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A Study on Investors Segmentation Based on Choice Criteria

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Abstract

Savings of an individual is determined by his/her ability and willingness to save. Saving always comes first. Think of it as the foundation upon which your financial house is built. In a developing economy, majority of household savings are parked in financial rather physical assets. The most common form of Investment Avenue to the Indian investor is bank deposit, and the flow of household savings to the capital market is low. Though Indians are habituated with a high degree of saving, they are not ready to invest in financial assets, particularly in capital market securities. The question is why? The collection on small savings schemes are also comparatively less than bank deposits with similar term and features. Is it due to the very nature and characteristics of the investors or is it due to some criteria preferred by them while making an investment? The study has tried to find out answers to the above questions by conducting surveys among various investors. It also segmented the investors based on the criteria they consider while choosing an investment avenue and to know the characteristics of each segment of investors.

List of Abbreviations: C: Convenience; L: Liquidity; R: Return; RP: Risk Protection

Introduction

Saving is income not spent, or deferred consumption. Savings of an individual is determined by his/her ability and willingness to save. Saving always comes first. Think of it as the foundation upon which your financial house is built. The reason is simple - unless you inherit a large amount of money, it is your savings that will provide you with the capital to feed your investments [1]. Saving motive is a desire to reserve certain portion of income for future needs. The ability of an individual comes from his/her income, which may be absolute or relative. The willingness to save is nothing but the saving motive of an individual. It means that highly motivated persons save more than the least motivated ones. As highly motivated persons have a high motivational level, convincing them to make investment will not require much effort.

Investor households diversify their investment portfolio to balance risks: It is the need of the investors to balance the risks in investment with return and liquidity that lead them to diversify their investment portfolio depending on the level of income of the households.

Investor households are aware of risks in investing in equity shares: Equity shares have been found to be very unsafe by a fairly significant number of households, including investor households. This would imply awareness of the investor households about risks associated with investment in equity.

Households' preference for instruments in which they commonly invest (other than equity shares and debentures) match the risk perception: The percentages of households investing in any instrument, ranked by preference of all households show that the fixed deposits as a class, has the highest preferences, allowed by recurring deposits of post office. LIC policies small savings instruments, contractual savings, UTI schemes, bonds of public sector undertakings, chit funds and public and private sector mutual funds.

Popularity of some instruments is secular to income class; while of others it is income dependent: This is seen in the relative popularity of bank fixed deposits which has an appeal across all income classes. Tax has an influence particularly among the middle and higher income groups but has little relevance to the lower income group. This is seen by the higher incidence of national savings certificate and national savings schemes among the middle and higher income groups.

Research in behavioral finance provides valuable insights into how individuals with varying observable characteristics, make different investment decisions: Making good investment decisions is very difficult since there are hundreds of potential alternatives and primary information on past performance is available for each investment. Expected results are vague, since when making a forecast it is not easy to understand the reliability of the available objective data (e.g., fundamentals). In addition, it is usually stated that investors should choose their strategies on the basis of a long horizon time. However, the longer the time window of an investment, the greater is the uncertainty about its expected results.

Objectives of the Study

- To understand the criteria used by investors to evaluate any investment.
- To know the characteristics of each segment of investors.
- To study the factors effecting of different investors.
- To segment the investors based on their choice.

Data

The primary data was collected by conducting surveys among various investors working in different sectors using a well structured questionnaire. The sample size of 20 investors having very good financial knowledge was taken for the survey. The sample size was solved at by using the formula $n= (z/2)^2 \frac{\sigma^2}{E^2}$ Where n is the minimum sample size required, Z=1.96 at 95% confident level, σ = Standard Deviation and E = Error… A total of 20 questionnaires were prepared on the basis of 6 constructs. The questionnaires were distributed to all

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120 selected respondents for the purpose of final analysis. The reliability of the survey instrument was tested using Chronbach's Alpha method. Measurements used in the research study, Interval scale i.e. Likert's scale. Construct validity to check whether the questions are really measuring the constructs. For Age and annual income – scale used was ordinal scale and for Gender, Occupation – Nominal scale was used.

Questionnaire design

The questionnaire consists of indirect questions to avoid any potential orientation of the interviewed answers. Each question deals with a particular cognitive bias in the following manner: each question starts with a particular scenario or situation that may happen in the stock market. Then the respondents were offered a set of responses traducing the different potential behavior that investors who are the clients of the brokers interviewed may show in front of this particular situation. Each response communicated measures or appreciates the influence degree of the psychological bias considered on the Indian investors' behavior [2]. Each broker interviewed is invited to attribute to each response or behavior the rate or the percentage of his clients that behave as proposed in the response, in front of the situation detailed at the head of the question. Then from the response communicated, the study tried to conclude the importance and the influence magnitude of the psychological bias treated on the Indian investors' behavior. From the data communicated by the brokers, the study deduced to what extent the psychological biases treated in the questionnaire, influence the Indian investors' behavior.

Conceptual framework

The constructs are determined depending on those constructs the concepts are developed. The constructs like Convenience, Interest rate, Liquidity, Return, Regular income, Risk protection are the parameters that the investors consider to make an investment (Figure 1). By using these criteria the investors can be segmented into three main categories rational, irrational and normal based on the extent to which they consider each criterion. Rational people analyze any investment decision by using all the criteria, whereas irrational people take investment decisions without considering any criteria [3-5].

Limitation

- This study used only some factors to analyze the factors affecting investment behavior of individual investor.
- The study has also the limitation of time, place and resources

Analysis and Findings

Factor analysis and reliability analysis

Factor Analysis was used for the purpose of reducing the data and also to establish content and discriminate validity. Given the research model, wherein various constructs are treated at different order, exogenous variables and endogenous variables were subjected to factor analysis separately. With regards to the general criteria items with factor loading more than 0.5 and a KMO statistic of more than 0.50 with total variance explained above 60% were considered. Specific statistics for each factor analysis is explained at respective places.

The investors use several criteria to evaluate an investment instrument. Here for the purpose of study 6 commonly used criteria were taken. The criteria were presented in the form of statements with a five-point Likert scale to collect opinion from investors.

Table 1 Shows two tests that indicate the suitability of the data for factor analysis. The Kaiser-Meyer-Olkin Measure of sampling adequacy is a statistic that indicates the proportion of variance in the variables that might be caused by reduced factors (Tables 2 and 3).

High value of KMO (0.576) indicates that a factor analysis is useful for the present data. The significant value for Bartlett's test of sphericity is 0.000 which indicates that there exist significant relationships among the variables. The resultant value of KMO and Bartlett's test indicates that the present data is useful for factor analysis.

Convenience

The first factor is convenience as the statements or variables included under this factor are related to it. Each variable included under this factor is related to different kind of conveniences required by the investor at different stages of the investment process. The investor needs convenience on four occasions with respect to any investment. First of all, the investor should be in a position to get sufficient information without any difficulty before making an investment decision (Table 4). The investor wants sufficient schemes that should be suitable to his needs to park his funds. He also looks for a sufficient institutional arrangement to put his money and expects to get regular periodical and final capital redemption without any inconvenience. Normally, small investors prefer an investment that does not require any periodical review. Many statements that are related to convenience on different stages of investment are included in the study to collect opinion from investors. The opinion expressed by investors indicates that the convenience expected by them at one stage does not vary from what is expected in the next stages. This similarity of opinion on the requirements leads to reduce all convenience related variables into one factor.

In the year 2005-06, small savings schemes were offering higher interest than bank deposits. Even then, collections from bank deposits were more than the collections from postal saving schemes with similar terms. The PPF collection by banks was more than that of the post offices. This was mainly because the investors felt that the banks were more convenient for them than post offices.

Around majority of people are particular about convenience as a criterion to evaluate any investment instrument and only few do not give importance to convenience. This shows that the convenience criterion is predominantly considered by investors in evaluating an investment instrument. This fact also confirms that Indian saving is institutionally elastic. This suggests to the investment intermediaries to tailor their investment activities in a way that it should put investor at ease. The investment program should be taken to the door step of the investor. To bring more number of rural people into the financial investment cult, the intermediaries should spread their wings to rural places [6-8].

Unlike in any other developing country, Indian investors prefer physical investment rather than financial investment. They invest in physical assets like land, building and jewelry as it is more convenient to them and less risky. The saving in physical assets is convenient as it does not require any periodical review. Indian investors favor physical assets as it does not have a high risk and its appreciation in value is high. To some extent, it is, of course long-term in nature, but the investors are not worried about the term of investment. Long-term maturity is a major disadvantage for small saving schemes, but it is not a limiting factor to the investors to save their money as per this survey. So, collection on those schemes can be increased by making them more

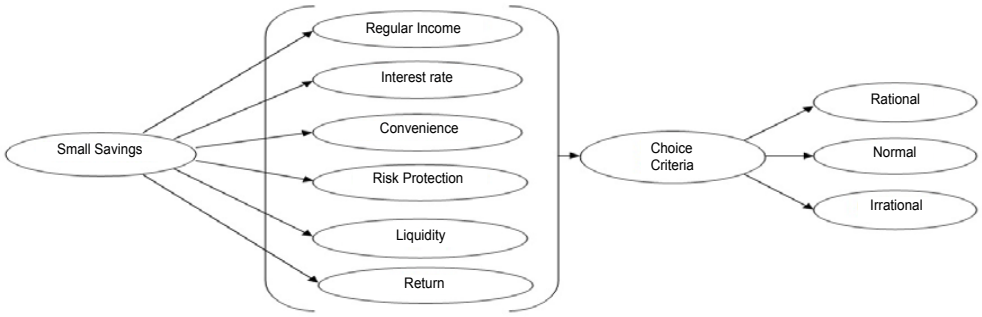

Figure 1: Conceptual Model

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.576
Bartlett's Test of Sphericity	Approx. Chi-Square	297.009
	Df	190
	Significance	.000

Table 1: KMO and Bartlett's test for all Factors

Sl.no	Factors	Eigen value	% of variance explained	Cumulative%
1	Component 1	2.581	12.905	12.905
2	Component 2	1.799	8.995	21.900
3	Component 3	1.588	7.939	29.839
4	Component 4	1.546	7.730	37.569
5	Component 5	1.335	6.676	44.246
6	Component 6	1.257	6.287	50.532
7	Component 7	1.100	5.500	56.032
8	Component 8	1.024	5.118	61.15

Table 2: Factors and Variance explained.

convenient to the investors (Table 4).

Risk protection

The statements included under this component are related to risk and risk protection. So, this factor is called risk protection. The salaried class people give more importance to risk protection as the capital they invest is very small and is accumulated out of their hard earned money. They also want that their capital should not get eroded after making investment on particular instruments. Normally, the investors expect risk protection from the government. Most of the investors want to have no risk to their capital, to put it more specifically; they want to have some kind of risk protection on their invested amount. High level risk takers are very less among salaried class. The economic indicators show that only few percentage of household saving goes into capital market. The main reason for the low capital flow into the capital market is that majority of the Indian investors are not ready to take risks by investing there (Table 5).

Return

There are two kinds of returns available from any investment. One is regular return in the form of dividend or interest and another is capital appreciation. The investor expects the return not only to be high, but also consistent over a period of investment tenure [9-14]. The investors are concerned neither favorably nor unfavorably about return. Few of people agree with the statement that the return is an important criterion for evaluating any investment instrument and only a negligible percent of people give negative importance to return (Table 6).

Liquidity

The problem of liquidity may force an investor to shift from one form of investment to another. The long-term investments have the problem of liquidity. As the liquidity does not add any value addition to the investment, the investor considers this criterion at the end while evaluating any investment instrument. The investors, who are neutral about the requirement of liquidity for the investment account for more of the total investors. The intermediaries who are dealing with small saving instruments can target this segment of people as this segment can invest in long-term securities as well (Table 7). Only few of investors give more importance to liquidity. This means only limited number of investors is interested in liquidity.

Cluster analysis

The investors can be classified into three categories based on choice criteria. The investors are classified into three segments as the difference between the coefficients is significant only on three cases on the hierarchical cluster. For the purpose of classification of investors, K-Means cluster is used. The table below shows the mean values for the three clusters that reflect the attributes of each cluster. The rank of the clusters on every factor is also given in the Table 8.

This table shows the mean values for the clusters that reflect the attributes of each cluster. For instance, the mean value of convenience, risk protection, return and liquidity for first cluster is 3.92, second cluster 4 and for third cluster 3.94 respectively.

Rational investors

The first cluster is called rational investor. None of the cluster has the highest mean value in all the factors except convenience that are used to measure the investment instrument. Since no segment considers all the criteria before making an investment decision, there are no rational investors. The mean value of this factor is 3.92.

Normal investors

The second cluster is called normal investor as it has secured I rank in the mean values of factors like risk protection, return criteria and II rank on the convenience and liquidity criteria this segment of people agrees with convenience and liquidity. This segment of people is most suited for small saving instruments as small saving instruments are long-term in nature. The mean value of this factor is 4.

Irrational investors

The third cluster (Table 9) is called irrational investors. This segment of people does not consider any factor more seriously before taking an investment decision. Any rational investors considers at least some factors before choosing an investment avenues; but this segment of people do not consider any factor, making them irrational. In liquidity

	Component							
	1	2	3	4	5	6	7	8
VAR00001	-.123	.363	.429	.085	-.008	.359	-.231	.117
VAR00002	.525	-.348	.276	.138	.084	-.144	-.356	-.162
VAR00003	.410	.413	-.362	.071	-.326	.311	-.060	.030
VAR00004	.328	.308	-.160	.320	.414	.261	-.037	.070
VAR00005	-.056	.429	-.032	-.149	.403	-.506	-.074	-.081
VAR00006	.260	-.513	-.312	-.069	-.282	-.062	-.136	.207
VAR00007	.380	.357	.396	-.269	-.120	.095	.250	.038
VAR00008	.624	-.169	-.068	-.156	.034	.311	.232	.191
VAR00009	.169	.332	.183	.425	-.301	-.167	.089	.352
VAR00010	.575	.055	.388	-.162	.012	-.150	-.143	-.357
VAR00011	.033	.137	-.570	.346	.349	.077	-.151	.019
VAR00012	.079	-.104	-.262	-.044	-.030	.212	.464	-.648
VAR00013	-.119	-.553	.254	.035	.181	.378	.168	.217
VAR00014	.144	.158	.068	-.334	-.021	.330	-.366	-.174
VAR00015	.512	-.060	-.035	-.313	-.014	-.382	.257	.268
VAR00016	.410	.268	-.397	-.176	-.305	-.069	-.022	.001
VAR00017	.379	.106	.188	.286	.446	-.009	.426	.031
VAR00018	-.306	.202	.236	.326	-.442	.046	.201	-.159
VAR00019	.558	-.203	.119	.343	.006	.075	-.239	-.083
VAR00020	-.174	.190	-.005	-.642	.243	.256	-.035	.191

Table 3: Component Matrix.

Sl no	Factors	Loading	Mean values
1	Location of your investment of small saving is convenient	0.683	3.65
2	Periodic review is not necessary in small saving	0.603	3..2
3	Even when capital market is good then I will not put my money in small saving	0.680	3.6
4	I save more when interest rate is more	0.436	3.15
5	Procedure for getting regular return is simple	0.648	3.35

Table 4: Factor Loading for Convenience

Sl no	Factors	Loading	Mean values
1	Government is giving high interest to small saving than bank interest only to help the small investors	0.673	3.6
2	I am investing in small saving because there is less risk due to government supervision	0.576	3.10
3	Irrespective of inflation I will put money in fixed interest	0.635	3.4

Table 5: Factor Loadings for Risk Protection.

Sl no	Factors	Loadings	Mean values
1	I do save as when I get extra income	0.534	3.10
2	Consistency of return is more important than its earning	0.578	3.15
3	Increase in income is not helping to increase saving	0.588	3.15
4	I am getting good return from small saving instruments	0.769	3.9
5	Savings will increase only when there is an increase in stable permanent income	0.637	3.4
6	I am getting good return because I have taken calculated decision	0.560	3.2
7	Investing in small saving will help me retire more secure way.	0.642	3.4

Table 6: Factor Loadings for Return.

Sl no	Factor	Loadings	Mean values
1	Problem of liquidity forces me to go for other form of investment	0.640	3.4
2	when equity market is uncertain I go for small saving schemes	0.615	3.15
3	If there is any capital loss in any other investment then I will not invest	0.653	3.5
4	I prefer long term investment over short term investment	0.553	3.10

Table 7: Factor Loading for Liquidity

	CLUSTER		
	1	2	3
Convenience	4 (I)	3.8 (II)	3.6 (III)
Risk Protection	3.9 (III)	4 (I)	3.95 (II)
Return	4 (III)	4.3 (I)	4.2 (II)
Liquidity	3.8 (III)	3.9 (II)	4 (I)

Table 8: Final Cluster Centers

Cluster	1	38.000	31
Cluster	2	43.000	36
Cluster	3	39.000	33
Valid		120.000	

Table 9: Number of Cases in each Cluster

Criteria	F	Sig
Convenience	13.153	0.022
Risk protection	9.374	0.05
Return	10.6	0.289
Liquidity	14.298	0.015

Table 10: ANOVA

factor it secured 1 rank and 2nd ranks in return and risk protection and 3rd rank in convenience. The mean value of these investors is 3.94.

This Table 9 indicates that there are 38 investors out of 120 in cluster 1 which is rational investor group. 43 investors out of 120 in cluster2 which are In the normal investor group and 39 investors out of 120 in cluster 3 which are in irrational investors. This means that there are around 31% of rational investors, 36% of normal investors and 33% of irrational investors.

The final cluster table shows that three clusters differ in their mean values of all this four criteria. The analysis of variance indicates that the difference that exists among three clusters in the mean values is significantly different. Here the significant values for convenience, risk protection and liquidity are 0.022, 0.05 and 0.015. there is a insignificant value for return i.e 0.289. Hence for dividing people into three segments based on choice criteria three factors i.e convenience, risk protection and liquidity have significant contribution where as the return factor have the insignificant contribution (Table 10).

Conclusion

The objective of offering small saving scheme is to provide a safe and attractive option to the public and at the same time to organize resources for the development of the nation. The survey infers that the small saving schemes are designed with good features so as to make it suitable to the needs of the people, but the facilities offered and services provided are not attractive enough to provide convenience to investors. To attract the large resources available in the places, financial services should be taken to the doorsteps of the people. The majority of people want risk protection to their capital. So the flow of household savings to the capital market will not increase as there is high volatility in the market.

Understanding the criteria used by investors to evaluate any investment instrument is important for the marketers of any investment product. It is also important for them to segment the investors based on their choice and know the characteristics of each segment of investors. The present study has identified four commonly used criteria namely convenience, Liquidity, Return and Risk Protection. By using these criteria, investors are segmented into three categories namely, rational, normal and irrational based on the extent to which they consider each criterion. Rational people analyze any investment instrument by using all the criteria, whereas irrational people take investment decisions without considering any

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