



A Descriptive Research on the Contributing Factors in Mutual Fund Investment Across India

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ABSTRACT

Present study aims to identify the most significant factors in mutual fund investment across India. In this regard a descriptive research is performed to find out the most contributing factors in determining the motivation level of the prospective investors regarding their investment in mutual fund and to investigate their influencing level for the same. Reliability Test has been done checking internal consistency of data, Principal Component Analysis is used to identify major factors, Confirmatory Factor Analysis is applied to frame a model hypothesised on the factors to check the goodness of fit of the model, Regression Analysis is executed to investigate their influence level and to frame an equation on the basis of the same. Lastly different scenario and causal analysis have been depicted with the help of Bayesian Probabilistic Network to establish an overall framework for mutual fund investment strategy implementation.

Keywords: *Mutual Fund Investment, Confirmatory Factor Analysis, Bayesian Probabilistic Network, Indian Insurance Sector*

INTRODUCTION

Today, Mutual Funds has become a extensively accepted and powerful way for the investors to contribute in financial markets in a comparatively trouble-free, economical fashion, while minimising risk depicts by distribution of investment across various kinds of securities, also called as diversification. It has occupied a vital role in an individual's investment plan. They offer the potential

for capital growth and income through investment performance, dividends and distributions under the guidance of a portfolio manager who makes investment decisions on behalf of mutual fund unit holders. Over the past decade, mutual funds have increasingly become the investor's vehicle of choice for long-term investment. Investment decisions are always very crucial as it's directly related with risks and return. Indian Mutual fund industry has performed substantial expansion since its initiation in 1963. The remarkable increase in the Indian Mutual fund industry in current years can mostly be credited to a range of factors such as constructive tax schemes, and induction of numerous new products, mounting household savings, wide-ranging regulatory framework, investor's knowledge movement and function of distributors. To make investment decisions in mutual funds majority of investors consider many factors which are non-performance related variables. It is evident that a small group of investors appears to be highly knowledgeable about their investments whereas most investors appear to be ignorant, having little knowledge of the investment plans or financial details about their investments. Sometimes when people pay fees to equity mutual fund for investment they think that they are reducing the return that they would otherwise achieve by investing in a non managed index fund that tracks the total stock market. Customer's psychology, consumer behaviour, and behavioural finance literatures effect consumer choices about mutual funds. Many studies were undertaken to understand the reasons behind spending money on actively managed mutual

funds and it was identified that the reasons for their investments were that most people overestimated both the future performance and the past performance of their investments. People overestimated the consistency of portfolio performance. In this context Present study aims to identify the most significant factors in mutual fund investment decisions. In this regard a descriptive research is performed to find out the most contributing factors in determining the motivation level of the prospective investors and to investigate their influencing level for the same.

LITERATURE REVIEW

Jones et al (2007)⁸ showed the relationship between advertising, quality, and price in the mutual fund market. This research studies the purchase decision for investors, whether investors can infer mutual fund quality and price from the presence of mutual fund advertising. Post-advertising period shows a negative relationship between advertising and fund used, indicating that previously advertised funds shows weaker performance than non advertised funds. During the post-advertisement time both equity and fixed income funds exhibit lower costing than non advertised funds. K John, et al (2008)⁷ conducted the study with the objective that whether a modified method of supplemental information disclosure impacts investors' fund evaluations and investment intentions. It shows that while investors continue to place too much emphasis on prior performance, the provision of supplemental information and investment knowledge to influence perceptions and evaluations of mutual funds. Gillt, Nahum, Harminder, Gill⁵ (2011) conducted a study based on a sample of people living in Punjab and Delhi .Investment expertise, general knowledge about the economy and the concept of mutual fund consultation with investment advisors. Family size also plays the role to invest in mutual funds. The valuable and useful recommendations for the investment managers and investment advisors have also been provided in the paper. Barreda et al² (2011) made a study to understand the consumer's behaviour towards socially responsible mutual funds. It was found that individuals' criteria for investment are essentially guided by returns and diversification, participants invest significantly more in a fund when they are explicitly informed about its social responsible in nature. Chen Hui-chuan(2011)³ out a research to see that the relationship between mutual funds 'net assets, share prices, manager tenures, expense ratio, tax – cost ratio and annualized returns to investigate whether Consumer Reports is an

authentic source for people planning to invest in mutual funds. Gatzert,, Carin and Hato⁴ (2011) shows that even though the majority of the participants are significantly lower on average than the prices obtained using a financial pricing model. A considerable portion of participants is still willing to pay a substantially higher price. Kaurinderjit, KaushalK.P.⁶ (2016) made a study that in India the investment in mutual funds is very less as compared to other developing countries. This research's objective is to understand the factors that control investment behaviour of investors towards mutual funds. This research said that investment behaviour is influenced by awareness, perception and socioeconomic characteristics of investors. Risk perception for mutual funds had no effect on the investment decision. Age, gender, occupation, income and education of investors had an impact on the awareness about mutual funds. Acharya et al (2017)¹ shows that the present study focus on the past studies conducted by various academicians, researchers to know the investor's preference towards mutual funds. Various literatures are studied to judge the perfect mutual fund for investment. Reepu⁹ (2017) performed a study to know about Mutual Fund, its various schemes and analyse the different risk factors involved in investing in mutual funds.

OBJECTIVES

- To identify the most dominating factors in *determining the motivation level of the prospective investors*
- *To investigate their influencing level for the same in Indian mutual fund setor.*
- to develop a framework which may lead to policy implementation on the basis of the above factors

METHODOLOGY

A questionnaire is designed to gather data from the 456 investors from all four regions of India to identify the factors that are of prime concern to invest in mutual fund. A descriptive research is done to identify the factors of importance to investors.

RELIABILITY TEST has been done checking internal consistency of data, PRINCIPAL COMPONENT ANALYSIS is used to identify major factors, CONFIRMATORY FACTOR ANALYSIS is applied to frame a model hypothesised on the factors to check the goodness of fit of the model,

REGRESSION ANALYSIS is performed on the major factors identified to investigate their influence level and to frame an equation on the basis of the same. Bayesian probabilistic network is applied to frame a model for the mutual fund companies for *investment policy implementation* on the basis of different scenario and causal analysis.

DATA ANALYSIS:

RELIABILITY ANALYSIS

Table 1: Reliability Statistics

Cronbach's Alpha	N of Items
.748	16

The Cronbach's Alpha value of .813 reflects a good internal consistency to proceed with the analysis.

INTERPRETAION OF PRINCIPLE COMPONENT ANALYSIS:

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.829
Bartlett's Test of Approx. Chi-Square	3217.67
Sphericity Df	93
Sig.	.000

Here, from the perspective of Bartlett's test of sphericity, factor analysis is significant and feasible as p value is .000 i.e. less than .05. As Bartlett's test is significant, a more discriminating index of factor analyzability is the KMO. For this data set, KMO value is .829 (very close to 1.0), which is very high, so the KMO also supports factor analysis.

FACTOR IDENTIFICATION:

Determination based on eigenvalues:

In this approach, only those factors with eigenvalues greater than 1 are considered. Other factors are not included in this model. Here, from the SCREE PLOT and the table TOTAL VARIANCE EXPLAINED, 3 factors can be identified whose eigenvalues are more than 1.

Determination based on percentage of variance:

The number of factors extracted can also be determined in a way so that the cumulative percentage of variance extracted by the factors reaches a satisfactory level. Here according to the analysis, the cumulative percentage of variance extracted by the 3 factors is 76.75 % (from the table TOTAL

VARIANCE EXPLAINED), which is quite satisfactory.

FACTOR INTERPRETATION:

Factor interpretation is facilitated by identifying the variables that have large loading on the same factor. That factor can be interpreted in terms of variables that load high on it.

In the ROTATED COMPONENT MATRIX,

Factor 1 has high coefficients 0.823 for variables financial literacy, 0.769 for knowledge and 0.706 for understanding available saving and investment vehicle

Factor 2 has high coefficients 0.789 for variables Values, 0.717 for attitudes and 0.658 for perceptions regarding saving and investment

As factor 1 is treated as principal component, so, in this case, **financial awareness** is the most significant factor followed by the **frame of mind** and **Trust** factor with respect to motivation in investing in mutual fund.

INTERPRETAION OF CONFIRMATORY FACTOR ANALYSIS**Result (Default model)**

Minimum was achieved,

Chi-square = 76.257

Degrees of freedom = 8

Probability level = .000

Table 3: Model Fit Summary

CMIN					
Model	NPARG	CMIN	DF	P	CMIN/DF
Default model	13	76.257	8	.000	4.864
Saturated model	21	.000	0		
Independence model	6	1339.259	15	.000	89.284
RMR, GFI					
Model	RMR	GFI	AGFI	PGFI	
Default model	.040	.959	.892	.365	
Saturated model	.000	1.000			
Independence model	.400	.467	.254	.334	
Baseline Comparisons					
Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.950	.907	.956	.917	.956
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000
RMSEA					
Model	RMSEA	LO 90	HI 90	PCLOSE	
Default model	.001	.095	.149	.000	
Independence model	.421	.402	.440	.000	

This model indicates a good fit. The CMIN table shows a value of less than .5 indicating a good fit for the model. The GFI shows an acceptable value of more than .95. The NFI and CFI score (.950 and .956 respectively) also indicates a good fit of the model. The RMSEA value of (.001) confirms a good fit of the hypothesised model. This shows minimum difference between the sample covariance and the original covariance of the model.

INTERPRETAION OF MULTIPLE REGRESSION ANALYSIS:

A regression analysis is done on the major factors extracted by factor analysis to find its impact on the overall motivation level. It can be seen that there exist a significant impact of interaction with teachers and extra-curricular activities in assessing the overall satisfaction level.

It is observed from regression that *Financial Awareness* (38.52%), *Frame of Mind* (28.70%) and *Trust* (24.24%) are the most dominating factors influencing overall motivation level with respect to mutual fund investments which corroborates with the result of factor analysis.

So the regression equation can be drawn as :

$$\text{Motivation towards Investment in Mutual Fund} = 1.340 + 0.385 \text{ Financial Awareness} + 0.287 \text{ Frame of Mind} + 0.242 \text{ Trust}$$

INTERPRETATION OF BAYESIAN PROBABILISTIC NETWORK:

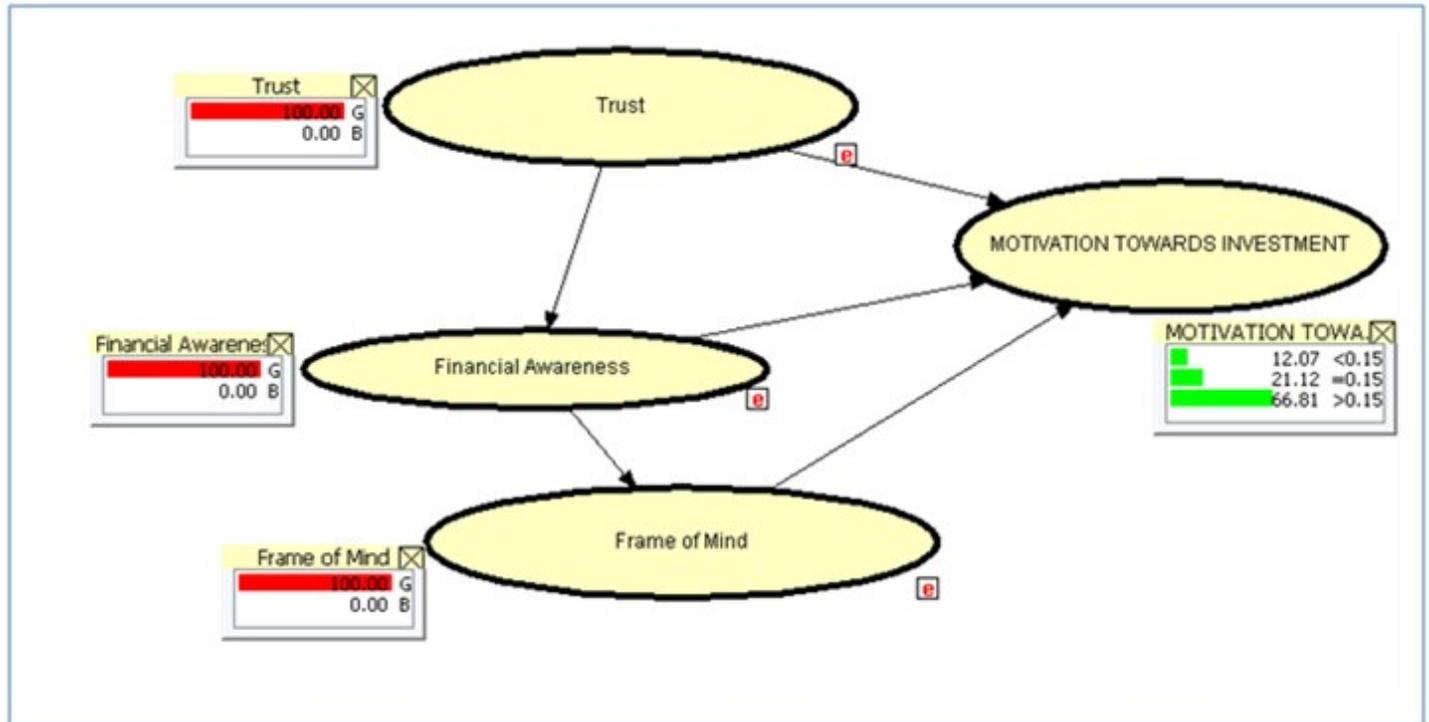
As part of initiative for further research, the empirical analysis has been recast in terms of Bayesian Probabilistic Framework. The independent factors – **financial awareness, frame of mind and trust** – have binary measures from the available evidence and a probability distribution of the dependent variable– Motivation towards Investment in Mutual Fund – occupies and completes the Bayesian framework. As it’s an well known fact that Bayesian Probabilistic frameworks provide an elegant solution, particularly in cases of limited data and when qualitative and/or a mix of qualitative and quantitative data need to be used. This is precisely the case in the current investigation. The basic framework is given in the following diagram. A spectrum of scenario and causal analyses follows.

BAYESIAN PROBABILISTIC NETWORKS

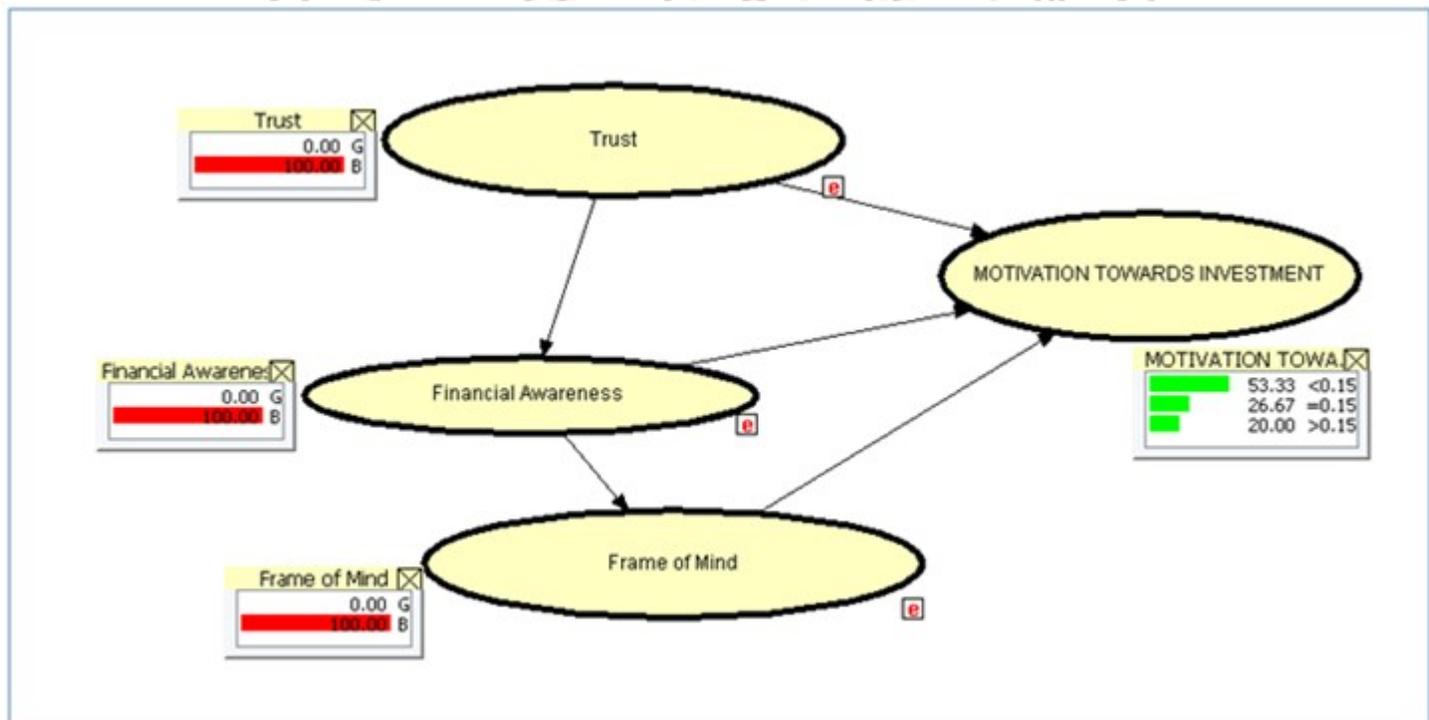


SCENARIO ANALYSIS & CAUSAL ANALYSIS:

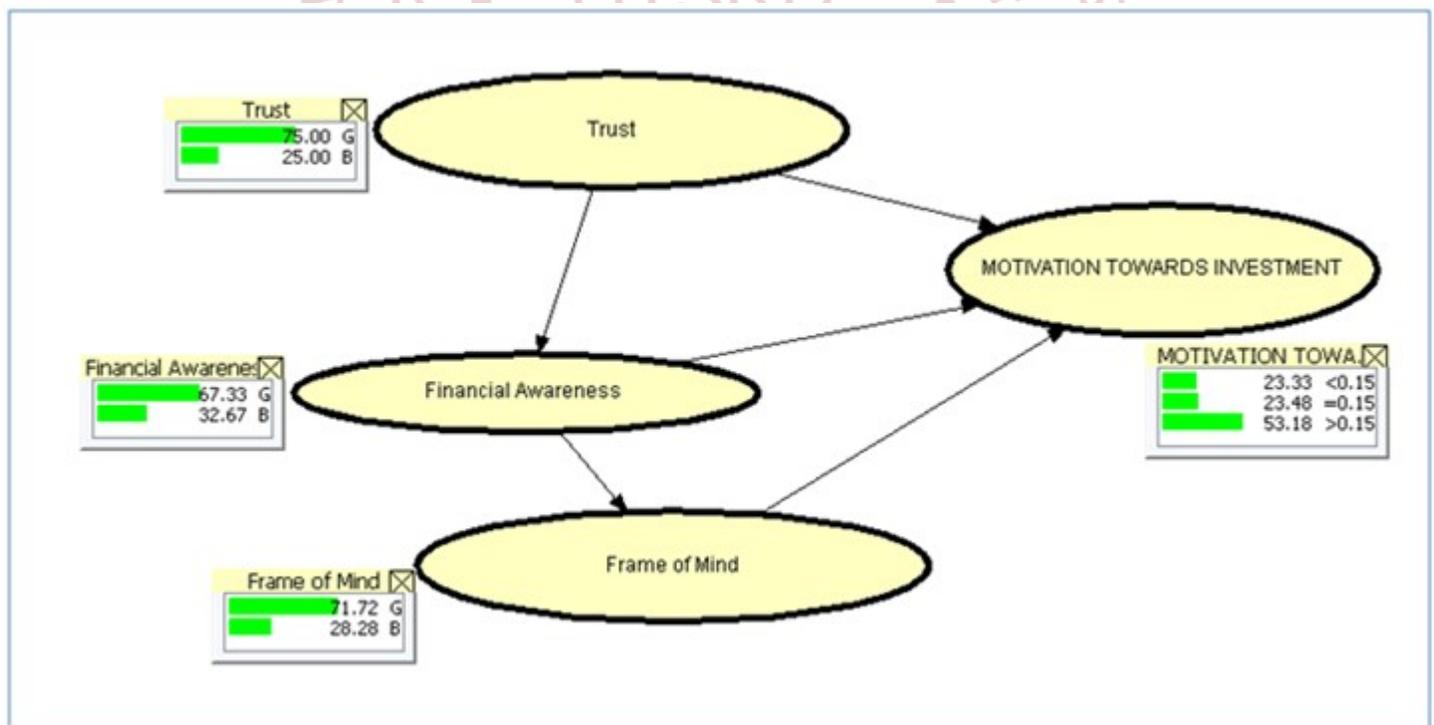
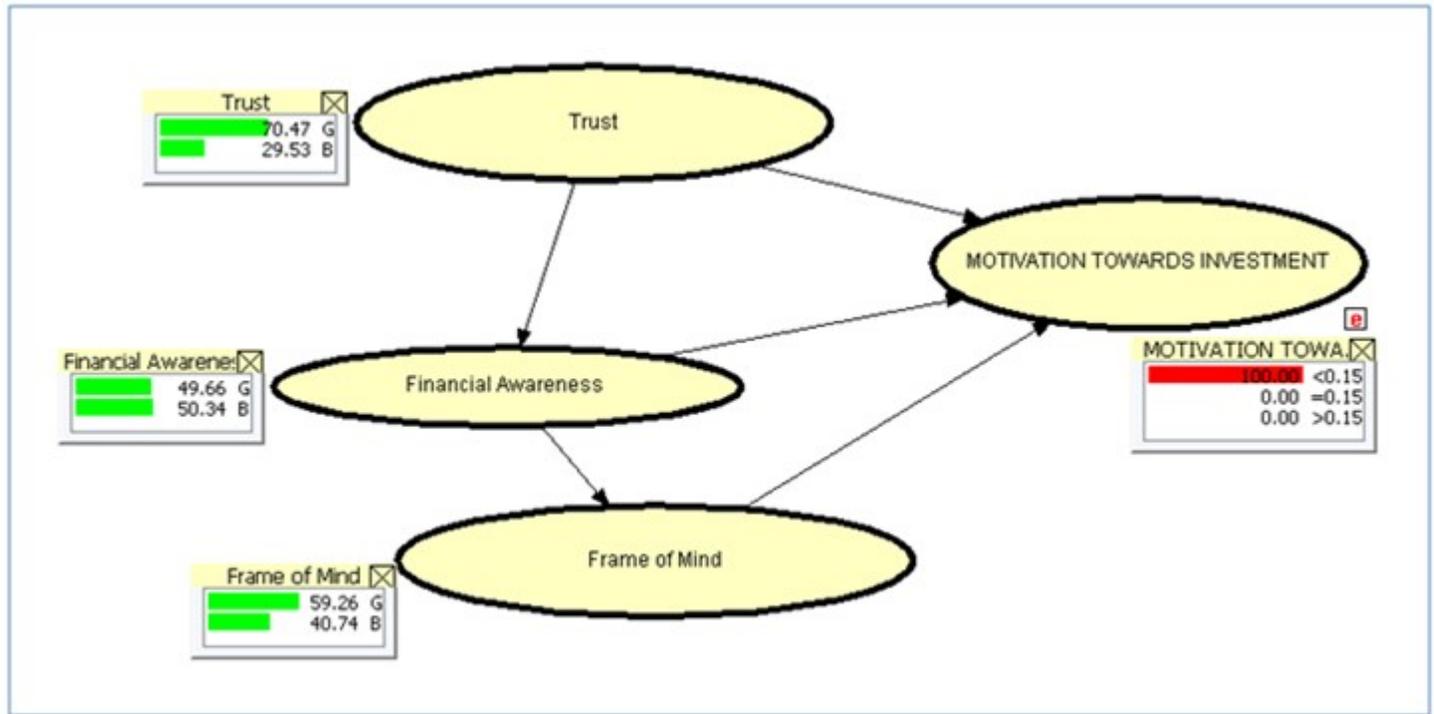
SCENARIO ANALYSIS I



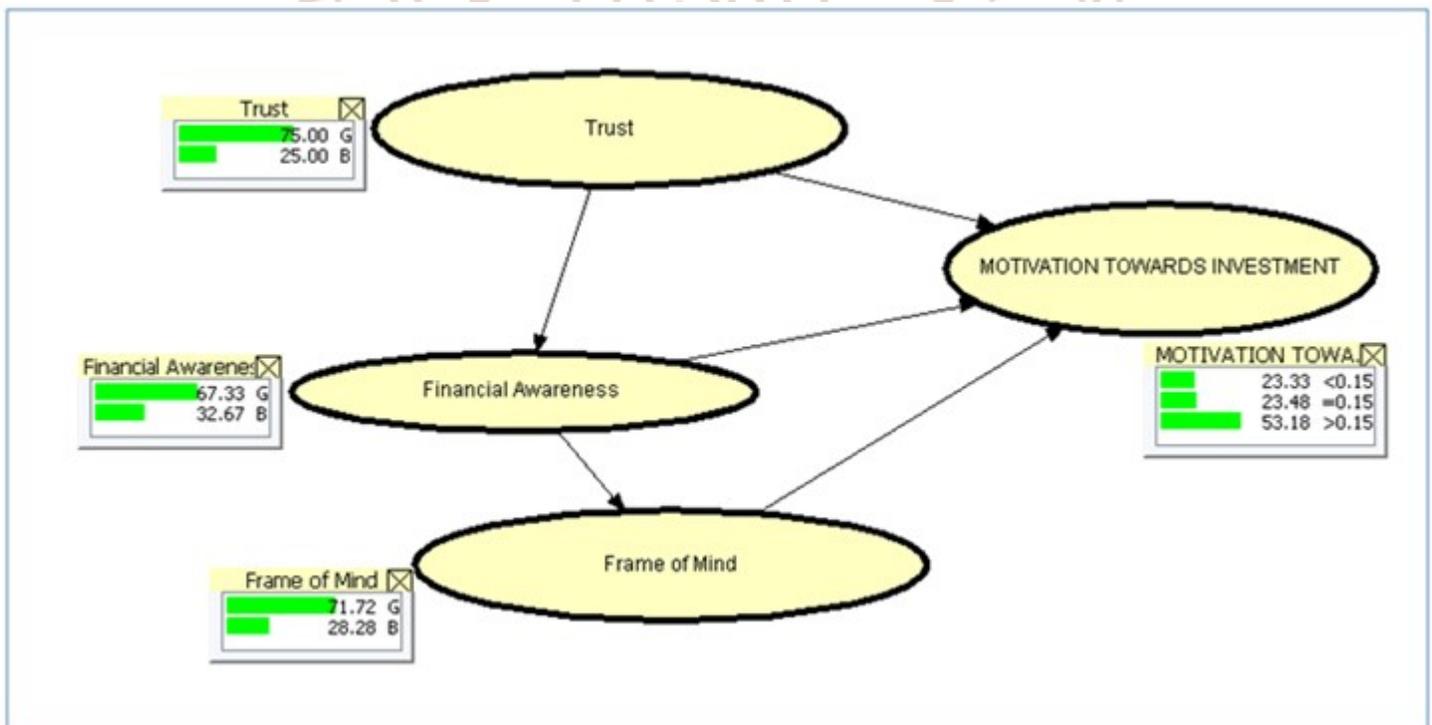
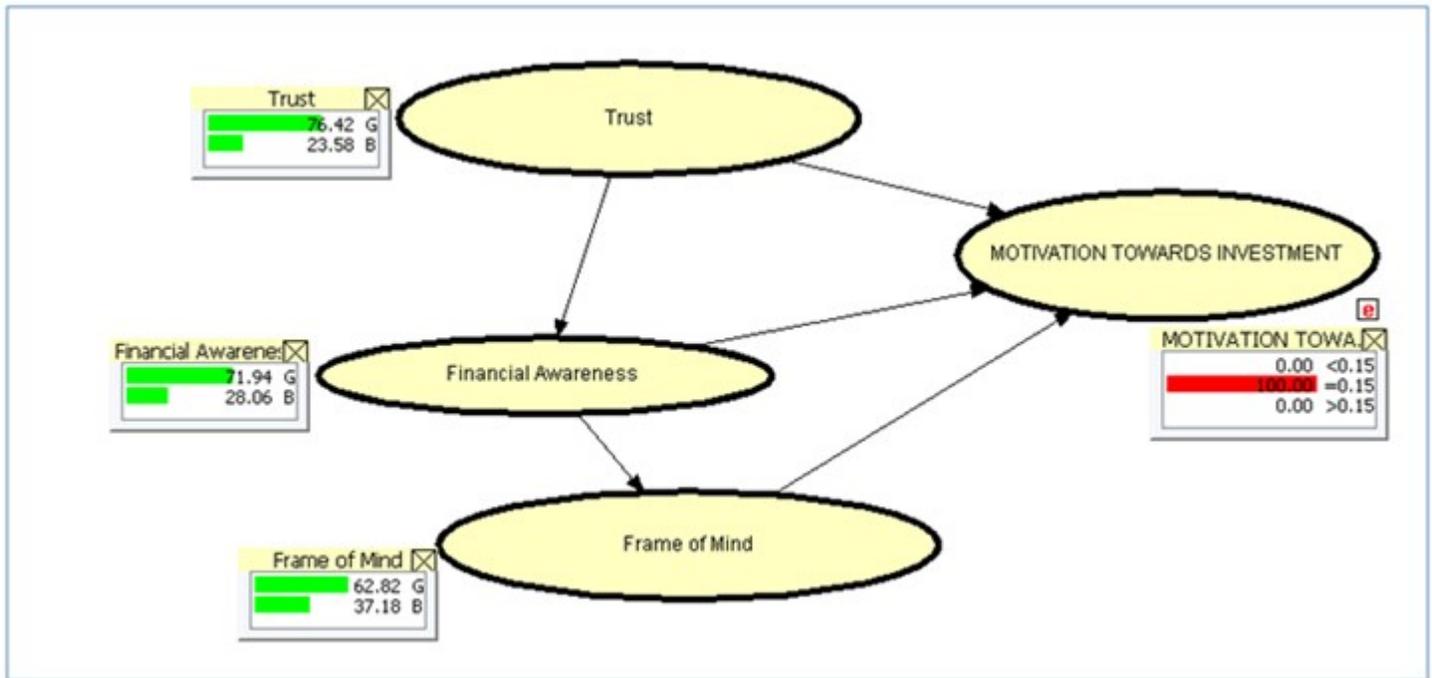
SCENARIO ANALYSIS II



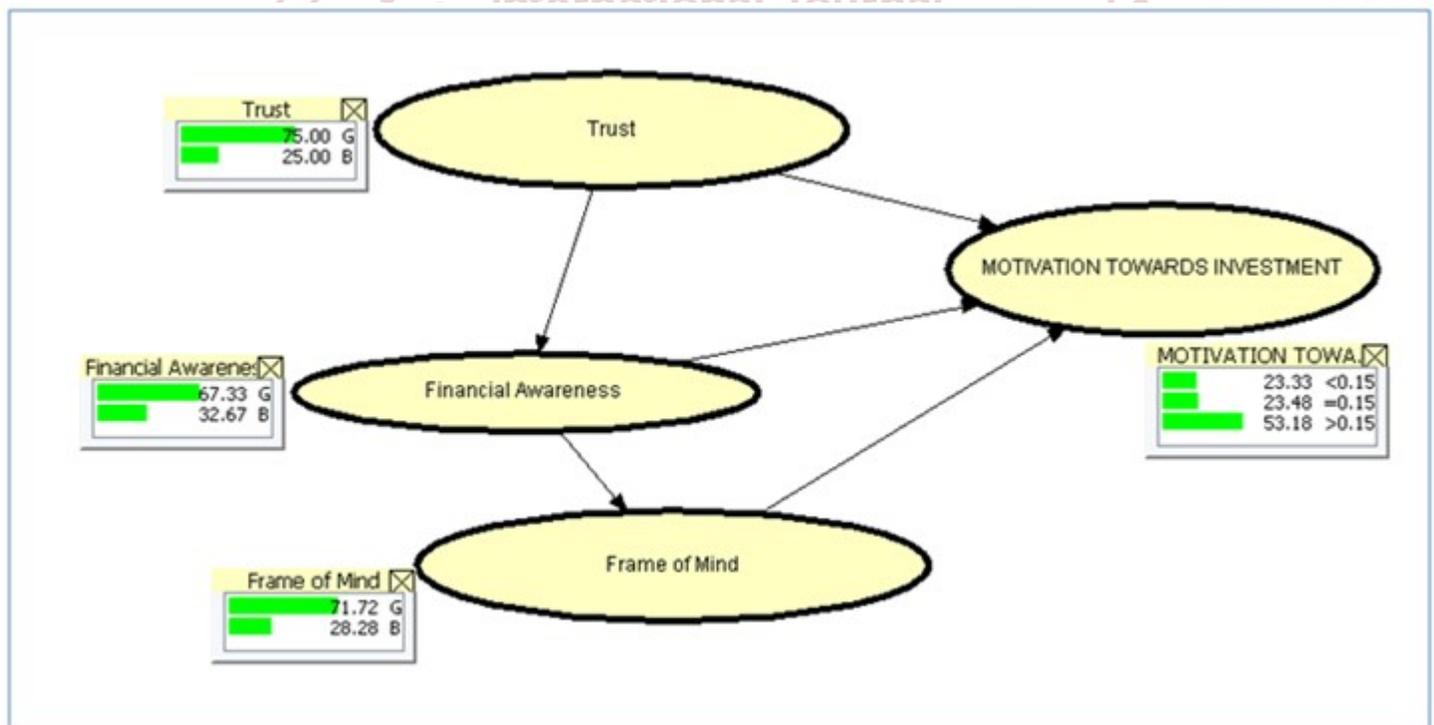
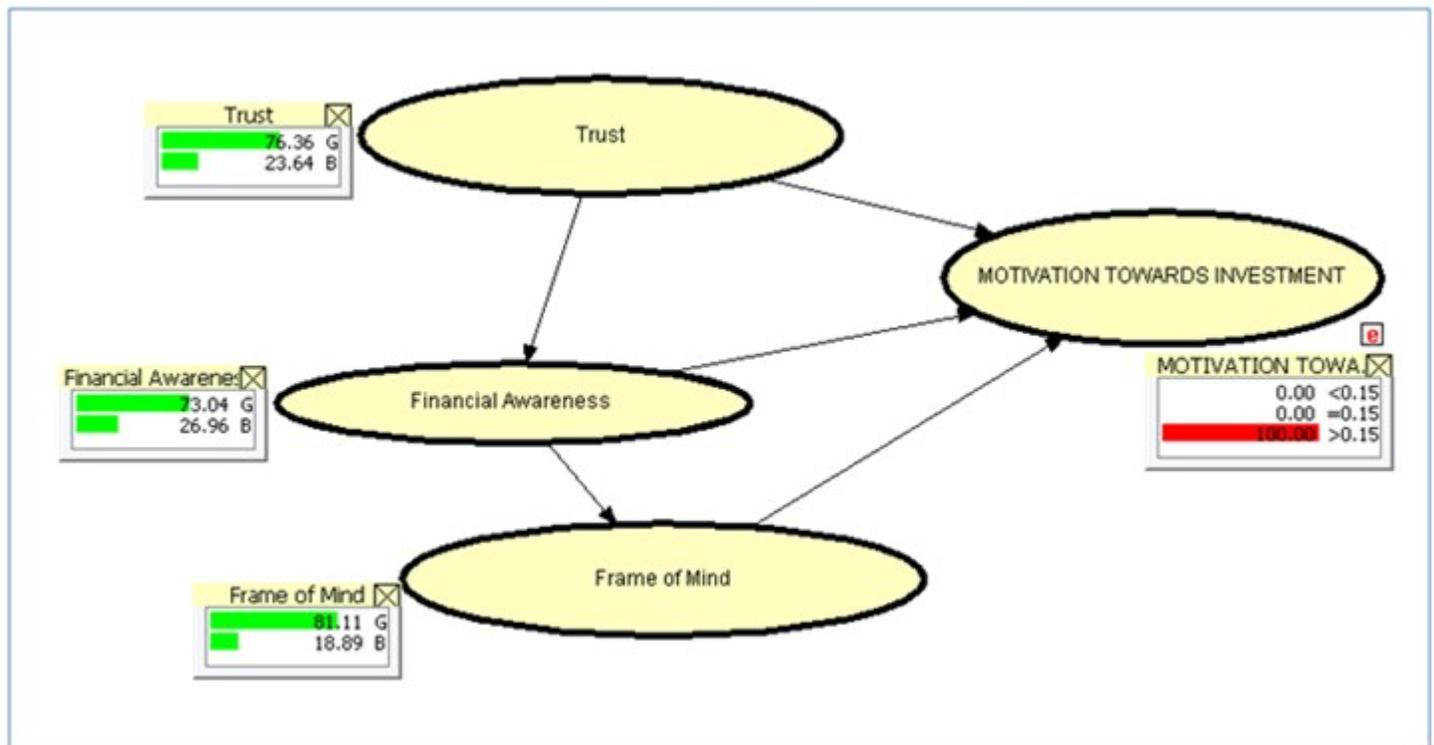
CAUSAL ANALYSIS I:



CAUSAL ANALYSIS II:



CAUSAL ANALYSIS III:



CONCLUSION

SCENARIO AND CAUSAL ANALYSIS:

With **Scenario Analysis**, one can calibrate one or more causal or independent factors in the network and analyze its impact on the *Motivation towards Investment in Mutual Fund* estimate. For example,

one might be interested in high *Financial Awareness*, *Frame of Mind* and *Trust* to check how these changed level affect dependent variable; other might like to check how the low score in the *independent variables* convert the scores of *the dependent variable*.

Under **Causal Analysis**, new evidence of *Motivation towards Investment in Mutual Fund* is used to calculate updated probabilities (also referred to as posterior probabilities) of all the causal/ independent factors. In other words, additional *Motivation towards Investment* information is propagated to all the nodes in the network. This technique of evidence (new *Motivation towards Investment* data) propagation is extremely useful for analyzing the causes that impact *Motivation towards Investment in Mutual Fund*.

The Bayesian process of statistical estimation is one of continuously revising and refining the probable influences of the independent *Financial Awareness, Frame of Mind* and *Trust* related factors about the state of the outcomes regarding *Motivation towards Investment in Mutual Fund* as more data become available.

RESEARCHER'S NOTE:

So this research lays the foundation of an *Investment model* for the Indian investors; most significant factors and their influencing levels have been identified by principal component analysis and multiple regression. Bayesian analysis lays down different scenarios are available to them where they can find out how the highest or lowest value of the most significant factors like *Financial Awareness, Frame of Mind* and *Trust* affect on the lowest, moderate and highest level of *Motivation towards Investment in Mutual Fund*; on the contrary, a Causal analysis at the end clearly discerns what levels of the significant factors would obtain desired values of *Motivation towards Investment* for the Indian mutual fund companies.

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