Impact of Personality Measures and Investors' Biases on Decision - Making Skills of Women Investors in Mutual Funds

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Abstract

Mutual funds (MFs) have grown to be a main vehicle for mobilization of savings, especially from the small and household sector for investment in the stock market, which ensures high returns and low risk. Indian investors are peculiar in nature, and it is tough to predict their behaviour as they belong to different cultures, religions, lifestyles, social status, education levels, and income groups. The study was conducted with the aim of analyzing the impact of personality measures and investors' biases on decision-making skills of women investors in mutual funds. The data were collected from 270 women investors who were living in Chennai city, Tamil Nadu through questionnaires in the year 2017 - 18. The opinion of women investors was gathered through a 5-point scale on the impact of personality traits and investors' biases on decision to invest in mutual funds. Confirmatory factor analysis method was used for data analysis. The study revealed that investors' biases had a great impact on the decision-making skills of women investors and there was a statistically significant indirect effect of personality measures on decision-making skills through investors' biases.

Keywords: **decision making skills, investors' bias, mutual funds, MFs, personality measures, women investors**

JEL Classification: G41, G19, D140

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Investors have various alternatives for investing their money, that is, deposits in banks, real estate, gold, capital markets, etc. There was a turnaround in the stock markets in the last two decades, and a major portion of investors preferred to invest in capital markets. Due to the uncertain nature of the stock market, an investor has to take appropriate measures to analyze the condition of the market on a regular basis in order to gain returns and minimize risk. To minimize the risk for a new investor, investment in mutual funds (MF) may be the best option for safe returns on his/her investments, particularly for women. Investors do not require a considerable initial investment, the minimum amount required for investment in most MFs is as low as ₹ 500, they carry only a moderate amount of risk, and are also capable of providing a secondary income (Mohan, 2017). Housewives benefit greatly from MFs because they earn returns on otherwise idle cash savings. Before talking about operation

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of MFs, investment selection of different personality traits of investors is very much needed. This study is an attempt to articulate about how the decision making styles of women investors are affected by their personality traits and biases.

Review of Literature

The MF companies should design their schemes after careful study of investors' decision making behaviour and switching behaviour (Vyas & Moonat, 2012). Desigan, Kalaiselvi, and Anusuya (2006) pointed various reasons for women investors not investing in MFs, that is, not aware of investment options and procedures, risks involved, grievance processes, etc. An empirical study conducted by Vijayalakshmi (2017) found significant positive relationship between risk and returns for individual and portfolio investments. Singh (2012) observed that the investors' attitude was affected by their gender, income, and qualifications. Sindhu, Rama Krishna, and Reddy (2017) stated in their study that the demographic variable - age was significantly related with safety of investment and also found that there was no relationship between the personal attributes of MF investors and their investment perceptions. George and Chandran (2016) observed that satisfaction on returns was significantly related to period of investment. Women investors are quite cautious about their investments that they continuously monitor their investments and tend to select only reliable schemes. Their levels of satisfaction reflect their decision to re-invest in MFs.

Investors' decision making has been found to be positively affected by psychological factors (Lim, 2012 ; Qadri & Shabbir, 2014 ; Qureshi, Rehman, & Hunjra, 2012). However, some studies also found that decision making was not affected by some of the psychological factors. The behavioral factors such as overconfidence (Luong & Thi Thu Ha, 2011), loss aversion and mental accounting (Masomi & Ghayekhloo, 2011), and herding (Gunay & Demirel, 2011) have been found to affect the decisions of investors.

Indian investors are prone to behavioral biases during their investment decision making process. Income was found to be a significant factor impacting the overconfidence level. Age, sex, earnings, wealth, and marital status of individuals also affected their decision on investments (Mittal & Vyas, 2009 ; Verma, 2008). Individuals who are more extraverted intend to engage in short term investing, while those who are in neuroticism avoid this activity (Mayfield, Perdue, & Wooten, 2008). The personality traits of investors have an effect on the individuals while taking decisions and strongly influence their decisions on determining the method of investment (Sreedevi & Chitra, 2012). There is a need to make effective strategies by MF agencies and statutory bodies to bring more confidence among MF investors (Gupta, 2011).

The purpose of this research is to address the gap in the knowledge of literature relevant to the MF investors, particularly women in their decision making skills. Based on this, the research question is framed as : How do different personality traits and biases impact the women investors and their investment decisions ?

Mutual Funds in India

Mfs have grown to be a main vehicle for mobilization of savings, especially from the small and household sector for investment in stock markets, which ensures high returns and low risk. Mutual funds came into existence in India in the year 1963. Unit Trust of India was the first association to launch the concept of MFs in India. In the post - liberalization era, around 24 million UTI shareholders were assured high returns on investing in MFs. At present, various financial institutions, banks, and insurance companies are issuing various types of MFs in different schemes with more features. Around 34 MFs in India are offering multiple MF products (Kumar & Arora, 2013). A mutual fund collects money from a cross-section of investors by issuing units ; builds a diversified

portfolio of stocks, bonds, and other investment instruments ; and invests the same in the capital market with the aim of providing a steady flow of income with high capital appreciation. As the prime regulator of capital market actives in India, the Securities and Exchange Board of India's (SEBI) basic objective is to protect the interest of investors. Every mutual fund shall be registered with SEBI. Assets under management is the total market value of investments managed by an asset management company (AMCs). According to the data from the Association of Mutual Funds in India (AMFI), the assets under management (AUM) of the mutual fund industry was ₹ 22.86 lakh crores and net inflow in mutual fund schemes stood at ₹ 46, 475 crores as in June 2018. SEBI's Investor Survey (SIS) 2015 showed some key findings on mutual fund investors. Among the 5,356 respondents with financial investments, around 66% (or 3,536 investors) had put money in MFs, making MFs the most favoured financial instrument among Indian investors.

The major benefits of MFs are diversification of investments, expert investment management, liquidity, convenience, transparency, flexibility, better returns with minimum risk, and high capital appreciation. However, high costs, low penetration, lack of clarity about the risks associated with new and existing schemes, and poor transparency in the computation of net asset value (NAV) are the main concerns in the industry. These issues are keeping the investors away from mutual funds. Indian investors are peculiar in nature, and it is tough to predict their behaviour as they belong to different cultures, religions, lifestyles, social status, education levels, and income groups. This study attempts to find out the effect of personality traits and investors' biases on decisions making skills of women investors with regard to MFs.

Objectives of the Study

(1) To analyze the impact of personality measures and investors' biases on decision making skills of women investors.

(2) To analyze the direct and indirect effects of personality measures and investors' biases on decision making skills of women investors.

Methodology

(1) Data : A structured questionnaire was used to gather information from 270 sample respondents working in schools and colleges, banks and other sectors, post graduate students, self-employed women, and housewives who had invested in MFs. Hair, Anderson, Tatham, and Black (1998) proposed that with quantitative research, a minimum of 100 respondents should be considered in order to carry out the statistical analysis. Data were collected in the academic year 2017-18.

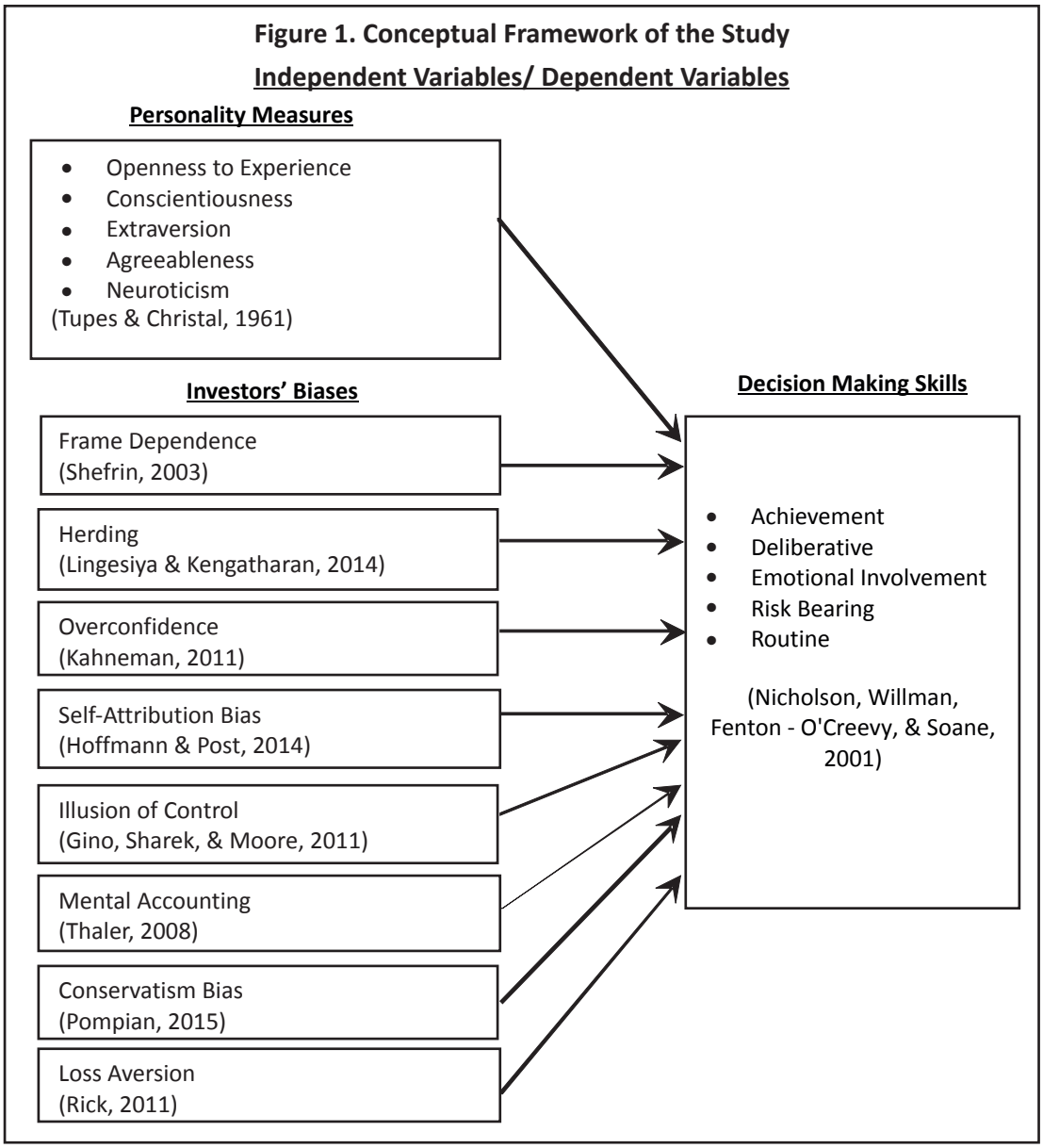
(2) Sampling : Convenience sampling and snowball sampling techniques were used to select samples from the population of women investors in Chennai city. As the total population could not be determined and thus sampling frame could not be found, convenience sampling was used to select the sample (Bryman & Bell, 2007). We, after meeting a convenience sample, collected information about other investors and approached them for gathering data as a snowball sample.

(3) Data Sources : Primary data were collected from the sample respondents. The questionnaire consisted of four sections - demographic variables, personality measures, investment biases, and decision making factors of women investors.

(4) Statistical Design : Structural equation modelling was used to achieve the objectives of the study. The statistical software SPSS and AMOS were used for data analysis.

(5) Research Framework : The conceptual framework of the study is displayed in the Figure 1. It ascertains the impact of the factors of personality traits and investors' biases on women investors' decision making regarding investment in MFs. There are five personality measures which are : neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness and eight investors' biases variables, which are : frame dependence, herding, overconfidence, self attribution bias, illusion of control, mental accounting, conservatism bias, and loss aversion. All of these personality measures and investors' biases variables are found to have played

Figure 1. Conceptual Framework of the Study



important roles in determining women investors' investment decision-making attributes such as achievement, deliberative, emotional involvement, risk bearing, and routing based on studies by previous researchers.

The five personality traits (also known as the five factor model (FFM)) described by Tupes and Christal (1961) have been taken as independent variables to know the impact on the decision making skills of the investors. The factors are openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism (OCEAN). Digman (1990) advanced his five-factor model of personality in 1990 and Goldberg (1993) extended this to the highest level of an organization. Many researchers have used these five domains as the basic structure behind all personality traits.

The investors' biases variables have been taken from various studies. Frame dependence means that a person makes decisions that are influenced by the manner in which the information is accessed (Shefrin, 2003). While making investment decisions, investors are usually more influenced by how the information is presented than what information is presented. Lingesiya and Kengatharan (2014) explained that the herding effect in financial markets is identified as the tendency of investors to follow others' actions. Then there are people who believe that they have expertise in all aspects/areas and this kind of individuals are called as overconfident professionals (Kahneman, 2011). He also felt that a little amount of knowledge about investments may lead to higher amount of investments, however, not ending up with achieving the desired earnings. He described overconfidence as 'the most significant of all biases'.

Self-attribution bias refers to a person's tendency to attribute successes to his/her own skill but blame failures to factors out of control (Hoffmann & Post, 2014). Gino, Sharek, and Moore (2011) described that when people have a great deal of illusion of control, then they underestimate things and this was stated by earlier researchers as the tendency for people to overestimate their talent to control actions. Mental accounting is the process whereby individuals code, categorize, and measure financial outcomes (Thaler, 2008). Pompian (2015) pointed out that, "When conservatism-biased investors do react to new information, they often do so very slowly. Recent evidence suggests investors make systematic errors in processing new information that may be profitably exploited by others" (p.65). In decision theory (Steele & Stefánsson, 2015), loss aversion indicates people's tendency to strongly prefer avoiding losses to acquiring gains. Aversion to loss is a strong emotion. The aversive response replicates the critical role of negative emotions (anxiety and fear) to losses (Rick, 2011).

Analysis and Results

Multiple regression analysis is used to fit a model for each of the variables of decision - making skills of women investors, that is, achievement, deliberative, emotional involvement, risk bearing, and routine based on their personality measures, that is, neuroticism, extraversion, openness to experience, agreeableness, conscientiousness, and investors' biases - frame dependence, disposition effect, herding, overconfidence, cognitive dissonance, availability bias, self-attribution bias, illusion of control, mental accounting, loss aversion, and conservatism bias on decision making variables. The following hypothesis is assumed for the model :

↳ **H_o:** There is no significant combined effect of personality measures and investors' biases variables on the decision making skills of women investors.

As significant correlations were observed among most of the independent variables, it was felt that the problem of multicollinearity may arise. Hence, we decided to go for stepwise regression to take care of the problem of multicollinearity, and multiple regression analysis through SPSS software was used to determine the effect of the independent variables (personality measure variables and investors' biases variables) on the dependent variables (decision making skills variables). The results of the regression model are displayed in the Table 1.

Table 1. Coefficients of Regression Models

Variables		Attributes of Decision Making Skills				
		Achievement	Deliberative	Emotional Involvement	Risk Bearing	Routine
Personality	Neuroticism	0.232	0.172	0.501	0.378	0.153
Measures	Extraversion	0.078	-0.192	0.295	0.224	0.269
	Openness to Experience				0.307	
	Agreeableness	0.092	0.142		-0.280	
	Conscientiousness			-0.179	-0.242	0.205
Investors'	Frame Dependence	0.119	0.162	-0.132	0.144	0.123
Biases	Herding			-0.079	0.171	-0.161
	Overconfidence	0.198	0.190	-0.098	-0.119	
	Self-Attribution Bias		0.152			-0.189
	Illusion of Control	0.173		0.196		
	Mental Accounting	0.152		0.343		
	Conservatism Bias		0.220			0.402
	Loss Aversion	0.125	0.984	0.172	0.247	
	R^2	0.542	0.748	0.686	0.423	0.383
	F	31.745	39.903	35.982	13.821	9.712
	P	0.000	0.000	0.000	0.000	0.000

The models for all the decision making attributes are significant ($p < .01$) at the 1% level of significance. The *R* - square value for the model for the attribute : achievement is 0.542, which implies that about 54% of the variation in achievement is explained by the personality measures and investors' biases variables. The personality measure variable : neuroticism has a positive impact, with neuroticism having the highest influence on the decision making attribute : achievement of an investor followed by agreeableness and extraversion. Of the investors' biases variables, overconfidence, illusion of control, mental accounting, loss aversion, and frame dependence - all have a positive impact on achievement, with overconfidence having the highest influence followed by the other variables in the order.

The *R* - square value for the model for the attribute : deliberative is 0.748, which implies that about 75 % of the variation in deliberative is explained by the personality measures and investors' biases variables. The personality measure variables : neuroticism and agreeableness have a positive impact, and extraversion has a negative impact on the decision making attribute : deliberative of an investor. Of the investors' biases variables, frame dependence, overconfidence, and self-attribution bias - all have a positive impact on deliberative, with loss aversion having the highest influence followed by the other variables in the order.

The *R*- square value for the model for the attribute : emotional involvement is 0.686, which implies that about 69% variation in emotional involvement is explained by the personality measures and investors' biases variables. The personality measure variables : neuroticism and extraversion have a positive impact, and conscientiousness has a negative impact on the decision making attribute : emotional involvement of an investor. Of the investors' biases variables, frame dependence, herding, and overconfidence - all have a negative impact, and illusion of control, mental accounting, and loss aversion : all these have a positive impact on emotional involvement. The variable : mental accounting has the highest influence followed by neuroticism and loss aversion.

The *R*-square value for the model for the attribute : risk bearing is 0.423, which implies that about 42% of the variation in risk bearing is explained by the personality measures and investors' biases variables. It can be noted

that all the personality measure variables have a significant influence on the risk bearing nature of the investors. The variables : neuroticism, extraversion, and openness to experience have a positive impact, with neuroticism being the most influential ; however, the variables : agreeableness and conscientiousness have a negative impact on risk bearing. Of the investors' biases variables, frame dependence, herding, and loss aversion : all have a positive impact, and overconfidence has a negative influence on risk bearing.

The *R* - square value for the model for the attribute : routine is 0.383, which implies that about 38% of the variation in risk bearing is explained by the personality measures and investors' biases variables. It can be noted that the personality measure variables : neuroticism, extraversion, and conscientiousness have a significant influence on the routine nature of investors. Of the investors' biases variables, frame dependence and

Figure 2. Structural Model for Decision Making Skills (with Loadings)

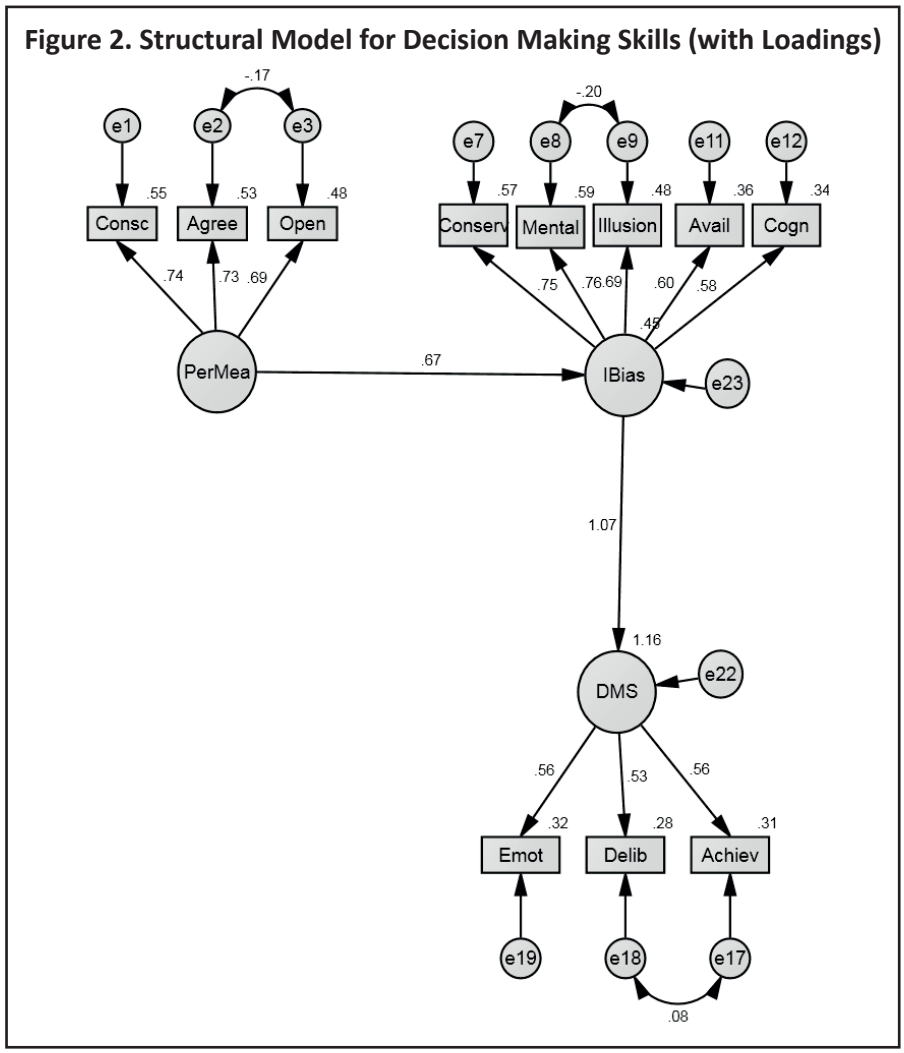


Table 2. Results of Confirmatory Factor Analysis

Chi-Square	*Df*	*P*	GFI	AGFI	CFI	TLI	RMSEA
117.096	38	.00	.927	.873	.933	.904	.058
Norms			>.9	>.9	>.9	>.9	<.06

conservatism bias have a positive impact, and the variables : herding and self-attribution bias have a negative impact on routine.

It can be observed that the personality measure variables : neuroticism and extraversion influence all the decision making variables. Also, the investors' biases variable : frame dependence has an impact on all decision making attributes, and the variables : overconfidence and loss aversion have an impact on all decision making variables except routine behaviour of investors.

It is discussed in the regression analysis how the personality measures and investors' biases can have an impact on the decision making skills of the investors. However, the conceptual model of this paper studies the relationship between the decision making skills via interrelation between personality measures and investors' biases. The initial model suggests that the decision making skills are not influenced by the personality measures, and hence, the model was restructured to find the impact of personality measures on decision making skills through investors' biases. This model is tested using SPSS AMOS version 20 software and is displayed in Figure 2 and the results are depicted in the Table 2.

The results suggest that the norms of a reasonably high fitting model are satisfied. However, before going into further analysis, the normality of the variables considered for the study was also checked and it is found that almost all the variables satisfy the normality condition (Z_{skew} and Z_{kurt} values fall within the range of -2.58 to +2.58 except few variables, which can be overlooked as the sample size is sufficiently large). The results of normality check are presented in the Table 3.

The regression weights of the parameters used in the model are shown in the Table 4 . It can be observed from the Table 4 that the relationship between personality measures and decision making skills is not significant (p >.05), but there is a significant relationship between investors' biases and decision making skills. Also, the attributes of personality measures, investors' biases, as well as decision making skills significantly explain their respective total variations.

The hypotheses assumed are presented in the Table 5 and are tested for validity. It can be observed that the personality measures do not have an impact on the decision making skills, but have a significant indirect effect on decision making skills through investors' biases. This result reflects the findings of the study conducted by Sindhu et al. (2017). Also, investors' biases have a strong impact on the decision making skills of women investors. Belief and self-confidence were found to have a positive impact on investment decision-making in previous studies as

Table 3. Assessment of Normality

Variable	Skewness	Critical Ratio	Kurtosis	Critical Ratio	Z_{skew}	Z_{kurt}
Emotional Involvement	-0.591	-4.512	1.424	5.439	-3.964	4.776
Deliberative	-0.657	-5.021	1.708	6.522	-4.406	5.729
Achievement	-0.133	-1.016	0.566	2.162	-0.892	1.898
Cognitive Dissonance	-0.305	-2.33	-0.585	-2.235	-2.046	-1.962
Availability Bias	0.032	0.241	-0.13	-0.497	0.215	-0.436
Illusion of Control	-0.04	-0.308	0.03	0.113	-0.268	0.101
Mental Accounting	-0.505	-3.857	-0.077	-0.294	-3.387	-0.258
Conservatism Bias	-0.101	-0.774	0.176	0.672	-0.677	0.590
Openness to Experience	-0.215	-1.639	0.491	1.874	-1.442	1.647
Agreeableness	-0.113	-0.861	0.108	0.411	-0.758	0.362
Conscientiousness	0.415	3.17	-0.45	-1.72	2.783	-1.509

Table 4. Regression Weights

V1		V2	UE	SE	R^2	S.E.	C.R.	P
Decision Making Skills	←	Investors' Biases	0.457	0.950	1.066	0.058	7.882	<.001
Decision Making Skills	←	Personality Measures	0.078	0.120		0.057	1.357	0.175
Investors' Biases			0.885	0.658	0.433	0.105	8.414	<.001
Openness to Experience	←	Personality Measures	0.914	0.737	0.384	0.105	8.695	<.001
Agreeableness			1.124	0.747	0.598	0.128	8.789	<.001
Conscientiousness			1	0.743	0.558			
Mental Accounting			0.883	0.773	0.315	0.068	12.913	<.001
Illusion of Control			0.761	0.760	0.319	0.06	12.636	<.001
Availability Bias	←	Investors' Biases	1.055	0.709	0.613	0.088	11.988	<.001
Conservatism Bias			1	0.783	0.543			
Cognitive Dissonance			0.814	0.599	0.551	0.082	9.879	<.001
Achievement	←	Decision Making Skills	1	0.565	0.359			
Deliberative			1.138	0.561	0.503	0.139	8.211	<.001
Emotional Involvement			1.18	0.620	0.577	0.143	8.272	<.001

Note. V1 - Dependent variable, V2 - Independent variable; C.R - Critical Ratio; UE - Unstandardized estimate, SE - Standardized Estimate; P - Probability

Table 5. Hypothesis Testing of Factors in the Model

Factors			Hypothesis	R^2	*P*	Inference
Investors' Biases	←	Personality Measures	There is no significant impact of personality measures on investors' biases.	0.433	< .001	Rejected
Decision Making Skills	←	Personality Measures	There is no significant impact of personality measures on investors' biases.	1.066*	0.175	Not Rejected
Decision Making Skills	←	Investors' Biases	There is no significant impact of investors' biases on decision making skills.		< .001	Rejected
Decision Making Skills	←	Personality Measures	There is no indirect effect of personality measures on decision making skills.	0.625	< .001	Rejected

Note. * It is estimated that the predictors of DMS explain 106.6% of its variance. In other words, the error variance of DMS is approximately -6.6% of the variance of DMS itself.

well (Bakar & Chui, 2016 ; Ghelichi, Nakhjavan, & Gharehdaghi, 2016). The Table 5 depicts that there is a strong positive relation between personality measures and investors' biases, which in turn have a strong influence in affecting the decision making skills of women investors.

Conclusion and Scope for Further Research

This study has made an attempt to focus on how the personality measures and biases of investors influence the decision making skills of women investors towards MFs. The study reveals that there is an indirect effect of personality measures through investors' biases on decision making skills of women investors. Personality measures and investors' biases variables have a positive relationship with decision making skills of women

investors. Further research should focus on other factors and also on how the performance of mutual funds is affected by portfolio management of specific funds and pattern of investment in the capital markets by individual investors. A comparative study on behaviour of investors investing in MFs and stock markets can be carried out in different geographical areas under different financial environments.

Research Implications

The regulatory bodies as well as MF companies should take effective measures to provide proper awareness and educate the women investors so that the investors' biases can be reduced and investors can take appropriate decisions in making investments under different situations, which will bring them fruitful returns on their investments. If the investors get good returns, they may be tempted to invest more in mutual funds, thereby increasing the volume of the mutual fund business. This rise in the MF market may have an indirect effect on the Indian economy and also pave way for economic upliftment in the country.

Limitations of the Study

It was difficult to define the population for this study because today's investor may not be tomorrow's investor. The population of MF investors is variable in nature. This research focused only on Chennai city in Tamil Nadu and hence, the findings are subjected to geographical variations in other parts of the world. The responses were obtained from women investors, which might be subject to personal biases and there was a chance that they might revert their responses at a later stage. The study was conducted during the period from 2017 - 18 under the current financial environment in the country. Any change in the financial environment in future may affect the results of the study.

References

Bakar, S., & Chui Yi, A. N. (2016, October). The impact of psychological factors on investors' decision making in Malaysian Stock Market: A Case of Klang Valley and Pahang. *Procedia Economics and Finance, 35*, 319 - 328. DOI:10.1016/S2212-5671(16)00040-X

Bryman, A., & Bell, E. (2007). *Business research methods* (2nd ed.) New York: Oxford University Press.

Desigan, C. G., Kalaiselvi, S., & Anusuya, L. (2006). Women investors' perception towards investment - An empirical study. *Indian Journal of Marketing, 36*(4), 14 - 18. Retrieved from http://indianjournalofmarketing.com/index.php/ijom/article/view/34314

Digman, J. M. (1990). Personality structure: Emergence of the five-factor model. *Annual Review of Psychology, 41*(1), 417 - 440. DOI:10.1146/annurev.ps.41.020190.002221

George, D., & Chandran, J. (2016). A study on women's preference towards mutual fund investments with special reference to Cochin. *IOSR Journal of Humanities and Social Science, 21* (7), 23 - 28. DOI: 10.9790/0837-2107072328

Ghelichi, M.A., Nakhjavan, B., & Gharehdaghi, M. (2016). Impact of psychological factors on investment decision making in stock exchange market. *Asian Journal of Management Sciences & Education, 5* (3), 36 - 44. Retrieved from http://www.ajmse.leena-luna.co.jp/AJMSEPDFs/Vol.5(3)/AJMSE2016(5.3-04).pdf

Gino, F., Sharek, Z., & Moore, D. A. (2011). Keeping the illusion of control under control: Ceilings, floors, and imperfect calibration. *Organizational Behavior and Human Decision Processes, 114* (2), 104 - 114. doi : http://dx.doi.org/10.1016/j.obhdp.2010.10.002

Goldberg, L. R. (1993). The structure of phenotypic personality traits. *American Psychologist, 48*(1), 26 - 34. DOI : 10.1037/0003-066X.48.1.26

Gunay, S. G., & Demirel, E. (2011). Interaction between demographic and financial behavior factors in terms of investment decision making. *International Research Journal of Finance & Economics, 66,* 147-156. Retrieved from http://www.eurojournals.com/IRJFE_66_14.pdf

Gupta, S. (2011). Indian mutual fund industry: Current state and future outlook. *Indian Journal of Finance, 5* (4), 38 - 48. Retrieved from http://www.indianjournaloffinance.co.in/index.php/IJF/article/view/72518

Hair Jr., J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis* (5th ed.). Upper Saddle River, New Jersey, US : Prentice Hall.

Hoffmann A. O. I., & Post T. (2014). Self-attribution bias in consumer financial decision-making: How investment returns affect individuals' belief in skill. *Journal of Behavioral and Experimental Economics, 52,* 23 - 28. DOI:10.1016/j.socec.2014.05.005

Kahneman, D. (2011). *Thinking, fast and slow.* New York, NY : Farrar, Straus and Giroux.

Kumar, R., & Arora, R. (2013). Investors' perception about mutual funds in India: An empirical study. *Indian Journal of Finance, 7*(1), 44 - 52. Retrieved from http://www.indianjournaloffinance.co.in/index.php/IJF/article/view/72151

Lim, L.C. (2012). *The relationship between psychological biases and the decision making of investor in Malaysian Share Market* (Unpublished Paper). International Conference on Management, Economics & Finance (ICMEF 2012) Proceeding. Retrieved from https://scholar.google.com/citations?user=fXnymEQAAAAJ&hl=en&oi=sra

Lingesiya, K., & Kengatharan, N. (2014). The influence of behavioral factors in making investment decisions and performance: Study on investors of Colombo Stock Exchange, Sri Lanka. *Asian Journal of Finance & Accounting, 6* (1), 1 - 23. DOI: https://doi.org/10.5296/ajfa.v6i1.4893

Luong, L.P., & Thi Thu Ha, D. (2011). *Behavioral factors influencing individual investors' decision - making and performance a survey at the Ho Chi Minh Stock Exchange* (Master's Thesis). UMEA School of Business, UMEA University, SE-901-87, UMEA, Sweden. Retrieved from https://www.diva-portal.org/smash/get/diva2:423263/FULLTEXT02.pdf

Masomi, S. R., & Ghayekhloo, S. (2011). *Consequences of human behaviors in economic : The effects of behavioral factors in investment decision making at Tehran Stock Exchange.* 2010 International Conference on Business and Economics Research, Vol. 1, 234 - 237. Retrieved from http://www.ipedr.com/vol1/50-B10068.pdf

Mayfield, C., Perdue, G., & Wooten, K. (2008). Investment management and personality type. *Financial Services Review, 17*(3), 219-236. Retrieved from https://pdfs.semanticscholar.org/2c18/68a18175c115fa44b9a33811eb0b337c4e39.pdf

Mittal, M., & Vyas, R. K. (2009). Does irrationality in investment decision vary with income ? *The ICFAI University Journal of Behavioral Finance, 6* (1), 26 - 42.

Mohan, L. (2017, June 20). Mutual funds are great for women, and they aren't as complicated as you think. *Rupee Rani, a weekly column on finance for women*. Retrieved from https://www.thenewsminute.com/article/mutual-funds-are-great-women-and-they-arent-complicated-you-think-63918

Nicholson, N., Willman, P., Fenton - O'Creevy, M., & Soane, E. (2001). *Decision making styles in financial behaviour: Towards a method for measurement and application, 2000-2001* [data collection]. UK Data Service. SN: 4444, DOI:10.5255/UKDA-SN-4444-1

Pompian, M. (2015). Conservatism bias (2nd ed.). In, *Behavioral finance and wealth management: How to build investment strategies that account for investor biases* (pp. 63-71). US : Wiley Online Library, John Wiley & Sons Inc. DOI:10.1002/9781119202400.ch5

Qadri, S. U., & Shabbir, M. (2014). An empirical study of overconfidence and illusion of control biases, impact on investor's decision making: An evidence from ISE. *European Journal of Business and Management, 6*(14), 38 - 44. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.734.9410&rep=rep1&type=pdf

Qureshi, S. A., Rehman, K., & Hunjra, A. I. (2012). Factors affecting investment decision making of equity fund managers. *Wulfenia Journal, 19* (10), 280 - 291.

Rick, S. (2011). Losses, gains, and brains: Neuroeconomics can help to answer open questions about loss aversion. *Journal of Consumer Psychology, 21*(4), 453 - 463. DOI:10.1016/j.jcps.2010.04.004

Shefrin, H. (2003). Frame dependence : The second theme. In, *Beyond greed and fear: Understanding behavioral finance and the psychology of investing* (pp. 1- 408). United Kingdom, Great Clarendon : Oxford University Press, Oxford Scholarship. DOI: 10.1093/0195161211.001.0001

Sindhu, Rama Krishna, Y., & Reddy, A. S. (2017). Understanding the relationship between investors' personal attributes and investment perceptions towards mutual fund investments. *Indian Journal of Finance, 11*(2), 23 - 34. DOI:10.17010/ijf/2017/v11i2/110231

Singh, B. K. (2012). A study on investors' attitude towards mutual funds as an investment option. *International Journal of Research in Management, 2* (2), 61 - 70.

Sreedevi, V. R., & Chitra, K. (2012). Does personality traits influence the choice of investment ? *The IUP Journal of Behavioral Finance, 8* (2), 47 - 57.

Steele, K., & Stefánsson, H. O. (2015). Decision theory. In E. N. Zalta (ed.), *The Stanford encyclopedia of philosophy* (Winter 2016 Edition). Retrieved from https://plato.stanford.edu/archives/win2016/entries/decision-theory/

Thaler, R. H. (2008). Mental accounting and consumer choice. *Marketing Science, 27* (1), 15-25. DOI : http://dx.doi.org/10.1287/mksc.1070.0330

Tupes, E.C., & Christal, R.E. (1961). *Recurrent personality factors based on trait ratings* (USAF Technical Report ASD-TR-61-97). Lackland Air Force Base, TX: Personnel Laboratory, Air Force Systems Command. Retrieved from https://apps.dtic.mil/dtic/tr/fulltext/u2/267778.pdf

Verma, M. (2008). Wealth management and behavioral finance: The effect of demographic and personality on investment choice among Indian investors. *The ICFAI Journal of Behavioural Finance, 5* (4), 31 - 57.

Vijayalakshmi, B. (2017). A study on risk & return analysis of selected industries in India. *Indian Journal of Finance, 11*(11), 44 - 55. DOI: 10.17010/ijf/2017/v11i11/119341

Vyas, R., & Moonat, S. (2012). Perception and behaviour of mutual funds investors in Indore, Madhya Pradesh. *Indian Journal of Finance, 6*(8), 36 - 42. Retrieved from http://www.indianjournaloffinance.co.in/index.php/IJF/article/view/72401

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