A Behavior Model on Investors' Savings Pattern and Choices of Investment Options in the Financial Market

Brijesh Singh, Praveen Kumar Sinha, N Babitha Thimmaiah

Abstract: India has reckoned itself as the fast-paced economy in the present time. The GDP growth rate is the indicator to define the Indian economy and growth in investors' confidence. As per the World Economic outlook, the IMF said India will grow 7.3% in financial year 2019 and 7.4% in financial Year 2020. India is having the positive growth prediction in the coming year. A vibrant economy has paved the way for development and raising the standard of living of people. Even the investors' in the financial market has radically changed over the period of time. Currently the investors' think of multiplying the income and effective utilization of savings in multiple channels of investment. An individual forfeits his present utilization to create reserve funds which thus are put resources into different venture openings. It is fundamental for any person to have legitimate understanding of all the significant issue which can have bearing on his investment choices. The study will focus on understanding the relationship between investors' savings and investment preferences as well as developing the Investment model.

Index Terms: Financial market, GDP, Investors, Annual Savings, Investment Preferences, Investment model etc.

I. INTRODUCTION

The financial market has become very complex in the current economic scenario. Investors' having the surplus in the kitty wants to multiply manifolds. In the efficient market the investors' look for many avenues and wants to try multiple investment options. Understanding of the available investment option is very significant, so that the surplus in the form of savings can be channelized efficiently in the financial market. This paper is an attempt to develop the model based on investors' savings and the choices of investment made by them. To understand the investment behaviour a mathematical model has been developed on the basis on multivariate analysis..

The mathematical model is specified below:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots\ldots + \beta_k X_k + e$$

Where,

a) Y = Value of dependent variable to be estimated

b) β_0 = Constant which represents the value of Y when value of all independent variable is zero.

c) $\beta_1 \ldots \beta_k$ = Parameters or regressions coefficients associated with each of the X_k Independent variables.

d) X_k = value of kth independent variables

e) e = random error, it represents the unpredictable variation in Y values from the regression model.

The above equation follows unknown parameters. The dependent variable is a continuous random variable, whereas independent variables are not random. The variance and standard deviation of the dependent variable are equal for each combination of independent variables. The random error associated are statistically independent of each other and normally distributed. The error of variance is same for all values of independent variables. Thus, the range of deviations of the Y value from the regression line is same. The smaller the value of (also called residual variance), the better the predicted value of the dependent variables.

Random error e is a random variable with zero expected (or mean) value. Consequently, the expected or mean value of the dependent variable is denoted by:

$$E(Y) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots\ldots + \beta_k X_k$$

The parameters β_j (j= 0,1,2,…,k) is called partial regression coefficient because it measures the expected change in response variable y per unit change in X_j when all remaining independent variables Xi (i≠j) are held constant.

II. LITERATURE REVIEW

Baker, W. Hare[a], H. Khosravi[b], B. Ramadonovic[c], (2010), consider the physiological variables that sway market valuation, a model is defined for investment bahaviour. The model is actualized and a few trust systems are tried. Reproduction results exhibited that genuine system can essentially defer the adjustment of the market.

A Ganesh-Kumar[a], Kunal Sen[b] and Rajendra R. Vaidya[c] (2002), extended the writing on account and venture by looking at the wellspring of money requirements on the association's speculation choices. Utilizing a board of 714 Indian assembling firms for the period 1993– 98, the creator find that the level of 'account limitation' varies fundamentally crosswise over outside providers of assets with speculations being most touchy to borrowings from advancement money establishments (DFIs) and significantly less delicate to assets from capital markets and business banks.

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Shalini Kalra Sahi, (2010), in his research paper stated that Indian financial specialists have been presented to a plenty of investment opportunities in the previous decade and a half, after the progression procedure which initiated in 1991. Throughout the years, the expanded challenge has brought an unavoidable trend, not simply in the monetary condition inside the nation, yet in addition an extreme change in the decisions and inclinations of the money related customers.

Suman Chakraborty[a], Sabat Kumar Digal[b], (2010), expressed that Investment is one of the premier worries of each individual financial specialist as their little reserve funds of today are to meet the costs of tomorrow. Taking 200 respondents in the study from the province of Orissa (India), the paper endeavors to break down the investment pattern, saving objectives and preferences of investors' for various options accessible in India.

Mandeep Kaur[a], Tina Bohra[b], (2012) , expressed that the enhancement of financial services sector has given the individual speculator a wide scope of chance to contribute. The person's choice to put resources into the financial market is extraordinarily affected by the assortment of advantages every individual needs from owning a specific stock.

Thomas J. Flavin[a], Margaret J. Hurley[b] and Fabrice Rousseau[c], (2001), concentrated on a gravity model, every now and again used to clarify exchange designs, is utilized to clarify market correlations. The fundamental consequence of the exchange writing is that grography matters for products markets.

III. RESEARCH METHODOLOGY

To build up a self-weighing assessing condition by which to anticipate esteems for a criteria variable (Dependent Variables) from the estimations of a few unsurprising factors (Independent factors). Along these lines, we may attempt to anticipate the Investment conduct of a person's based on different market elements. An unmistakable use of numerous relapse calls for controlling the bewildering factors to more readily assess the commitment of different factors.

A. Sampling Plan

The data were collected from the respondents near to Bangalore. Since the number of samples in the chose areas for the examination is extremely substantial and every one of the respondents couldn't be met because of down to earth troubles, just chosen tests have been taken up for the investigation. Numerous respondents were hesitant to unveil their budgetary subtleties particularly measure of cash put resources into various venture roads. Thus the information were gathered from the respondents who were eager to disclose the data. snow ball sampling technique is utilized for the examination. At the point when the objective populace is meagerly dispersed over a huge are this strategy for referral examining is appropriate for information gathering. So as to have portrayal from various statistic bunches group testing is done to choose the respondents.

B. Objective of the Study

1. To understand the level of relationship between Annual Savings and Investment preferences in the financial market.
2. To develop the Investment Behaviour model confining to savings and investment preferences in the financial market.

C. Hypothesis

4.3.1 Annual savings & Investment Preference varies significantly in the investment market.

H_0: There is no significant interrelationship between Annual savings & Investment Preferences with respect to Corporate Debenture, Antiques, Life Insurance, Equity, Bank Deposits, Company FD, PPF .

H_1: There is significant interrelationship between Annual savings & Investment Preferences with respect to Corporate Debenture, Antiques, Life Insurance, Equity, Bank Deposits, Company FD, PPF.

Model Summary		
Model	Change Statistics	DW
	df2	Sig. F Change	
1	392	.000	1.880
b. Dependent Variable: Annual Savings		

Source: Primary Data   *Table No. 4.3.1 (a)*

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics		
					R^2 Change	F Change	Df 1
1	.589 2[a]	.347	.336	1.343	.347	29.782	7
a. Predictors: (Constant), Corporate Debenture, Antiques, Life Insurance, Equity, Bank Deposits, Company FD, PPF							
b. dependent Variable: Annual Savings							

Source: Primary Data   *Table No. 4.3.1 (a)*

Interpretation: From the given SPSS table, we can infer the coefficient of determination R^2 having value of 0.347 which means dependent variables are explained 34.7% in independent variables. The Durbin Watson value of 1.880 signifies that there is autocorrelation between annual savings and investment preferences. One tailed ANOVAs f change value of 29.782 at 95% confidence limit says that the null hypothesis lays in the rejection area in normal distribution table. The table value of F-test at 95% confidence limit is 3.99. Calculated value 29.782 is more than 3.99. So, null hypothesis is rejected and alternative hypothesis is accepted. Thus a significant relationship exist between

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Annual Savings & Investment Preferences.

D. Model confining to Annual savings and Investment preferences

We use multiple regressions in the given case of annual savings and investment preferences. Among the available independent and predictable variables, many variable which are significant will predict the dependent or criterion variables.

Y= annual Savings
X_1= Public Provident Fund
X_2= Equity
X_3= Life Insurance
X_4= Equity
X_5= Bank Deposits
X_6= Company Fixed Deposits
X_7= Antiques

So, $E(Y) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7$

SPSS registered the model and the regression coefficients. The condition can be worked with every one of the factors or explicit blends or by choosing a strategy that consecutively includes or expels factors. Stepwise choice, the most prominent technique, consolidates forward and in reverse successive methodologies. The factor that contributes the most in clarifying the reliant variable is included first. Resulting factors are incorporated dependent on their steady commitment over the main variable and on whether they meet the model for entering the condition. Factors might be evacuated on the off chance that they meet the expulsion model, which is a bigger hugeness level than that for passage.

Model Summary

Model	R	R^2	Adjusted R^2	Std. Error	R^2 Change	F Change	df1
1	.389ª	.151	.149	1.520	.151	70.848	1
2	.454ᵇ	.206	.202	1.472	.055	27.396	1
3	.518ᶜ	.268	.263	1.414	.063	33.874	1
4	.548ᵈ	.300	.293	1.385	.032	17.902	1
5	.557ᵉ	.310	.301	1.377	.010	5.667	1
6	.572ᶠ	.328	.317	1.361	.017	10.181	1
7	.589ᵍ	.347	.336	1.343	.020	11.797	1

a. Predictors: (Constant), PPF

b. Predictors: (Constant), PPF, Equity

c. Predictors: (Constant), PPF, Equity, Life Insurance

d. Predictors: (Constant), PPF, Equity, Life insurance, Bank Deposits

e. Predictors: (Constant), PPF, Equity, Life insurance, Bank Deposits, Company FD

f. Predictors: (Constant), PPF, Equity, Life insurance, Bank Deposits, Company FD, Corp Debenture

g. Predictors: (Constant), PPF, Equity, Life insurance, Bank Deposits, Company FD, Corp Debenture, Antiques

h. Dependent Variable: annual savings

Source: Primary Data   *Table No. 4.4.1 (a)*

Coefficientsᵃ

Model		Unstandardized Coefficients B	Unstandardized Coefficients SE	Standardized Coefficients B	t	Sig.
1	(Constant)	2.591	.094		27.698	.000
	PPF	1.350	.160	.389	8.417	.000
2	(Constant)	2.414	.097		24.978	.000
	PPF	.973	.171	.280	5.683	.000
	Equity	.896	.171	.258	5.234	.000
3	(Constant)	2.262	.097		23.442	.000
	PPF	.561	.179	.162	3.132	.002
	Equity	1.077	.167	.310	6.429	.000
	Lifeins	1.100	.189	.272	5.820	.000
4	(Constant)	1.921	.124		15.454	.000
	PPF	.625	.176	.180	3.549	.000
	Equity	.883	.170	.254	5.186	.000
	Lifeins	1.253	.189	.310	6.644	.000
	BankDep	.631	.149	.190	4.231	.000
5	(Constant)	1.924	.124		15.570	.000
	PPF	.621	.175	.179	3.547	.000
	Equity	.931	.170	.268	5.461	.000
	Lifeins	1.361	.193	.337	7.055	.000
	BankDep	.642	.148	.194	4.329	.000
	CompanyFD	-.669	.281	-.104	-2.381	.018

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6	(Constant)	2.058	.129		15.932	.000
	PPF	.456	.181	.131	2.524	.012
	Equity	.815	.172	.235	4.728	.000
	Lifeins	1.307	.191	.324	6.829	.000
	BankDep	.498	.154	.150	3.242	.001
	CompanyFD	-1.158	.317	-.179	-3.648	.000
	CorpDeben	1.099	.344	.181	3.191	.002
7	(Constant)	1.518	.202		7.506	.000
	PPF	.438	.178	.126	2.460	.014
	Equity	.720	.172	.207	4.178	.000
	Lifeins	1.292	.189	.320	6.839	.000
	BankDep	.626	.156	.189	4.014	.000
	CompanyFD	-1.462	.325	-.227	-4.494	.000
	CorpDeben	1.465	.356	.242	4.114	.000
	Antiques	.634	.185	.157	3.435	.001
a. Dependent Variable: annual savings						

Source: Primary Data   *Table No. 4.4.1 (a)*

Interpretations of the given table:

a) Adjusted R^2 for model 7= 0.347. R^2 is adjusted to reflect the model goodness of fit for the population. The net effect of this adjustment is to reduce the R^2 from 0.347 to 0.336, thereby making comparable to other R^2, from equations with a different number of independent variables.

b) Standard error of model 7= 1.343. this is the standard deviation of actual values of Y about the estimated Y values

c) The critical value of F is found with degree of freedom for the numerator equaling k, the number of independent variables , and for the denominator, n-k-1, where n for model 7 is 11.797 observations. The observation is statistically significant at less than the 0.05 level of significance.

d) The column head Beta gives the regression coefficient expressed in standardized form. when these are used, the regression Y intercept is zero. The equation can be constructed as:

$$Y= 0.01518+ 1.462X_1+1.292X_2+ 0.072X_3+ 0.634X_4+0.626X_5+0.438X_6$$

From the given equation the investors can infer that the independent variable corporate debenture Influences the Investor's annual savings the most followed by Life insurance, equity, antiques and then Public provident funds.

IV. CONCLUSION

There is the significant relationship between the Investors' annual savings and investment preferences in financial market. Investors' are well aware of the investment choices present in the market. The study focused on developing a predictive investment behaviour model. The given model defines the investment behaviour of an investor's based on several hypothesis test and probit analysis. This model only defines the relationship between dependent and independent variables but testing of the given model is not done in the real investment market conditions. So, there is the further possibility of research by testing the investment behaviour model in the investment market.

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