DECISION MAKING PATTERN IN EQUITY MARKET - AN ECONOMIC ANALYSIS

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Abstract

In this paper, an attempt was made to study the decision making patterns in Indian equity markets through economic analysis. This paper tried to examine socio-economic factors like, age, income, employment status, annual savings, trading frequency and investment experience of the respondents. The study is confined to equity market and Chennai city of Tamil Nadu only. Multistage random sampling method was adopted to collect the data. The primary data was collected from 406 respondents. Statistical tools such as frequency distribution, factor analysis, cluster analysis and chi-square test were used for analyzing data by using SPSS package. Out of 406 respondents 163(40.1%) respondents are highly influenced, 131(32.3%) respondents are moderately influenced and 112(27.6%) respondents are less influenced with regard to economic factor towards equity investment. Out of eight statements, "I will refer to market price movement or current price" has secured high score (0.910) pertaining to economic factor towards investors' investment decision making pattern. Only two socio- economic variables namely age and type of family have significant association with economic analysis which influence the decision making style of equity investors.
Key Words: *Decision Making, Equity Market, Economic Analysis, Investment Decision*

Introduction

Investment refers to the employment of funds to assets with the aim of achieving additional income or growth in value over a given period of time. Today investors have various attractive avenues of investment with different features matching their needs. But generally the art of investment is to see that the return is maximized with minimum risk which is inherent in all investments. The funds allocated by the investors to various

investment avenues depend to a large extent on the investment pattern, preferences, risk-return perceptions and the various investment objectives perceived by them. Investors differ in their pattern of investment, preferences, perceptions and objectives for investment. Investment in capital market is in various financial instruments, which are all claims on money. These instruments may be of various categories with different characteristics. These are all called securities in the market parlance. In a legal sense also, the Securities Constructs Regulation Act, 1956 has defined the security as inclusive of shares, scrips, stocks, bonds, debenture stock or any other marketable instruments of a like nature or of any debentures of a company or body corporate, the government and semi-government body etc. It includes all rights and interests in them including warrants and loyalty coupons etc., issued by any of the bodies, organizations, or the Government. The derivatives of securities and security index are also included as securities in the above definition in 1998. In spite of a numerous investment avenues in India the research has only focused on equity investment.

Review of Literature

Amir Barnea, Henrik Cronqvist and Stephan Siege (2010) found that a genetic factor explains about one third of the variance in stock market participation and asset allocation. Family environment has an effect on the behaviour of young individuals, but this effect is not long-lasting and disappears as an individual gains experiences. Azwadi Ali (2011) found that a research model based on the concept of attitude as a mediator can be applied in the context of investors evaluating a company before deciding to invest in stocks of a company. Being human, investors are subject to emotion and this emotional effect can be stronger when companies are seen appealing to investors via relevant marketing strategies Wang (2008) factor analysis revealed five underlying dimensions of financial attitudes and behaviour: anxiety, interests in financial issues, decision styles, need for precautionary savings, and spending tendency. Gender, age, and education were found to have significant impacts. Lutfi (2010) Discovered that the demographic factors explain investor's risk tolerance and investment Preference. The results also reveal a significant relationship between investors' risk tolerance and their investment preferences. This study provides evidence that there is relationship between marital status and risk behaviour and type of investment. George M. Korniotis & Alok Kumar (2011) found that older and experienced investors are more likely to follow rules of thumb that reflect greater investment knowledge. However, older investors are less effective in applying their investment knowledge and exhibit worse investment skill, especially if they are less educated, earn lower income, and belong to minority racial/ethnic groups. Overall, the adverse effects of aging dominate the positive effects of experience .Suman and D.P.Warne (2012) found that there are different factors which affect the investment behaviour of individual investors such as their awareness level, duration of investment,

benefits from investment, safety etc. The annual income and the annual saving are given importance of consideration by the respondents, because the level of income decides the level of savings. Kasilingam & Sudha, (2010) found that a majority of the Indian investors have a belief that the success in their investment activities mainly depend upon their effort and their skill decision making. The external locus of control has impact on information source used for decision making and choice criteria considered choose an investment avenue. Thus locus of control is an important psychological attribute which has significance in investment behaviour of individual investor. Geetha & Ramesh, (2012) found that significant relationship between the demographic factors such as gender, age, education, occupation, annual income and annual savings with the sources of awareness obtained by the investors. The study reveals that the demographic factors have a significant influence over some of the investment decision elements and insignificant in others elements too. The study also discloses a general view of investors' perception over various investment avenues.

Objectives of the Study

1. To study the investors' socio-economic profile with respect to equity investors in Chennai.
2. To evaluate the effect of economic analysis on decisions making pattern of individual investors in respect of equity investment.

Scope of the Study

The study covers the socio-economic profile of the equity investors. The study enables the investors for understanding the most influential socio-economic factors, ascertaining the important factors and their level of influence on investment decision. It helps the investors for making right investment decisions at right time.

Limitations of the Study

1. The study is confined to Chennai city of Tamil Nadu only.
2. The Study is confined to equity market only.
3. The study is excluded from other investment avenues of Indian stock market.

Research Methodology

The research describes the economic analysis on Investment decision making in Indian equity market from individual investors in Chennai city of Tamil Nadu. Both primary and secondary sources of data were used in this study. The primary data were collected from equity investors of Chennai city using a well structured interview schedule. Secondary data for research were obtained from the published reports of the industry, magazines, newspapers, journals, Bulletins, magazines, Periodicals and Daily. A pilot study was conducted to validate the data collection instrument by using fifty respondents. In this research, reliability test is applied for economic factors which affects the investment decision making style of investors' in Indian equity market. The test value is 0.716. The optimum sample size was use 402 by using multi-stage random

sampling method. Statistical tools such as frequency distribution, factor analysis, cluster analysis and chi-square analysis were used in this study.

Results and Discussions

To analyze the investment decision making style, factor analysis, cluster analysis, and chi-square analysis are used.

Socio-Economic Profile

Table 1 Socio Economic Profile of the Respondents

Sl.No.	Profile	Category	Frequency	Percentage
1	Gender	Male	262	64.5
		Female	144	35.5
2	Age	Less than 20 years	16	3.9
		21 – 30 years	107	26.4
		31 – 40 years	85	20.9
		41 – 50 years	55	13.5
		51 – 60 years	88	21.7
		More than 60 years	55	13.6
3	Marital Status	Married	337	83.0
		Unmarried	57	14.0
		Divorced	12	03.0
4	Number of Dependents	Zero	8	2.0
		One	187	46.0
		Two	123	30.3
		Three	65	16.0
		Four	19	4.7
		Five	4	1.0
5	Educational Qualification	HSC and Less	6	1.5
		Diploma	164	40.4
		Graduate	74	18.2
		Post Graduate	121	29.8
		Others	41	10.1
6	Employment Status	Employed	6	1.5
		Unemployed	164	40.4
		Self-employed	74	18.2
		Retired	121	29.8
		Professional Practitioner	41	10.1
7	Nature of Employment	Private	187	46.1
		Government	128	31.5
		Others	91	22.4
8	Work Experience of the Respondents	Less than 5 years	93	22.9
		6 – 10 years	159	39.2
		11 – 15 years	61	15.0
		16 – 20 years	50	12.3
		21 – 25 years	32	7.9
		More than 26 years	11	2.7
9	Annual Income of the Respondents Family	Less than Rs.3 lakhs	55	13.6
		Rs.3 lakhs to less than Rs.6 lakhs	143	35.2
		Rs.6 lakhs to less than Rs.9 lakhs	65	16.0
		Rs.9 lakhs to less than Rs.12 lakhs	73	18.0
		Above Rs.12 lakhs	70	17.2

| 10 | Annual Savings of the Family | Less than Rs.1 lakh
Rs.1 lakh to less than Rs.2 lakhs
Rs.2 lakhs to less than Rs.3 lakhs
Rs.3 lakhs to less than Rs.4 lakhs
Above Rs.4 lakhs | 106
171
61
30
38 | 26.1
42.1
15.0
7.4
9.4 |
| 11 | Trading Frequency | Daily Basis
Weekly Basis
Monthly Basis
Quarterly Basis
More than Quarterly Basis | 88
143
52
69
54 | 21.7
35.2
12.8
17.0
13.3 |

Sources: Primary Data

It is found that 64.5% of the respondents are males, 26.4% of the respondents are from the age group of 21-30 years, 83% of the respondents are married, 46% of the respondents have one dependents, 40.4% of the respondents are diploma holders, 29.8% of the respondents are retired persons, 46.1% of the respondents are private employees, 39.2% of the respondents are having 6-10 years of Investment experience, 35.2% of the respondents annual family income are Rs. 3 lakhs to less than Rs. 6 lakhs, 42.1% of the respondents annual savings of the family between Rs. 1 lakhs to less than Rs. 2 lakhs and 35.2% of the respondents trading frequency are on weekly basis.

Factor Analysis

The Kaiser- Meyer-Olkin test is based on the correlations and partial correlations of the variables. If the test value of KMO measure is closer to one, it is good to use factor analysis.

Table 2 KMO and Bartlett's Test
Sources: Primary Data

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.615
Bartlett's Test of Sphericity	Chi-Square	349.979
	df	28
	Sig.	0.000

The value of KMO is 0.615 which means the factor analysis for the identified variables is found to be appropriate to the data. The significant value of Bartlett test is 0.000 on 28 degrees of freedom. Chi-square value is 349.979. Hence, there exists significant relationship among the variables. The next step in the process is to decided about the number of factors to be derived. Principal Component Analysis (PCA) method is applied to choose the number of factors for which "Eigen Values" with greater than unity. The component matrix so framed is further rotated orthogonally using Varimax Rotation Algorithm. All the statements are loaded on the four factors. The results so obtained have been given in the following table separately along with factors loadings.

Table 3 Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.808	22.595	22.595	1.808	22.595	22.595	1.667	20.842	20.842
2	1.327	16.582	39.177	1.327	16.582	39.177	1.359	16.990	37.832
3	1.220	15.247	54.424	1.220	15.247	54.424	1.323	16.543	54.376
4	1.079	13.483	67.907	1.079	13.483	67.907	1.083	13.532	67.907
5	0.900	11.255	79.162	-	-	-	-	-	-
6	0.708	8.845	88.008	-	-	-	-	-	-
7	0.628	7.852	95.860	-	-	-	-	-	-
8	0.331	4.140	100.000	-	-	-	-	-	-

Sources: Primary Data

Factors with large coefficient for a variable are closely related to that factor. Thus, the eight variables in the data are reduced into four factor models and each factor is identified with the corresponding variables as given below.

Table 4 Grouping of Factors

Factors	Statements
Factor 1 (Rate of Interest)	1. I will refer to market price movement or current price(0.910)
	2. An investor has to consider the interest rates prevailing in the different segments of the economy(0.892)
Factor 2 (Inflation)	1.I will refer to the world economic scenarios(0.833)
	2.An investor should evaluate the inflation rate prevailing currently and also future inflation rate.(0.791)
Factor 3 (Growth of National Economy)	1.An investor should consider the rate of growth of the national economy (0.813)
	2.An Investor has to consider the interest rates prevailing in the different segment of the economy.(0.788)
Factor 4 (Price)	1.I will refer to real time prices (0.736)
	2.I will refer to historical share prices (0.734)

Sources: Primary Data

Table 5 Statement with Rank and Score

Sl.No	Statements	Score	Rank
1	I will refer to market price movement or current price	0.910	I
2	An investor has to consider the interest rates prevailing in the different segments of the economy	0.892	II
3	I will refer to the world economic scenarios	0.833	III
4	An investor should consider the rate of growth of the national economy.	0.813	IV
5	An investor should evaluate the present and future inflation rate	0.791	V
6	An Investor has to consider the interest rates prevailing in the different segment of the economy	0.788	VI
7	I will refer to real time prices	0.736	VII
8	I will refer to historical share prices	0.734	VIII

Sources: Primary Data

Table 5 reveals the most and least important issues pertaining to economic factor towards investors' investment decision making styles. Out of eight statements, "I will refer to market price movement or current price" has secured high score (0.910) and influenced more on economic factor. The statement "I will refer to historical share prices" has secured low score (0.734) and influenced less on economic factor towards investors' investment decision making styles.

Cluster Analysis

Cluster analysis is applied to identify the influencing economic factors towards investment decision making style. Considering economic factor, the investors' investment style towards equity investment can be classified into three categories based on choice criteria using the cluster analysis Hence K-means cluster is applied to classify the investors into three categories.

Table 6 Final Cluster Centers

Sources: Primary Data

Factors	Cluster		
	1	2	3
Rate of Interest (Factor 1)	3.71	4.10	2.32
Inflation (Factor 2)	4.55	2.64	2.94
Growth of National Economy (Factor 3)	3.80	3.91	2.39
Price(Factor 4)	3.68	3.67	3.55
Total	15.74	14.32	11.20
Average	3.94	3.58	2.80
Rank	I	II	III

The final cluster centers' table 6 shows the mean values for the three clusters which reflect the attributes of each cluster. The average score of the first cluster is 3.94 with first rank, second cluster is 3.58 with second rank and third cluster is 2.80 with third rank. The following table 4.3.40 presents the cluster means square, error mean square and F-value.

Table 7 ANOVA

Criteria	Cluster		Error		F	Sig.
	Mean Square	df	Mean Square	df		
Rate of Interest	104.383	2	0.522	403	199.797	0.000
Inflation	156.377	2	0.517	403	302.681	0.000
Growth of National Economy	87.300	2	0.518	403	168.486	0.000
Price	0.626	2	0.961	403	0.651	0.522

Sources: Primary Data

The AVOVA table 7 indicates that the difference existing among the three clusters in the mean values is significantly different. The significant value for factor1, factor2, and factor3 is 0.000. This means that all the factors have significant contribution on dividing investors into three segments based on choice criteria.

Table 8 Number of Respondents in Each Cluster

Sources: Primary Data

Cluster	Respondents	%	Rank (As per cluster score)
Cluster 1	163.000	40.1	I
Cluster 2	131.000	33.3	II
Cluster 3	112.000	27.6	III
Total	406	100	

Table 4.3.41 reveals that out of 406 respondents, 163(40.1%) respondents are highly influenced, 131(32.3%) respondents are moderately influenced and 112(27.6%) respondents are less influenced with regard to economic factor towards equity investment.

Chi-Square Test

Chi-square values for socio-economic variables and factors influencing decision making style of equity investors are given in the following tables. To study the significant association between socio-economic variables and factors influencing decision making style, the following 15 socio-economic variables are considered.

Table 9 Socio-Economic Variables and Economic Analysis

Sl.No	Socio-Economic Variables	Chi square value	Significant Value	Significant or Not Significant
1	Gender	0.161	0.923	Not Significant
2	Age	20.671	0.024	Significant
3	Marital Status	5.582	0.233	Not Significant
4	Number of Dependents	9.937	0.446	Not Significant
5	Type of Family	8.525	0.014	Significant
6	Residential Status	2.573	0.276	Not Significant
7	Educational Qualification	6.609	0.579	Not Significant
8	Employment Status	5.848	0.664	Not Significant
9	Nature of Employment	5.684	0.224	Not Significant
10	Experience	10.408	0.405	Not Significant
11	Spouse/children Employment Status	4.158	0.385	Not Significant
12	Family's Annual Income	4.809	0.778	Not Significant
13	Family's Annual Savings	18.109	0.202	Not Significant
14	Trading Frequency	3.568	0.894	Not Significant
15	Investment Withdrawals	7.459	0.488	Not Significant

Sources: Primary Data

It is observed from table 9 that out of 15 socio-economic variables only two variables namely age and type of family have significant association with economic analysis. The remaining 13 variables namely gender, marital status, number of dependents, residential status, educational qualification, employment status, nature of employment, experience, spouse/children employment status, family's annual income, family's annual savings, trading frequency and investors' withdrawal expectation do not have significant association with economic analysis which influence the decision making style of equity investors.

Conclusion

Investment markets are becoming more risky and each and every passing day makes investors behave differently upon different market dynamics. The investors' decisions are driven by the economic indicators such as GDP, Inflation rate, Unemployment rate, NNP, GNP, and Government policies etc. Out of 406 respondents 163(40.1%) respondents are highly influenced, 131(32.3%) respondents are moderately influenced and 112(27.6%) respondents are less influenced with regard to economic factor towards equity investment. Out of eight statements, "I will refer to market price movement or current price" has secured high score (0.910) pertaining to economic factor towards investors' investment decision making pattern. Only two socio-economic variables namely age and type of family has significant association with economic analysis which influences the decision making pattern of equity investors.

References

1. Abdulmajech Pasha Shaik, T.N.Murty, R.Vamsee Krishna & V.Hemantha Gopikiran, Investment Objectives of the Retail Equity Investors in India, International Journal of Social Science & Interdisciplinary Research, Vol.1, Issue.7, July 2012.
2. Amir Barnea, Henrik Cronqvist, Stephan Siegel, Nature or Nurture: What Determines Investor Behaviour? Institute for Financial Research, vol. 72, September 2010.
3. Azwadi Ali, Predicting Individual Investors' Intention to Invest: An Experimental Analysis of Attitude as a Mediator, International Journal of Human and Social Sciences, 2011.
4. Brigitte Funfgeld, Mei Wang, Attitudes and behaviour in everyday finance: evidence from Switzerland, International Journal of Bank Marketing, Accepted November 2008.
5. Lutfi, The relationship between demographic factors and investment decision in Surabaya, Journal of Economics, Business and Accountancy Ventura, Vol. 13, no. 3, December 2010.
6. Gaurau Dadhich, Varun Chotia, Omvir Chaudhry, Impact of Foreign Institutional Investment on Stock Market Volatility in India, Indian Journal of Finance, vol. 9, no.10, 22, October 2015.
7. George M. Korniotis and Alok Kumar, Do older investors make better investment decisions? The Review of Economics and Statistics, Vol. 93, no.1, February 2011.
8. Suman,Dr. D.P.Warne, Investment behaviour of individual investor in stock market, International Journal of Research in Finance & Marketing, Vol. 2, no. 2, ISSN 2231-5985, February 2012.
9. Dr.R Kasilingam, Dr.Sudha Influence of Locus of Control on Investment Behaviour of Individual Investor, The Indian Journal of Management, Vol. 3, no. 1, JAN-JUL 2010.
10. N. Geetha, M. Ramesh, A Study on relevance of demographic factors in investment decisions, International Cross-Industry Journal, Vol. 10, no.1, ISSN 1804-0519, 2012.