Retail Investment Influencing and Decision Making factors Among Information Technology Professionals: Evidence from Tamil Nadu, India

G. T. Thiru Arooran, S. Anthony Raj, B. Kalpana Sai, O. Joji Chandran

Savings and investments from Individuals and households is one among the indicator of a nation's economic development. More income results in both higher spendable income and higher savings and investments. The individual income is increasing in one side and on the other side the investment options too have increased from bank and post office savings to financial assets, options, forward, currency derivatives. Software industry has revolutionized the employment pattern in India. They are noted for higher pay and providing employment opportunity to young graduates. Therefore this paper focuses on the investment preference and investment options of individual investor among information technology professionals in Tamil Nadu, South India. Findings are drawn from the analysis of the primary data collected form 600 employees of top ten software companies based on their market capitalization and also operating in Tamil Nadu. ANOVA, Garrett rank, factor analysis, inter correlation, path coefficient and regression analysis were applied to measure the extent of influencing factors for investment and investment options.

Keywords: Investment awareness, investment influence

I. INTRODUCTION

As the savings are converted as investment, the growth of the firm and economy depends on extents of savings by the individual investments. The extent of investment from the individual investor depends on the extent of influencing factors for investment and investment options.

II. STATEMENT OF PROBLEM

A. Problem

Income earned can be multiplied if only such income is invested wisely.

Great firms have fallen, because of either wrong decision on investment or lack of investment. Company and individuals are motivated to maximize their income. Individuals look for various investment options to multiply their income. In this research, the investment options, patterns and other investment variable of individual investor are analyzed. It is believed that more income will make more investment. The employees from IT sector in Tamil Nadu were taken as sample, in order to study their influencing factors for investment and investment options.

B. Methodology

This research is of descriptive in nature and covers the investment influencing factors, and other investment decision factors among Information Technology Professionals in Tamil Nadu. Contributing investment factors such as investment influencing factors, and other investment decision factors and other investment variable were taken as variables in this study and the extent of these variables leading to investment were measured.

C. Objectives and Hypothesis

The objectives of the study are to study the:
1. Investment influencing factors of Information Technology Professionals in Tamil Nadu
2. Investment decision making factors of Information Technology Professionals in Tamil Nadu

Hypothesis of the study
Null Hypothesis: There is no significant difference in the mean scores on Level of influencing factors among the respondents.

D. Sample Selection

Sample Frame
IT professionals from top 10, IT companies based on their market capitalization in National Stock Exchange and operating in Tamil Nadu were taken as sample frame. These top 10 IT firms were selected and responses were collected from employees of these firms. The details of selected IT firms are: Tata Consultancy Services, Infosys, Wipro, HCL Technologies, Tech Mahindra, Oracle Financial Services, Mindtree, Mphasis, Hexaware Technology, Tata Elxsi.

Sample Size and Method
The sample size of this study is 600. The responses from 600 IT employees were obtained from the selected companies, and analyzed, after conducting a pilot study. The pilot study with the sample size of 50 was undertaken.

The reliability test result obtained from pilot study was 0.893. Stratified random sampling method was followed to collect data.

Data collection and source of data

The data were obtained through questionnaire which was filled in either online, or through enumerator or personally. This research is done with Primary data. The data were collected from structured questionnaire and the responses were obtained from employee from IT firm in Tamil Nadu. To a limited extent secondary data were also used in the form of company annual report, web sites, repot of ASSOCHAM and NASSCOM. 600 out of 743 respondents either responded or filled the questionnaire completely. The incomplete questionnaire and un-responded questionnaire were not included in this study.

Period of study: This study was undertaken between July 2018 and January 2019

- ▪ **Statistical tools used:** ANOVA, Garrett rank, factor analysis, inter correlation, path coefficient and regression analyses are used to analyse the data.

Limitations:

The limitations of this study are:

- The findings of this study are applicable to information technology profession in Tamil Nadu, India
- The period of study ranges from July 2018 to January 2019. Hence the findings are relevant for this duration.
- The perception and awareness scores are evaluated based on the responses of the respondents.

III. ANALYSIS AND DISCUSSION

(Testing of Hypothesis) Interpretation table 1: Since the F is significant the null hypothesis of no difference in the mean scores on Level of influencing factors among the respondents is rejected and there is significant difference in the mean scores among respondents. The mean scores on Level of influencing factors among the respondent is furnished in table

Interpretation table 2: It is seen from the above table that among the mean scores on influencing factors for investment ranges from 2.85 to 4.16 and the factor 'Securing children education' has secured higher mean score and stood at top, followed by 'Establishing financial independent life' secured next higher score and stood at second, 'Comfortable life after retirement' secured next higher score and stood at third and finally 'Following the peers' has secured least mean score and stood at last.

Interpretation table 3: It is seen from the above table that among the total respondents, the mean score for sources of decision for investment ranges from 34.71 to 61.71 and the source 'Expert advice' has secured higher mean score and stood at top, followed by 'Investment news (print & broadcasting media)' has secured next higher mean score and stood at second, 'Intermediary advice' has secured next higher score stood at third, 'and finally ' the source 'Horoscope' has secured least mean score and stood at last.

Interpretation Table 4.3: Seven factors were identified as being maximum percentage variance accounted. The 10 investment options namely 1- 5 and 9-13 were grouped together as factor I and accounts 17.51% of the total variance. The 7 options namely 6-8 and 14-17 constituted the factor II

and accounts 14.04% of the total variance. The 5 options namely 25-29 constituted the factor III and accounts 12.04 % of the total variance. The 4 options namely 22, 23, 30 and 31 constituted the factor IV and accounts 11.19% of the total variance. The 2 options namely 20 and 21 constituted the factor V and accounts 10.32% of the total variance. The 2 options namely 18 and 19 constituted the factor VI and accounts 11.19% of the total variance. The 2 options namely 24 and 32 constituted the factor VII and accounts 10.32% of the total variance. Thus the factor analysis condensed and simplified the 32 investment options and grouped into 7 factors explaining 77.73 % of the variability of all the 32 options.

Interpretation Table 5: It is seen from the above table that the inter-correlation from the independent variables namely awareness for investment-X1, source of awareness for investment-X2, preference of selection of investment-X3, influencing factors for investment-X4, agreeability on investment-X5 and investment factors of importance-X6. It is also seen that all these explanatory variables except AGREEABI-X5, are significantly and positively correlated with the dependent variable SATISFACTION-Y.

Interpretation Table 6: It is seen from the above table that among the explanatory variables, the variable X3 showed higher positive direct effect on the dependent variable Y. The variable X3 also had higher positive indirect effect on Y through X4 and X6. The variable X4 showed higher positive direct on Y. This variable X4 also had higher positive indirect effect on Y through X3, and X6. The variable X6 showed higher positive direct on Y. This variable X6 also had higher positive indirect effect on Y through X3, and X4. Hence the three variables PREFERENCE-X3, INFLUENCE-X4 and IMPORTANCE-X6 are substantially important contributing variable for the dependent variable Y- satisfaction on returns.

Interpretation Table 7.1: The Multiple regression models indicated that all the explanatory variables under study, X1 to X10 have significantly contributing to Y. The analysis of variance of multiple regressions model for **Y** indicates the overall significance of the model fitted. The coefficient of determination R^2 value showed that these variables put together explained the variations of Y-degree of satisfaction to the extent of 82.1 %.

Scope for Further Research

The study on other variables such as satisfaction on investment and its return, influencing factors resulting in investment, investment pattern of other specific professionals such as physicians, academicians, lawyers, traders etc. on same or other regions can be undertaken as further research.

IV. TABLE OF ANALYSIS

TABLE 1: no significant difference in the mean scores on Level of influencing factors among the respondents

SOURCE	DF	S S	M S	F
Between groups	19	1432.52	75.395	78.19**
Within groups	11980	11550.6	0.964	

**-Significant at 1 % level

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TABLE 2 - Level of influencing factors

S. No	FACTORS	WEIGHTED AVERAGE SCORE	RANK
1	Wealth Creation	3.76	7
2	Defend against uncertainties	3.66	10
3	Comfortable future	3.89	4
4	Owning house	3.77	5
5	Own cars & vehicles	3.51	11
6	Securing children education	4.16	1
7	Children marriage	3.89	6
8	Matching the inflation rate	3.4	14
9	Responding to medical care	3.7	9
10	Establishing financial independent life	3.93	2
11	Comfortable life after retirement	3.9	3
12	Passing on wealth to the heirs	3.22	16
13	Tax benefits	3.45	12
14	Covering risk of life	3.72	8
15	Social status	3.26	15
16	Following the peers	2.85	20
17	Excitement to investment in new avenues	2.91	19
18	Investment Online made simple	3.22	17
19	Capital Appreciation	3.41	13
20	Going on National & International Trips	3.21	18

Source: Primary data

TABLE 3 - Sources of decision for investment

S. NO	SOURCES	SCORE TOTAL	SCORE MEAN	RANK
1	Expert advice	37025.0	61.71	1
2	Investment news (print & broadcasting media)	30941.7	51.57	2
3	Friends opinion	29441.7	49.07	4
4	Intermediary advice	29658.3	49.43	3
5	Inner voice (intuition)	24608.3	41.01	5
6	Horoscope	20825.0	34.71	6

TABLE 4 - KMO and Bartlett's Test

Kaiser-Meyer-Olkin	Measure of ample adequacy	0.89
Bartlett's test of Sphericity	Approx. Chi-square	40112.8
-	DF	496
-	Sig	0

Table 4.1 - Reliability statistics

Cronbach's Alpha	No. of items	No. of variables
0.984	600	32

The reliability of scales used in this study was calculated by Cronbach's coefficient alpha and normally it ranges from 0 and 1. All constructs obtained an acceptable level of a coefficient alpha above 0.7, indicating the scales used in this study were reliable.

TABLE 4.2 - Investment factors of importance

S. No	Investment options	1	2	3	4	5	6	7	C
1	Capital Market Information	**0.76**	0.21	0.04	0.27	0.2	0	-0.03	0.74
2	Macro-Economic Factors	**0.74**	0.22	0	0.38	0.17	-0.04	0.05	0.78
3	Infrastructure Facilities	**0.75**	0.25	0.14	0.19	0.19	0.26	0.01	0.78
4	Information from Regularity Bodies	**0.76**	0.15	0.06	0.05	0.41	0.05	0.05	0.78
5	Performance of related companies	**0.81**	0.16	0.14	0.11	0.13	-0.1	0.07	0.75
6	Company history	0.21	**0.83**	-0.15	0.11	-0.08	0.13	0.02	0.8
7	Promoters background & contribution	0.59	**0.53**	0.38	0.06	0.02	0.14	-0.19	0.83
8	Quality of Board of Directors	0.33	**0.71**	0.27	0.02	0.16	0.15	0.08	0.74
9	Means of financing	**0.62**	0.41	0.37	-0.03	0.05	0.16	0.03	0.73
10	P/E ratio and Dividend Policy	**0.59**	0.54	0.13	0.11	0.11	0.03	0.19	0.72
11	Nature of Business	**0.58**	0.49	0.25	-0.23	-0.01	0.38	0	0.83
12	Location/Process/Product strength/Services	**0.7**	0.42	0.41	-0.15	0.04	0.21	-0.02	0.9
13	Future Prospects & Profitability	**0.75**	0.42	0.34	-0.11	0.04	0.12	-0.06	0.87
14	Book Value/Market Value/Price trends	0.3	**0.78**	0.08	0.25	0.07	-0.09	-0.01	0.78
15	Market volume traded	0.44	**0.73**	0.03	0.15	0.23	0.04	0.12	0.81
16	Chart Pattern	0.22	**0.82**	0.04	0	0.2	0.11	0.2	0.81
17	Breath of the market	0.45	**0.5**	0.07	-0.05	0.35	0.12	0.43	0.79
18	Brokers advice/ Analysts forecast/Advertisement impact	0.09	0.09	-0.08	0.2	0.09	**0.83**	-0.02	0.75
19	Lead Managers	0.09	0.12	-0.03	0.05	0.11	**0.86**	0.11	0.79
20	Rate of Credit rating Agency	0.28	0.18	0.23	0.1	**0.82**	0.12	0.09	0.87
21	Institutional Investors	0.32	0.1	-0.02	-0.03	**0.85**	0.14	0.07	0.86
22	Demand & Supply	0.14	0.46	0.2	**0.75**	0.11	-0.03	-0.13	0.86
23	Economic/ Global Factors	0.15	0.51	0.24	**0.58**	0.14	-0.01	-0.03	0.7
24	Advertisement	-0.2	-0.01	0.38	0.29	0.17	0.22	**0.5**	0.59
25	Guideline Value	0.39	0.19	**0.55**	0.11	0.41	-0.06	-0.29	0.76
26	Approval by Municipal & Planning Authority	0.31	0.3	**0.71**	0.23	0.17	-0.07	0	0.77
27	Registration Fee	0.08	-0.13	**0.54**	0.41	-0.32	0.33	0.07	0.71
28	Bank Interest on loan	0.11	0.01	**0.85**	0.03	0.03	-0.11	0.2	0.79
29	Location & general environment	0.26	0.02	**0.73**	0.11	0.08	-0.05	0.33	0.74
30	Persuasion by the agents	0.15	-0.18	-0.11	**0.8**	-0.04	0.16	0.24	0.79
31	Different schemes and policies	0.07	0.17	0.25	**0.7**	-0.01	0.17	0.15	0.63
32	Advertisements & Promotions	0.07	0.24	0.24	0.15	0.03	0.02	**0.81**	0.81
	Eigen value	6.73	5.6	3.59	2.9	2.35	2.1	1.61	24.87
	% var exp	21.02	17.5	11.22	9.06	7.34	6.55	5.02	77.73
	Cum % V exp	21.02	38.53	49.75	58.82	66.16	72.71	77.73	

Table 4.2 gives the rotated factor loadings, communalities, Eigen values and the percentage of variance explained by the factors. Out of the 32 investment options, 7 Factors have been extracted and these 7 Factors put together explain the total variance of these options to the extent of 77.73 %. In order to reduce the number of factors and enhance the interpretability, the factors are rotated. The rotation increases the quality of interpretation of the factors. There are several methods of the initial factor matrix to attain simple structure of the data. The varimax rotation is one such method to obtain better result for interpretation is employed and the results are given in 4.3.

TABLE 4.3 - Clustering of Investment options

Factor	Investment options	Rotated Factor loadings
I (21.02%)	1.Capital Market Information	0.76
	2.Macro-Economic Factors	0.74
	3.Infrastructure Facilities	0.75
	4.Information from Regularity Bodies	0.76
	5.Performance of related companies	0.81
	9.Means of financing	0.62
	10.P/E ratio and Dividend Policy	0.59
	11.Nature of Business	0.58
	12.Location/Process/Product strength/Services	0.7
	13.Future Prospects & Profitability	0.75
II (17.50%)	6.Company history	0.83
	7.Promoters background & contribution	0.53
	8.Quality of Board of Directors	0.71
	14.Book Value/ Market Value/ Price trends	0.83
	15.Market volume traded	0.53
	16.Chart Pattern	0.71
	17.Breath of the market	0.78
III (11.22%)	25.Guideline Value	0.55
	26.Approval by Municipal & Planning Authority	0.71
	27.Registration Fee	0.54
	28.Bank Interest on loan	0.85
	29.Location & general environment	0.73
IV (9.06%)	22.Demand & Supply	0.75
	23.Economic/ Global Factors	0.58
	30.Persuasion by the agents	0.8
	31.Different schemes and policies	0.7
V (7.34%)	20.Rate of Credit rating Agency	0.82
	21.Institutional Investors	0.85
VI (6.55%)	27.Brokers advice/ Analysts forecast/Advertisement impact	0.83
	18.Brokers advice/ Analysts forecast/Advertisement impact	0.83
	19.Lead Managers	0.86
VII (5.02%)	24. Advertisement	
	32.Advertisements & Promotions	0.81

INTER-CORRELATION

In order zo study the relation between set of independent variable namely Level of awareness for investment-X1, source of awareness for investment-X2, preference of selection of investment-X3, influencing factors for investment-X4, agreeability on investment-X5 and investment factors of importance-X6 with the dependent variable satisfaction on returns-Y, inter-correlation matrix was worked out and furnished in interpretation table 4.3.

TABLE 5 - Inter-Correlation Matrix

	X1	X2	X3	X4	X5	X6	Y
AWARENESS (X1)	1						
SOURCE (X2)	0.62	1					
PREFERENCE (X3)	0.47	0.3	1				
INFLUENCING (X4)	0.44	0.25	0.4	1			
AGREEABILITY (X5)	0.21	0.17	0.14	0.17	1		
IMPORTANCE (X6)	0.47	0.32	0.48	0.42	0.45	1	
SATISFACTION (Y)	0.46*	0.26*	0.50*	0.51*	0.13	0.48*	1

*-Significant at 5% level

PATH COEFFICIENT ANALYSIS

The PATH COEFFICIENT ANALYSIS segregates the total correlation of each independent variable with the dependent variable Y into direct response and indirect response via other independent variables. The direct effect of each of the explanatory variables on the dependent variable and the indirect effect of each explanatory variable on the dependent variable through other explanatory variables are furnished in the Table No. 6

TABLE No: 6 Direct & Indirect effect of explanatory variables on Y- Satisfaction

	X1	X2	X3	X4	X5	X6	S
AWARENESS (X1)	0.17	-0.03	0.11	0.12	-0.02	0.1	0.46*
SOURCE (X2)	0.1	-0.04	0.07	0.07	-0.01	0.07	0.26*
PREFERENCE (X3)	0.08	-0.01	0.23	0.11	-0.01	0.11	0.50*
INFLUENCE (X4)	0.07	-0.01	0.09	0.27	-0.01	0.09	0.51*
AGREEABILITY (X5)	0.04	-0.01	0.03	0.05	-0.07	0.1	0.13
IMPORTANCE (X6)	0.08	-0.01	0.11	0.11	-0.03	0.22	0.48*
S- Satisfaction							

-Significant at 5 % level.

REGRESSION ANALYSIS

MULTIPLE REGRESSION ANALYSIS of Y with set of independent variables namely X1-Age, X2-Marital status, X3-Annual income, X4-Own wealth, X5-Members, X6-Actual returns, X7-Frequency of dealing in stock marketing, X8-preference for selection of investment option, X9-Influencing factors and X10-Investment factors of importance, the following regression model is fitted for performance.

$Y2 = bo + b1X1 + b2 X2 + b3 X3 + \ldots\ldots$

Where b1, b2, …. and b10 are partial regression coefficients; co-constant and the results are presented in the following table.

Table 7 - Regression model for Y- satisfaction on returns

Variables	Regression Coefficient	Standard Error	t- value (d.f = 589)	R^2
Constant	26.25	2.76	9.51	0.821
Influence (x9)	0.22	0.02	10.51*	
Preference (x8)	0.14	0.02	7.09*	
Frequency (x7)	1	0.15	6.85*	
A returns (x6)	-0.35	0.05	-6.92*	
Importance (x10)	0.05	0.01	3.38*	
Family members (x5)	-2.67	0.64	-4.18*	
Age (x1)	-3.04	0.46	-6.67*	
Marital status (x2)	-3.47	0.66	-5.28*	
Income (x3)	1.56	0.37	4.25*	
Own wealth (x4)	-0.02	0.01	-3.23*	

Regression Fitted: $Y = 26.25 + 0.22 X9 + 0.14 X8 + 1.0 X7 - .35 X6 + .05 X10 - 2.67 X5 - 3.04 X1 - 3.47 X2 + 1.56 X3 - .02 X4$

V. CONCLUSION

Using F test, there is significant difference in the mean scores among respondents. As per Garrett rank, securing children future is the most influencing factor among the respondents. Expert advice in investments is in top when it is about source of decision on investments. The independent variables namely awareness for investment, source of awareness for investment, preference of selection of investment, influencing factors for investment, and investment factors of importance are significantly and positively correlated with the dependent variable SATISFACTION-Y.

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