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A STUDY OF THE INVESTMENT PATTERNS OF SMALL INVESTORS IN PUNE REGION WITH SPECIFIC EMPHASIS ON STOCK MARKET INVESTMENTS

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A common observation that due to lack of knowledge and fear of losing money the retail investor does not invest in the stock market. This research paper attempts to analyze the needs of an investor with a limited source of income and limited resources available for prudent investment. Investment banks, today, use high frequency trading algorithms for stock market trading. On a similar note for individual retail investors algorithmic trading should be studied and applied with suitable modifications for earning a sustainable income from the market investments.

Keywords: Investments, Stock market investments, Trading algorithms

INTRODUCTION

An investment operation is one which, upon thorough analysis promises safety of principal and an adequate return. Operations not meeting these requirements are speculative. By Graham and Qadd's Security Analysis. This can be termed as the most suitable definition that encompasses the two primary areas that a retail investor looks for before investing his/her money – First one being the safety of the amount being invested and secondly the adequate return that an investor looks forward as primarily for the opportunity cost.

Investment can be viewed from three dimensions – from the economics, finance and

an individual point of view. In economics an investment is done for production of capital goods, finance defines it as creation of assets which prove useful for future income and increase in value. The third view point is purely individualistic where the investor has committed the money for a specific reason. In this research paper we aim to analyze the investment patterns of retail investors focusing on the financial and individualistic perspective.

INVESTMENT AVENUES FOR RETAIL INVESTORS

Various options are available for retail investors to make prudent investment choices ranging

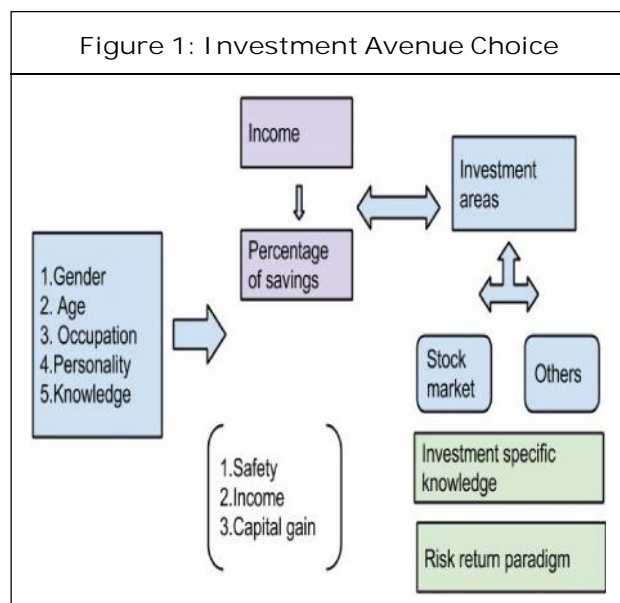
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from the least risky choice of bank deposits to the most volatile stock market investments. Based on this risk return paradigm the following seven options were selected for study, the seventh one being an open ended avenue in case the respondent has opted for anything different. Also during the literature review it was observed that the insurance policy is considered as a major investment avenue. In our study we have not considered the same as after detailed study about it we concluded that this avenue is only for a protection cover, coverage for uncertain events and cannot be considered for the risk – return paradigm analysis which is the main focus of our study.

CHOICE OF AN INVESTMENT AVENUE

Investors are a heterogeneous group, they may be large or small, rich or poor, expert or lay man and not all investors need equal degree of protection (Mayya, 1996). The decision of an investment is based primarily on two things 1. Need of the investor 2. Knowledge about the investment avenue.



Investment Avenue	Risk-Return	Extra Inputs
Bank Fixed Deposit	Very low risk with moderate return.	Fixed Deposit, also called Term Deposit is an investment where the interest rate is guaranteed not to change for the nominated term, so you know exactly what your investment is worth. An avenue where the return depends on the credit policy, surety of principal with minimal return is assured.
Gold, silver and precious metals	Negligible risk with moderate to high returns	Dominating monetary systems for centuries gold is considered to be the most conservative investment. Often viewed as a hedge against disaster the NBER working paper series (GOLD Returns by Robert J Barro and Sanjay P Mishra) explains the shifting monetary roles of gold though it still remains one of the most dominating investment avenues.
Mutual fund	Moderate to high risk with moderate to high returns	The best investment option for investors which want to exploit the area of capital markets with the limited knowledge about the same. Success and failure largely depends on the market movements, strategy of the portfolio manager and the type of investment chosen, e.g., blue chip companies.
Real estate	Moderate to high risk with moderate to high returns	One of the most conventional forms of investment after gold. Popularity has increased in recent years in India due to increase in fund availability and rise in disposable income of investors. After the sub prime mortgage crisis in US serious doubts have been raised over the pricing of real estate though credit rating agencies have a fair share of risk assessment done.
Shares and stocks	Moderate to high risk with varying returns	Generally considered to be the most risky investment avenue due to dependency on company performance, macro economic developments and investor sentiments. An attempt has been made to identify the price volatility through models such as Hidden Markov Chains and price prediction mathematical models it still remains the most volatile investment avenue.

Table 1 (Cont.)

Various other schemes	Risk and return would depend on the scheme.	The following are schemes the investor would be interested in – Provident fund, National Pension Scheme, Life Insurance Policies, Medical insurance policies, Post office savings to name a few. The risk and return completely depends on the nature and conditions specific to the scheme.
Others	Risk and return would depend on the avenue chosen.	These would include any other investment avenue chosen other than the above mentioned ones. Examples – Art, antiques, venture funds.

This figure has been developed based on a pilot survey carried out to study various investment avenues in general and stock market investments in specific. (A) Profiling of the investors was done based on gender, age, occupation, personality and knowledge. (B) Knowledge was divided into two parts - former being investment knowledge and latter being knowledge specific to the stock market. (C) The income and percentage of savings was analyzed for observing the investment capability. (D) The risk-return paradigm.

Small Investor

For the purpose of this study the investors would be divided into the following categories.

The National Council for Applied Economic Research (NCAER) categories middle class on

Annual Income (In INR)	Group
0-1,00,000	C+
1,00,000 – 5,00,000	B
5,00,000 – 10,00,000	B+
10,00,000 – 30,00,000	A
Above 30,00,000	A+

the basis of annual income of households between INR 3,40,000 to 17,00,000. For the purpose of this research we have defined a small investor as any individual having an annual income less than 30,00,000 Rs. This is based on an assumption that any individual earning income will be investing or saving money for future uncertainties. So disposable income will vary depending upon the individual’s preferences.

Objectives of the Study

- 1) To study the investment patterns of small investors in Pune region.
- 2) To examine the objective of the investments done by small investors.
- 3) To examine the interest of small investors in having access to a computer program for stock market investment.

Hypothesis

Investors have sufficient knowledge about investing in the stock market and they prefer it as an area of investment over other avenues. They would not be interested in a computer program to assist them in investing in the stock market.

The above hypothesis has been rejected and the alternate hypothesis has been accepted. The hypothesis was tested through sub hypothesis that have been mentioned below. ANOVA , cross tab and Chi square test are the statistical tests used for this purpose.

Scope of the Study

This study focuses on investment patterns of small investors and to help find if development of a computer program which will assist them in investing in stock market would interest them.

RESEARCH METHODOLOGY

This research is descriptive in nature. Population

for the study is investors residing in Pune region. Assumption for the purpose of this study is that anyone above 18 years of age is an eligible investor. As per the census calculated by the government¹, Pune’s population is 82, 42, 142. Demographic study – Age wise data for Pune region was not available. But for Maharashtra Age wise data was as follows – Total Population – 11, 23, 74, 333 and population greater than 18 years – 9, 31, 91, 653. Approximately 82% of the population is above 18 years of age. Assuming a similar trend 67, 58, 556 is the approximate population above 18 years of age.

Sampling size – As the population is greater than 50,000 the following formula has been used for arriving at the sample size

The following sample size formula for infinite population is used to arrive at a representative number of respondents (Godden, 2004):

$$SS = \frac{Z^2 \times p(1 - p)}{M^2}$$

where

SS = Sample Size for infinite population (more than 50,000)

Z = Z value (1.96 for 95% confidence level)
 P = population proportion (expressed as decimal) (assumed to be 0.5 (50%) since this would provide the maximum sample size) and M = Margin of Error at 5% (0.05)

Sample size = $1.96 \times 1.96 \times 0.5(1-0.5) / (0.05 \times 0.05) = 384.16$

385 respondents need to answer the questionnaire for appropriate results. Data was collected from 400 people residing in the area of Pune.

Sampling Technique

Judgmental sampling was used. Though a non-probability sampling method it was used for having more authentic data. Seriousness of the person filing up the questionnaire was of extreme importance for a valid study and so judgmental technique was found appropriate.

Finding and Interpretation of Data

Table 3: Sample Demographic Characteristics

Particulars	Number	%
Gender		
Male	210	52.5
Female	190	47.5
Age		
18-30	132	33
31-40	69	17.25
41-50	27	6.75
51-60	165	41.25
61-70	7	1.75
Occupation		
Employment	267	66.75
Self Employment (Business/Profession)	103	25.75
Retired	5	1.25
Others	25	6.25
Annual Income		
0-100000	25	25
100001-500000	0	0
500001-1000000	189	189
1000000-3000000	186	186

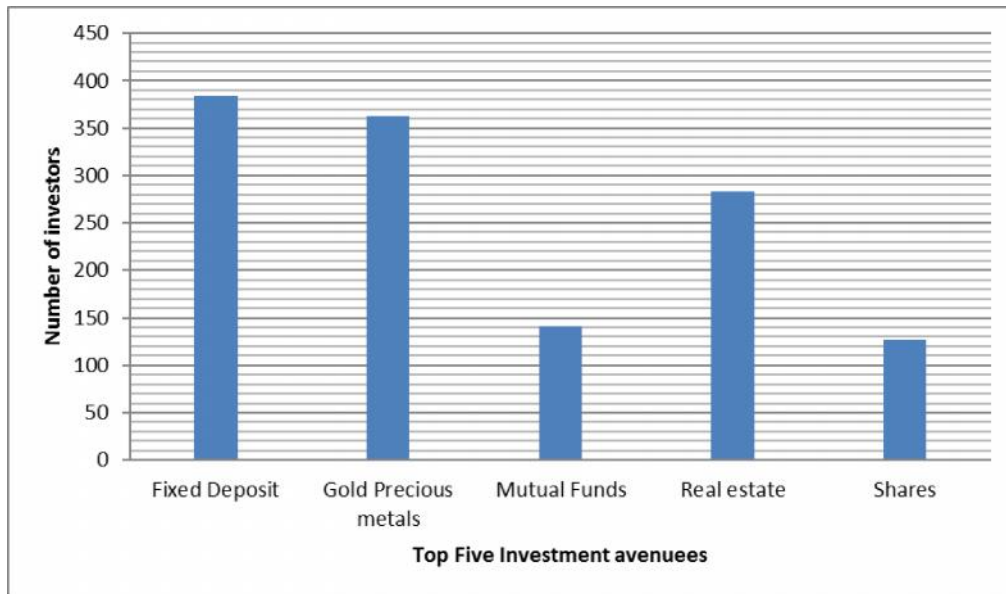
Note: (50 respondents were having income more than 3000000. These questionnaires were ignored for the study).

Investor Preferences

Out of the 400 investors, 384 preferred the option of fixed deposits. Gold, Silver and precious metals

¹ Censusindia.gov.in - Year of census 2011.

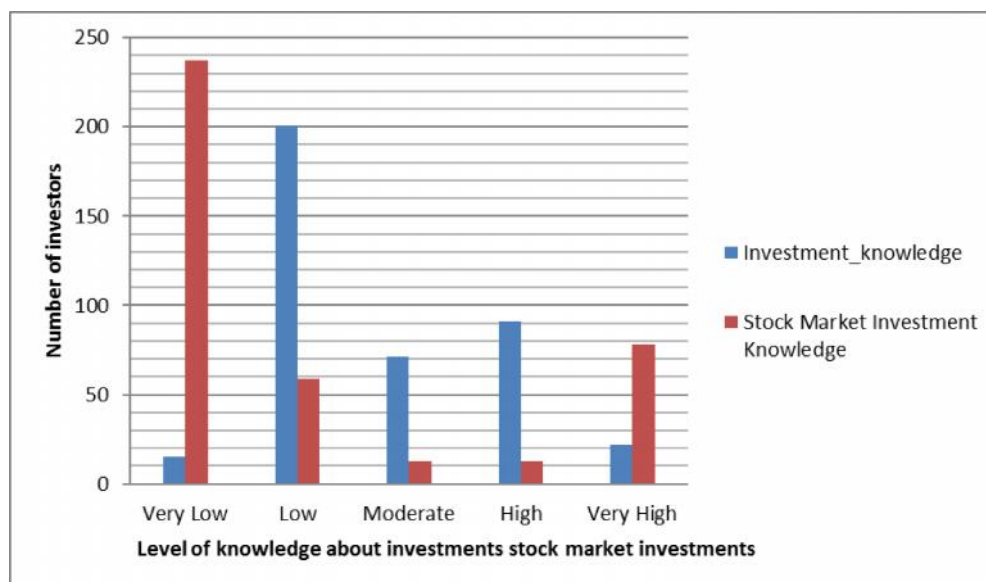
Chart 1: Investor Preferences for the Investment Avenues



were the second preference by being chosen by 362 respondents. Third preference was real estate with 283 respondents opting for it. Mutual funds and shares found their way at the last being chosen by 141 and 127 respondents respectively. (15 investors had chosen other option and

mentioned the other avenues where they have invested which included Art, antiques, vintage cars, etc. Also 98 investors have mentioned other savings schemes like LIC, PPF, Post Office Schemes, etc. The above chart covers the top 5 investment avenues).

Chart 2: Knowledge about Investment and Knowledge about Stock Market Investment in Specific



Knowledge about stock market investments has shown spikes at very high and very low. On the other hand knowledge about investments has been rated on the low – high.

Testing of Hypothesis Through Sub Hypotheses

H₀₁ is rejected. By analysing the data collected by the questionnaire it was found that the highest percentage of investment is still in two traditional investment areas - first being Gold and second being fixed deposit. The third position is held by the real estate. Fourth being mutual funds followed by shares.

H₀₂ is accepted. The objective of investment for an investor is security and safety of money along with earning some more income. The capital gain aspect of investment is not opted as an objective by most of the investors.

Table 4: H₀₁ - Investors Do Not Prefer Other Areas of Investment as Opposed to Stock Market

Investment Area	Preference by Investors	Ranking Based on Number of Preferences
Fixed Deposit	384	First
Gold, Silver, Precious metals	362	Second
Mutual Funds	141	Fourth
Real Estate	283	Third
Shares	127	Fifth

Table 5: H₀₂ - The Only Objective of Investment for an Investor is Not Safety and Security of the Money Being Invested

Objective of the Investment	Preference by Investors	Ranking Based on Number of Preferences
Safety of money being invested	400	1
Earning income through the investment	400	1
Earning income and Capital gains (Appreciation in value and sale transaction)	18	2
Only Capital gains (Appreciation in value and sale transaction)	0	3

H₀₃ is rejected. One way ANOVA table applied. As the significance value is 0.181 which is greater than 0.05 we can conclude that the knowledge about the investment avenues among retail investors is similar across all occupations.

H₀₄ is accepted. Through cross tab function it was found that the investors that are willing to bear a loss in three ranges out of 5 - upto 1%, 7 to 10% and more than 10%. Also almost 91% of the investors fall in the category where they do not want to bear a loss at all.

H₀₅ is rejected. 97% of the investors who were a part of the study mentioned that they would be

Table 6: H₀₃ - Knowledge about Investment Avenues among Retail Investors is Different Across all Occupations

		Sum of Squares	Degrees of Freedom	Mean Square	F	Sig.
Investment knowledge	Between Groups	5.1	3	1.7	1.64	0.181
	Within Groups	411.86	398	1.04		
	Total	416.96				

Table 7: H₀₄ - Few Investors are Willing to Bear a Loss on their Investments

Loss on Investment	Percentage Loss				Total
	0%	Upto 1%	7-10%	More than 10%	
Yes	0.00%	4.25%	3.75%	1.25%	9.25%
No	90.75%	0.00%	0.00%	0.00%	90.75%
Total	90.75%	4.25%	3.75%	1.25%	100%

Table 8: H₀₅ - Investors Would Not be Interested in a Computer Program that Would Assist them in Investing

Interest in a Computer Program	Observed	Expected
Yes	297	200
No	103	200
Total	400	

Table 9: Test Statistics

	Interest in a Computer Program
Chi square	94.09
Df	1
P	0

interested in a computer program to assist them in investing in the stock market. Also the chi square test was applied and the test showed that the observed distribution of interest in a computer program for stock market investing differed significantly from what would have been expected by chance ($X^2 = 94.09$ and $p < 0.001$).

CONCLUSION

Knowledge of small investors in the area of stock market is low. Investors still prefer the traditional form of investments like fixed deposits and gold. Small investors would be interested in a computer program that would assist them in investing. They generally do not prefer losses, so a stop loss mechanism must be included in the system

which will protect them from the same. An expert system can be developed which will help investors diversify the portfolio by adding an additional investment avenue via stock market investment.

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