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BB&K Five-way Model and Investment Behavior of Individual Investors: Evidence from India

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ABSTRACT

The purpose of this study is to understand the relationship between model developed by Thomas Bailard, David Biehl and Ronald Kaiser (BB&K) five-way model and investment choices of individual investors. Findings of the study show that all five dimensions of the BB&K model are significantly related to preferences of investments made by various investors. Investment choices as per the BB&K five ways model is derived using Delphi technique. All the five BB&K personalities namely Adventurer, Celebrity, Individualist, Guardian and straight Arrow has shown their respective behavior as per BB&K model in investment decisions.

Keywords: Behavioral Finance, Adventurer, Celebrity, *Individualist,* Guardian, Straight Arrow

INTRODUCTION

Many of the financial theories are based on the notion that individuals act rationally and consider all available information in the decision making process. However, researchers have uncovered a surprisingly large number of evidence that this is not true most of the times. Previous studies of behavioral biases in the investment decisions of retail investors focus on the selection of investments. Personality of individuals plays an important role in investor's investment choices. The Indian capital market, which is regulated by Securities and Exchange Board of India (SEBI), is one of the fastest growing markets among the emerging markets. Capital markets are looked upon by retail investors as investment vehicle to fulfill their investment needs. According to Daniel Kahneman individuals will not behave in a manner consistent with rational economic theory, largely because of the complexity of real world decision making process and the limited cognitive capacity. In this context the requirement of academic research has become very vital to understand

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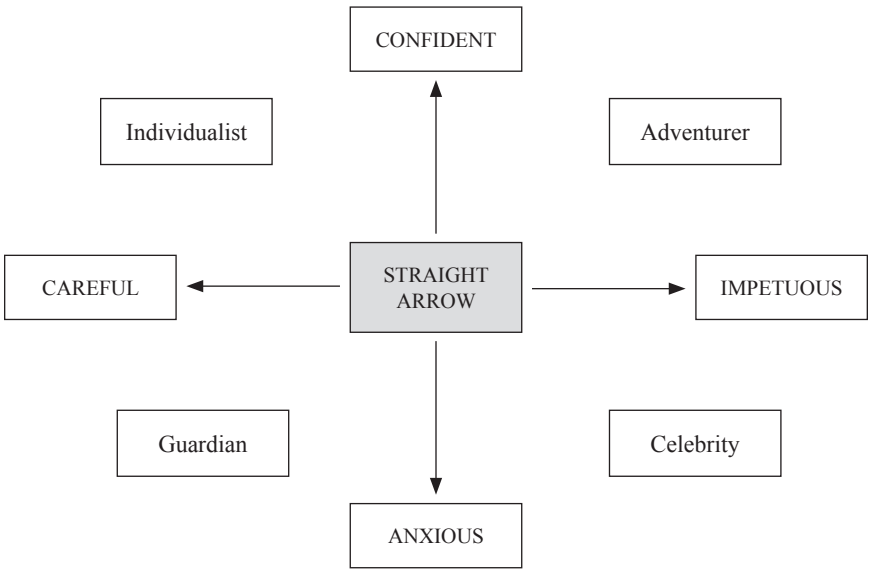
the complexity of investments on the basis of investor's personalities. Researchers across the past several decades have analyzed the behavior of investors and made an attempt to enhance our understanding of why investors manage investments in different ways. BB&K Five Investor Personality types developed by Thomas Bailard, David Biehl and Ronald Kaiser classify investor personalities along two axes-level of confidence and method of action.

LITERATURE REVIEW

Review of Literature shows that how retail investor's personal characteristics influence their various investment choices. If a common theme is present in this literature, it is that personal characteristics influence investors' perception of risk and their willingness to assume risks. In turn the perception of risk determines investment behavior of retail investors. However, a prevailing question left unanswered is the extent to which individual's personal characteristics influence their intentions about investing. The expected utility approach of Von Neumann and Morgenstern (1947) has provided the foundation for the primary view of risk in economics and finance for many years. The main concept in their model is that the maximization of expected utility is the sole factor in making decisions. Markowitz (1952) proposes a two-criterion approach when an investor is faced with the desire for higher returns but not wanting the uncertainty of returns, which investor perceives as risk. The literature has developed into two schools of thought as researchers have sought to explain the choices investors make about risk within their investments. One group of scholars has used demographic features that relate the significance of gender, ethnicity, wealth, income, age and variety of other factors to the explanation of investment management decisions. The other group has its foundations in psychology, using investors' psychological characteristics to explain choices that are made concerning investment decisions.

Although an interesting array of demographic characteristics have been used to explain what drives the investment behavior of individuals, the discussion continues in the literature concerning the psychological antecedents that would accompany this human behavior. A variety of studies have attempted to explore the psychological explanations for investor behavior. In the demographic studies, the implications of gender are mostly perceived by various researchers are key in explaining the behavior of investors. Barber and Odean (2001), Hallahan, Faff and McKenzie (2004), Bajtelsmit and Bernasek (1996), Worthington (2006), Felton, Gibson and Sanbonmatsu (2003), Bajtelsmit, Bernasek and Jinakoplos (1999), Hariharan, Chapman and Domian (2000) and Oslen and Cox (2001) have concluded that gender plays a key role in risk aversion. Filbeck, Hatfield and Horvath (2005) used the Myers-Briggs Type Indicator to assess risk tolerance differences between people with different personality characteristics. From the discrete personality groupings in the Myers-Briggs, the researchers are able to establish behavioral linkages to

risk tolerance of individual investors. Their findings confirm that personality type does explain some aspects of investment behavior. Read and Loewenstein (1995) studied diversification bias in the context of consumer choices. French and Poterba (1991) estimate the domestic ownership share of the world's five largest stock markets in 1990: US 92.2%, Japan 95.7% and Germany 79%. Goetzmann and Kumar (2001) examine the diversification of investors with respect to demographic variables of age, income and employment. Kahneman D and Riepe M.W (1998) focus on biases in beliefs & preferences of which financial intermediaries should be aware and provide recommendations on how to avoid them or mitigate their harmful effects of biases. Keller C and Siegrist M (2006) analysed the influence of financial risk attitude and values-related money and stock market attitudes. Odean T (1998) identified that a particular class of investors sell winners more readily than losers. This is in spite of alternative rational motivations are controlled for these investors continue to prefer selling winners and holding losers. Shiller R.J. emphasized the very importance of conversation in the contagion of popular ideas about financial markets. Shefrin (2000) in the 'Beyond Greed and Fear' explained the Psychology of individual investors. Lo *et al*. (2005) explained that the lack of correlation between trading performance and personality traits. Goldberg and Von Nitzch (2001) explained a personal experience of a day trader who goes through many emotional stages during various stages like profits and losses cycles.



Source: Thomas Bailard, David Biehl and Ronald Kaiser, Personal Money Management, 5th ed. (Chicago: Science Research Associates, 1986)

Figure 1

Thomas Bailard, David Biehl and Ronald Kaiser developed a model called BB&K Five-Way model features the classifying investor personalities along two axes- level of confidence and method of action-it introduces an additional dimension of analysis. Thomas Bailard, David Biehl and Ronald Kaiser provided graphic reorientations of their model and this model classified investor personalities along two axes: level of confidence in vertical axis and method of action in horizontal axis. The first sub classification that the model incorporates deals with how confidently an investor approaches life in general-including issues unrelated to money. When negotiating a wide variety of life choices, are individuals rigidly self-assured, or do they suffer from misgivings and anxiety? The second element of the BB&K model asks whether investors are methodical, careful and analytical in their approach to life or whether they are emotional, intuitive and impetuous. These two elements can be thought of as two axes of individual psychology: one axis is called "confident-anxious", and other is called "careful-impetuous".

Following are the descriptions of the BB&K investor personalities:

The Adventurer: People who are willing to put it all on one bet and go for it because they have confidence. They are difficult to advice, because they have their own ideas about investing. They are willing to take risks, and they are volatile clients from an investment counsel point of view.

The Celebrity: These people like to be where the action is. They are afraid of being left out. They really do not have their own ideas about investments. They may have their own ideas about other things in life, but not investing. As a result they are the best prey for maximum broker turnover.

The *Individualist*: These people tend to go their own tend to go their own way and are typified by the small business person or independent professionals such as lawyer, engineer or CAs. These are people who are trying to make their own decisions in life, carefully going about things, having a certain degree of confidence about them, but also being careful, methodical and analytical. These are clients whom everyone is looking for-rational investors with whom the portfolio manager can talk sense.

The Guardian: Typically as people get older and begin considering retirement, they approach this personality profile. They are careful and a little bit worried about their money. They recognize that they face a limited earning time span and have to preserve their assets. They are definitely not interested in volatility or excitement. Guardians lack confidence in their ability to forecast the future or to understand where to put money, so they look for guidance.

The Straight Arrow: These people are so well balanced; they cannot be placed in any specific quadrant, so they fall near the center. On average this group of clients is the average investor, relatively balanced composite of each of the other four investor types, and by implication a group willing to be exposed to medium amount of risk.

In the view of literature review, the present study undertakes two tasks. First undertake the examination of behavioral intentions as related to personal investment and portfolio management. If behavioral intentions are good predictors of actual behavior and these intentions can be changed by the formation of attitudes, subjective norms, and perceptions of self-control, then they should be amenable to interventions from financial counselors. Thus, identifying the nature of a behavioral intention with respect to personal finance is important. Second, given the paucity of literature examining risk perceptions and personality factors as predictors of intentions, set out to examine prominent predictors of intentions, specifically with personal finance in mind. Behavioral intentions have been the topic of a large quantity of social and behavioral science research over the past 35 years. Behavioral intentions are hypothesized to be influenced by attitudes toward a given behavior, subjective norms, and a perceived sense of behavioral control. This theory contends that behavioral intentions are highly predictive of behavior.

The investor behavior is dynamic and it changes according to various extraneous factors. Literature review also tells that normally investors are irrational and most of the time their investment behavior is subject to various behavioral biases. To understand the pattern of investment behavior no study was conducted in India to test the relationship between BB&K model and investment behaviors. So a gap in the review of literature was found, to fulfill this gap this study was conducted to understand the relationship between BB&K model and investment pattern in India.

METHODOLOGY

This study is made of two sections; the first one is constructing hypothesized investment choices using the Delphi method through which hypothesized investment choices among various investors are identified. In the second section, primary data was collected through questionnaire in Chennai city, India to understand the relationship between type of investments choice and BB&K five way personality types.

Delphi Method

The expert panel was identified from various organizations including financial intermediaries. In this process BB&K five–way model and various investment avenues have been subjected to Delphi method and following investment pattern

is evolved with related to BB&K Five Investor Personality types. The Delphi Technique was considered to be useful to structure the in-depth interviews with experts on the investor personality types and investment choices. This method is typically used to achieve expert-judgment on questions about the future, and especially when a great deal of uncertainty and complexity surrounds the research problem. The Delphi technique is therefore very fitting to find answers to the research questions of this paper. The method operates on the principle that experts on a subject, together, will make conjectures based upon rational judgment. The aim is to gather viewpoints from several experts, and to either achieve a consensus or a list of reasons or arguments for why the experts hold different views. Each expert is interviewed individually to maintain anonymity and to avoid the bias of dominant individuals. In this sense the technique helps structure the group communication.

There are many advantages of the technique as well, when the groups of contributing experts has no underlying organizational ties and represent a diverse population with respect to background, experience, expertise, and location, the result of the interviews is to a large degree unbiased. The structure of the interviews assures that all responses are anonymous to other group members. The anonymity is advantageous for all respondents because it may offset a dominating personality, the fear of losing face by bringing up original ideas and difficulties in publicly contradicting individuals of higher rank. Each expert was asked to analyze the investment choices considered by investors on the basis of their personality types. A panel of 16 experts was chosen for the study consisting of managers of leading broking houses, mutual funds, and financial intermediaries. All experts are having 8 to 14 years of experience in their respective fields of work .Accordingly the experts have identified various investment choices based on the investor personalities. Psychographs models are designed to classify investors to certain characteristics or behaviors. Psychographics classifications are more relevant with regard to investor strategy on various investment choices and risk taking ability. An investor's past experiences, demographic background can play a vital role on investments decision making. Investment choices are identifies as per the personality types of investors.

Table 1 BB&K Five way personality types and investment choices

BB&K five-way personality types	Investment choices
The Adventurer	Type 1: Direct equity, Equity oriented mutual funds, pension schemes, Hedge Funds, PE Funds, VC funds
The Celebrity	Type 2: Direct equity, Equity and debt oriented mutual funds
The Individualist	Type 3: Derivatives, Direct Equity, Real estate
The Guardian	Type 4: Fixed income securities, Pension schemes, Bullion
The Straight arrow	Type 5: All types of investments such as Equity related products, Fixed income securities, Pension schemes and Bullion

Following table depicts the various investment choices based on BB&K Five-way personality types.

On the basis of the results of Delphi method, the following hypotheses are proposed:

Hypotheses 1: There is significant relationship between an investor who is categorized as the Adventurer and invests in financial products grouped in Type 1

Hypotheses 2: There is significant relationship between an investor who is categorized as the Celebrity and invests in financial products grouped in Type 2

Hypotheses 3: There is significant relationship between an investor who is categorized as the Individualist and invests in financial products grouped in Type 3

Hypotheses 4: There is significant relationship between an investor who is categorized as the Guardian and invests in financial products grouped in Type 4

Hypotheses5: There is significant relationship between an investors who is categorized as the Straight arrow and invest in financial products grouped in Type 5

Primary data and sampling techniques

The second phase of this study was conducted in the city of Chennai, India. Total numbers of respondents in this study were 195 respondents, who were investors selected form various broking houses and financial intermediaries. Systematic sampling method was followed in this study. 73% of respondents were aged between 25 and 55 years and having minimum of five years experience in investments in equity, mutual funds, derivatives, fixed income securities, bullion and real estate, PE funds and VC funds. The respondents were made to disclose information about their demographic aspects and investment pattern. Self-administered questionnaires were used to collect the primary data. Two hundred and twenty five questionnaires were administered and one Hundred and ninety five were completed in all aspects. Respondents were asked to rate themselves on five point Likert scale related to each of BB&K Five-Way personality types. Profile of the respondents are shown in the Table 2

STATISTICAL TOOLS

Regression analysis was conducted to analyse the strength of the relationship between BB&K five personality types and investment choices The BB&K personality types were taken as the independent variables, and each investment choice was taken as dependent variables. To test the first hypothesis, the dimensions of BB&K five-way personality model were used as independent variables, and each investment choice was used as dependent variables in separate equations to test the hypothesis. A regression analysis was conducted to test the relationships between investment choices and BB&K investor personality.

Table 2 Profile of the investors (Sample)

Demographic factor	Valid no.	Percentage (%)
Gender		
Male:	115	59
Female:	80	41
Age		
18 to 24:	34	17
25 to 40:	93	48
41 to 55	49	25
Above 55	19	10
Educational Qualification		
Higher secondary school:	22	11
Graduate:	79	41
Post graduate:	43	22
Professional qualification:	51	26
Occupation		
Students:	12	06
Self employed:	46	24
Private sector:	93	48
Public sector:	44	22
Income per annum		
(In Indian Rupees) Upto200000:	19	10
200001 to 500000:	78	40
500001 to 1000000:	69	35
Above 1000000:	29	15
Savings per annum		
(In Indian Rupees*)		
Up to 100000:	54	28
100001 to 300000:	72	37
300001 to 500000:	52	26
Above 500000:	17	09

Note:* One Malaysian Ringgit is equivalent to Indian Rupees 16.5721 as on 11.02.2012

RESULTS

Reliability analysis was performed on each of the personality dimension giving Cronbach's alpha score of above 0.5. It was expected that respondents who were dominant on a particular dimension of BB&K five-way investor personality type prefer a certain types of investments. Exploratory factor analysis was conducted on the scales had been constructed to resolve independent dimensions. Then these dimensions were subjected to a Confirmatory factor analysis. In which only items with factor loadings above 0.5 were selected for analysis. In this process all five investment choices were retained, since all were factor loading of above 0.5. The chi square difference test was conducted to assess whether Change in chi-square (Change in d.f.) was significant for constrained and unconstrained models. Unconstrained model had a chi-square value of 119 and degree of freedom of 32. The covariance was constrained to 1 and the model had a chi-square value of 134.2 and degree of freedom of 33. The differences are statistically significant, exceeding the threshold value (Change in chi-square value is 15.2 and d.f =1($p<0.001$). This far exceeds the threshold value, thus discriminant validity of the investment choice construct is supporting in this context. Regression analysis were conducted to analyse the strength of the relationship between BB&K five personality types and investment choices. The BB&K personality types were taken as the independent variables, and each investment choice was taken as dependent variables. To test the first hypothesis, the dimensions of BB&K five-way personality model were used as independent variables, and each investment choices were used as dependent variables in separate equations to test hypothesis. A regression analysis was conducted to test the relationships between investment choices and BB&K investor personality. To test the first hypothesis, the dimensions of BB&K were used as the independent variables and investment choices of Type 1 were used as dependent variable. Like wise all the remaining types of investments namely type 2 to type 5 were tested. The results are shown in Table 3.

DISCUSSION

From the results it can be known that BB&K personality dimension Adventurer ($p<0.05$) and straight arrow ($p<0.01$) drive preferences for a Type I investment choice, whereas celebrity ($p<0.05$) drive preferences for Type II investment choice. Individualist ($p<0.005$) and straight arrow ($p<0.01$) drive preference for Type III investment choice. Guardian ($p<0.01$) shown preferences for Type IV investment choice and Straight arrow ($p<0.001$) drive preferences for Type V type of investments. It is better to analyze the behavior of investors, before suggesting the investment by the investment intermediaries. Knowing the category of personality will also help the investors to choose the right kind of investments. Many researchers have argued that most of the investments decisions are biased, but there is lack of empirical evidence in India to support this proposition. This

Table 3 Regression analysis on BB&K personality types and Investment choice types

Dependent variables	Independent variables	Beta	F	R^2 (adj)	Sig T
Type 1: Equity related products, Equity	BB&K(Constant)	2.787	20.434	0.64	0.000
oriented mutual funds,	Adventurer	0.086	6.574		0.018*
pension schemes, Hedge	Celebrity	-0.987	2.987		0.302
Funds, PE Funds & VC	Individualist	0.067	1.786		0.190
Funds	Guardian	-0.876	0.657		0.302
	Straight arrow	0.167	8.381		0.002**
Type 2:	BB&K(Constant)	3.730	23.373	0.68	0.000
Equity related products,					
Equity oriented mutual	Adventurer	-0.876	4.594		0.063
funds	Celebrity	0.452	3.681		0.004**
	Individualist	0.614	3.586		0.138
	Guardian	-0.873	0.367		0.178
	Straight arrow	0.793	2.361		0.087
Type3:	BB&K(Constant)	5.287	28.956	0.53	0.000
Derivatives, Direct					
Equity, Real estate	Adventurer	-0.987	6.589		0.059
	Celebrity	0.879	1.873		0.089
	Individualist	0.768	0.568		0.017*
	Guardian	0.564	0.489		0.067
	Straight arrow	0.873	0.063		0.003**
Type 4:	BB&K(Constant	3.786	28.948	0.69	0.000
Fixed income securities,					
Pension schemes,	Adventurer	0.0765	2.763		0.079
Bullion	Celebrity	0.5421	1.633		0.087
	Individualist	0.634	0.678		0.098
	Guardian	-0.823	0.430		0.002**
	Straight arrow	0,762	0.031		0.074
Type 5:	BB&K(Constant)	4.582	27.928	0.73	0.000
Equity related products,					
Fixed income securities,	Adventurer	0.491	0.699		0.074
Pension schemes	Celebrity	0.642	2.823		0.057
	Individualist	0.792	0.598		0.091
	Guardian	0.912	0.189		0.069
	Straight arrow	0.492	0.015		0.001**

*p<0.05 Relationship is significant at the 0.05 level
**p<0.01 Relationship is significant at the 0.01 level

paper contributes to this research gap by assessing whether a significant relationship exists between investment choices and investor behavior.

CONCLUSIONS

This work has used psychological theories to study the relationship between investor behavior and investment choices. Findings of the present study suggest that the personality of an investor influences the investment patterns and types of investments made. This study establishes the various investment patterns of individual investors. For many years financial services sector has been educating individual investors towards creating wealth and hence providing financial security. Recent studies in behavioral finance including this one suggest that financial sector and its intermediaries should aim for investment pattern according to investor behavior. To understand the investor behavior one has to study the investor personality, before making the investment plans. The findings, thus offer potential avenues for understanding the investors' choices on other types of investments including commodities. Future studies can highlight the effects of various behavioral biases on individual investors.

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