken around 300 respondents who are the part of working population in few cities in MP.
- **Investment Avenues covered in this paper:** Banks, LIC, PPF, Bonds, Mutual Funds, Real estate, Commodity Market, Gold, Equity Shares, Futures & Options and instruments of Post Office like NSC & MIS.
- **Statistical tools used:** Analysis of data and interpretation is done by using Descriptive analysis and Factor Analysis(Jamie DeCoster, 1998)
- **Limitations:**Time Constraints was considered to be the major limitation of the study. The study is limited to the extent of the availability of data. The study has been restricted to only a few cities in MP.

### Analysis and Interpretation

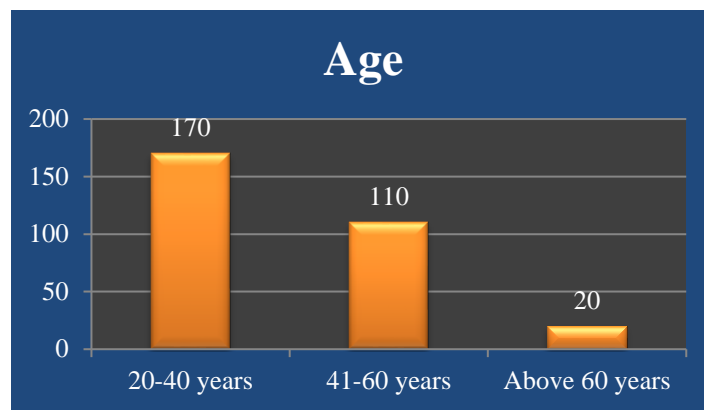
#### 1. Personal Profile of the People:

**Table 1:Age of the respondents**

Age	Frequency	Percentage
20-40 years	170	56.7
41-60 years	110	36.7
Above 60 years	20	6.6
Total	300	100

From the above table, it can be inferred that the majority of the respondents (56.7%) belong to the age group of 20-40 years. A (36.7%) of the

respondents are fall in the age group of 41-60 years. A (6.6%) of the respondent belongs to the age group of above 60 years

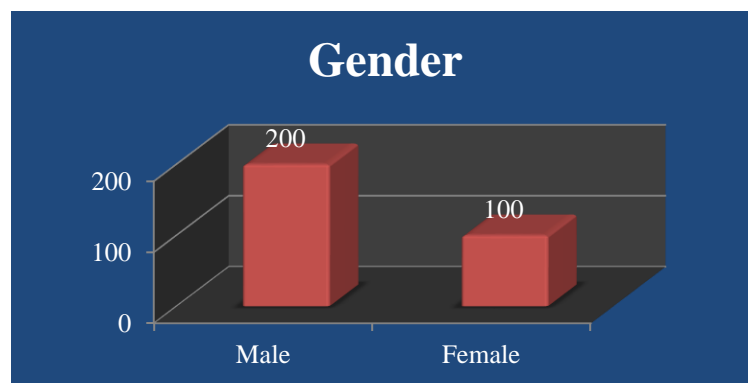
**Figure 1**

## 2. Gender of the respondents

**Table 2: Gender of the respondents**

Gender	Frequency	Percentage
Male	200	66.7
Female	100	33.3
Total	300	100

The above table representing that the majority of the respondents are male. Only 33.3% of the respondents are female.

**Figure 2**

## 3. Marital Status

**Table 3: Marital Status of the respondents**

Marital Status	Frequency	Percentage
Married	230	76.7
Unmarried	70	23.3
Total	300	100

From the above table, it is clear that 76.7% of respondents are married and 23.3% of respondents are unmarried.

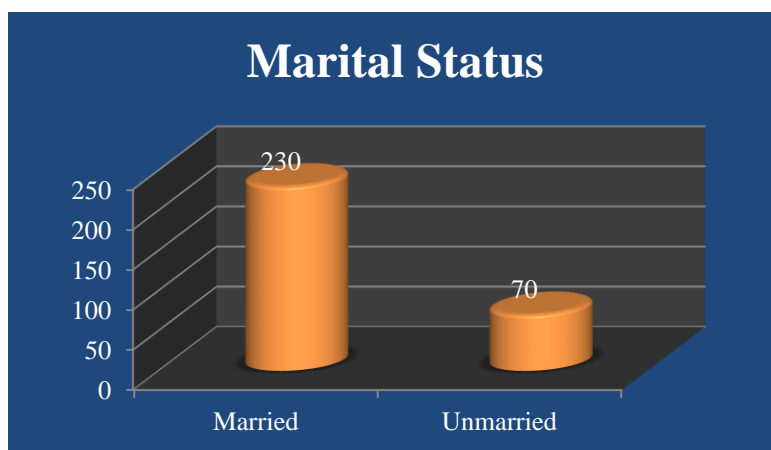


Figure 3

#### 4. Educational qualification of the respondents

**Table 4: Educational qualification of the respondents**

Educational qualification	Frequency	Percentage
School Education	10	3.3
College Education	100	33.3
Professional	160	53.4
Others	30	10
Total	300	100

From the above table, it can be inferred that a 53.4% of the respondents are professional and 33.3% of the respondents have completed college education and 3.3% respondents done school

education and 10% respondents belong to others educational background.

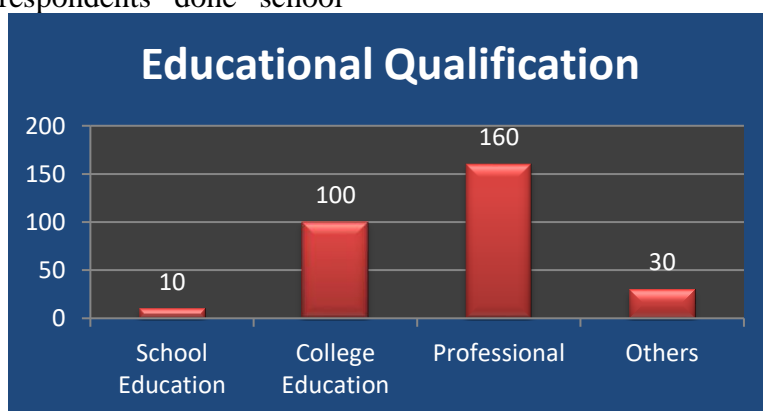


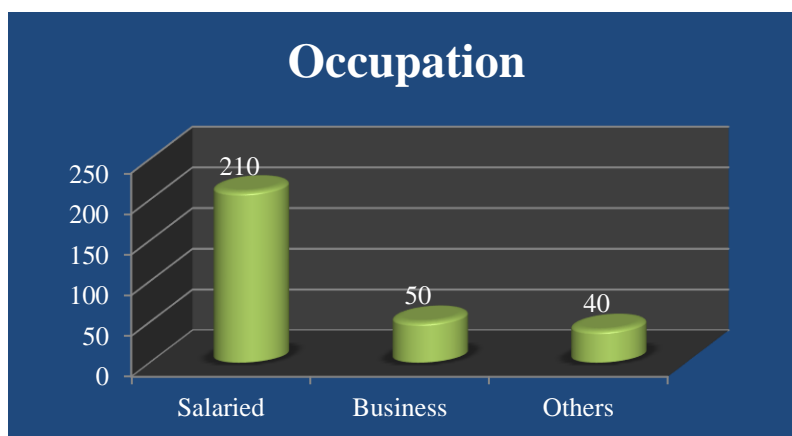
Figure 4

#### 5. Occupation/Profession

**Table 5: Occupation/Profession of the respondents**

Occupation/Profession	Frequency	Percentage
Salaried	210	70
Business	50	16.7
Others	40	13.3
Total	300	100

From the above table, it can be inferred that the majority of the respondents are salaried and 16.7% of the respondents are doing business whereas 13.3% of respondents have other professions.

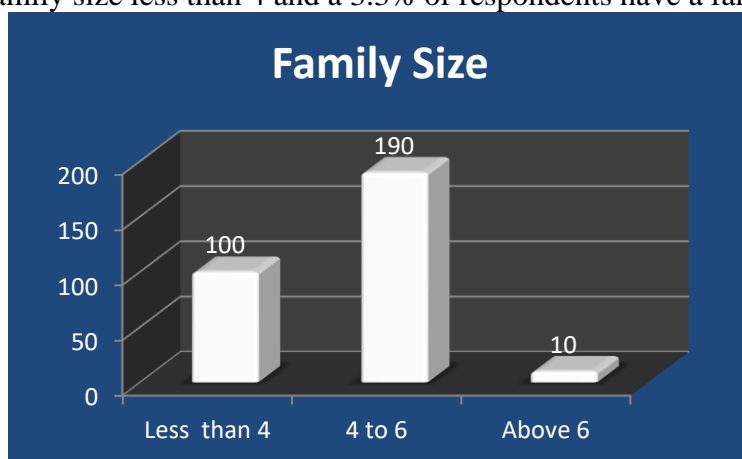
**Figure 5**

## 6. Family Size

**Table 6: Family size of the respondents**

Family Size	Frequency	Percentage
Less than 4	100	33.3
4-6	190	63.4
Above 6	10	3.3
Total	300	100

From the above table, it is clear that the majority of the respondents have a family size (4-6) and a 33.3% of the respondents have a family size less than 4 and a 3.3% of respondents have a family size above 6.

**Figure 6**

## 7. No. of earning members

**Table 7: No. of earning members**

No. of earning members	Frequency	Percentage
1	100	33.3
2	180	60
3 & above	20	6.7
Total	300	100

From the above table, it is clear that the majority of the respondents have 2 earning members and 33.3% of respondents have 1 earning member, and 6.7% of respondents have 3 & above earning members.

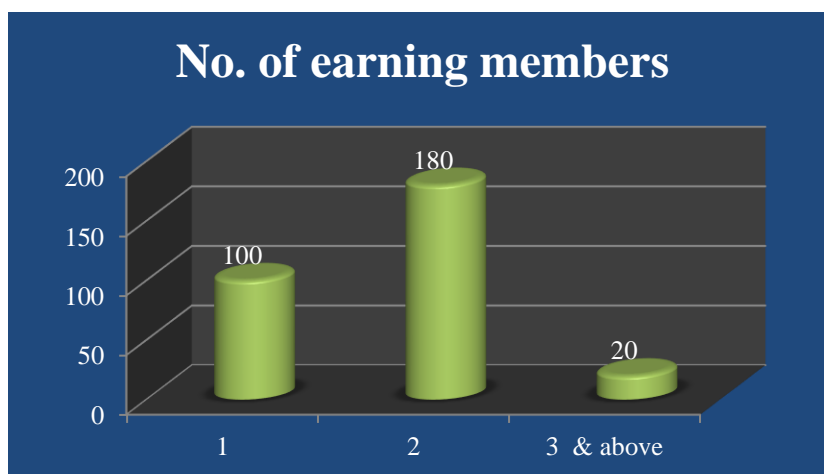


Figure 7

## 8. Monthly Income

Table 8: Monthly income of the respondents

Monthly Income	Frequency	Percentage
Below Rs.20,000	10	3.3
Rs.20,000 to Rs.40,000	110	36.7
Rs.40,000 to Rs.60,000	70	23.3
Rs.60,000 to Rs.80,000	20	6.7
Above Rs.80,000	90	30
Total	300	100

From the above table, it is inferred that 36.7% of respondents have a monthly income of Rs.20,000 to 40,000. 30% of the respondents have monthly income above Rs.80,000. 23.3% of the respondents have a monthly income of Rs.40,000 to Rs.60,000. 6.7% of the respondents have monthly income Rs.60,000 to rs.80,000 and 3.3% of the respondents have a monthly income below Rs.20,000.

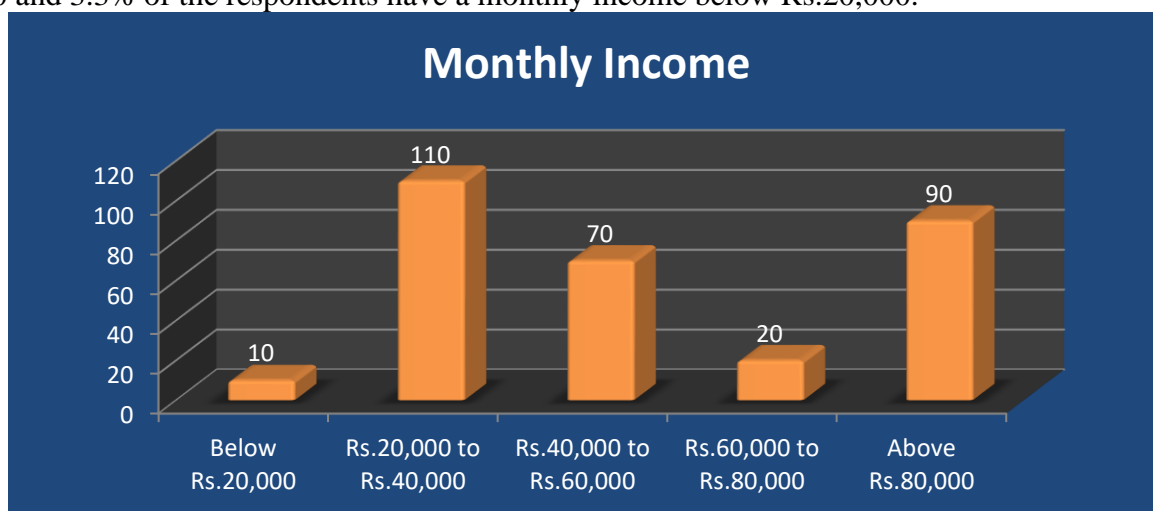


Figure 8

## Results of Factor Analysis

Table 9

KMO and Bartlett's Test
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Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.465
Bartlett's Test of Sphericity	Approx. Chi-Square	618.334
	df	36
	Sig.	.000

- **KMO and Bartlett's Test:** Bartlett's test is the indication of the strength of the relationship among variables. Here significance is less than 0.05. It means that the correlation matrix is not an identity matrix.

**Table 10**

Communalities		
	Initial	Extraction
Shares	1.000	.840
Debentures/Bonds	1.000	.847
Stock Futures & Options	1.000	.914
Mutual Funds	1.000	.489
National Saving Certificate/ Public Provident Fund/Provided Fund	1.000	.850
Fixed Deposits	1.000	.764
Insurance Policies	1.000	.766
Real Estate	1.000	.691
Gold/Silver	1.000	.566
Extraction Method: Principal Component Analysis.		

- **Communalities**

The above table shows communalities. It explains how much of the variance (i.e. the communality value which should be more than 0.5 to be considered for further analysis. Else these variables are to be removed from further steps factor analysis) in the variables has been accounted for by the extracted factors.

**Table 11**

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.913	32.370	32.370	2.913	32.370	32.370	2.740	30.447	30.447
2	2.713	30.149	62.519	2.713	30.149	62.519	2.709	30.101	60.549
3	1.101	12.236	74.755	1.101	12.236	74.755	1.279	14.206	74.755
4	.863	9.593	84.348						
5	.542	6.024	90.372						
6	.487	5.409	95.781						
7	.186	2.071	97.852						
8	.139	1.543	99.395						

9	.054	.605	100.000						
Extraction Method: Principal Component Analysis.									

- **Total variance explained:** Eigenvalue reflects the number of extracted factors whose sum should be equal to some items that are subjected to factor analysis. The above table shows all the factors extractable from the analysis along with their eigenvalues.



Figure 9

- **Scree plot**

The scree plot is a graph of the eigenvalues against all the factors. The graph is useful for determining how many factors to retain. The point of interest is where the curve starts to

flatten. It can be seen that the curve begins to flatten between factors 3 and 4. Note also that factor 4 onwards have an eigenvalue of less than 1, so only three factors have been retained.

Table 12

Component Matrix <sup>a</sup>			
	Component		
	1	2	3
Shares	.793	.397	-.233
Debentures/Bonds	.039	.911	-.127
Stock Futures & Options	.387	.538	.690
Mutual Funds	.273	.640	-.067
National Saving Certificate/ Public Provident Fund/Provided Fund	.405	-.486	.670
Fixed Deposits	-.641	.528	.272
Insurance Policies	-.514	.700	.107
Real Estate	.816	.095	-.127
Gold/Silver	.744	.115	.003
Extraction Method: Principal Component Analysis.			
a. 3 components extracted.			

- **Component matrix**



The above table shows the loadings (extracted values of each item under 3 variables) of the Nine variables on the three factors extracted. The higher the absolute value of the loading, the more the factor contributes to the variable (We have extracted three variables wherein the 9 items are divided into 3 variables according to most important items which similar responses in component 1 and simultaneously in component 2 and 3).

### Conclusion

Various investment options like Banks, LIC, PPF, Bonds, Mutual Funds, Real estate, Commodity Market, Gold, Equity Shares, Futures & Options, and instruments of the Post Office like NSC & MIS are taken for finding the best investment option. The three major components are extracted through factor analysis. It is concluded that Shares, Debentures/Bonds, and Stock Future&Options are three investment options preferred by investors according to the responses of 300 respondents.

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