Do the gambling attitude of investors is a tool to predict their investment personality?

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Abstract

Each individual has different set of attitude, thinking, individual difference; decision making style etc. All these attributes contribute one's personality development. Individual's personality is determined by both psychological and psychographic factors. Gambling is a psychological problem often faced by investors while making investment decisions. The primary focus of this paper is to study the influence of investor's gambling attitude and their demographics on determining the investment personality of investors. Multistage random sampling technique is used to collect the data of 742 retail investors who are accessing Indian stock market. The Cronbach's reliability of investor's different gambling and personality factors are greater than 0.60. Results of this study reveal that investor's intuitive gambling attitude has shown meaningful influence on their personality development. Further investors demographics variables have shown significant influence of their investment personality.

Keywords: Behavioral finance, Demographic Factors, Gambling, Investment decisions, Investment strategies, Personality development.

1. Introduction

Gambling is a recreational activity used by the people to satisfy their extreme wants and needs. It spreads in different form. Gambling in capital market is one such form. People who are affected by gambling are emotionally unstable, less cognitive, intuitively approach their investment decisions. Psychologist explains how gambling attitude affects the people. The main reason behind their gambling attitude is "influence of genetic and environmental factors". Wester's dictionary (2010) defined gambling as "It is a game often used for money or other stakes". It may not only affect the individual's wealth but also their loved ones prosperity. Raylu & Oei, (2002) identified the factors which influence gambling attitudes are cognitions, personality, biological aspects, psychological states, and influence of familial factors on development and maintenance of gambling behaviour. Cavion, Wong, & Zangeneh, (2008); Cockrill, Goode, & Emberson, (2008) explain the relationship between gambling and risk taking attitude. They pointed that gambling is a risk taking behaviour bonded with winning money. This brings the conclusion that investors risk taking attitude associate with their gambling behaviour. Behavioural finance called investor's gambling attitude as gambler's fallacy. It is a phenomenon of people inappropriately predicts the futures in terms of risk and return. Werner De Bondt (1991) supports this argument that investors' gambling fallacy is not "particularly useful". He suggests that investors' intuitions and representativeness may influence their gamblers fallacies. Gambling attitude determines one's investment personality. Phares (1991) defines personality as, *'It is a pattern of characteristic thoughts, feelings, and behaviours that distinguishes one person from another and that persists over time and situation'*. Further he added that it is the sum of biological based and learnt behaviour which forms the person's unique responses to environmental stimuli (Ryckman, 1982:4-5). The major contribution of individual's personality (BIG-FIVE MODEL) given by P.T. Costa and R.R. McCrae, (1992). They are categorizing investors' personality as Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness. This study focuses on the influence of individuals gambling attitude on determining their investment personality. Higher statistical analysis tools of SEM and AMOS models are used to analysis and interpret the findings. The scope of this study is useful to control the gambling behaviour of investors and also help them to tackle if it dominates on their investment decisions.

2. Review of literature

Gambling is a learning process comprises of satisfaction and frustrations. It should be given importance to control at the initial stage of its presence, Ferster & Skinner, (1957); Skinner, (1953; 1972); Levitz, (1971);

Knapp, (1976); Dickerson, (1977; 1979. Gamblers behaviour was studied under many psychological and non psychological approaches on health and wealth problems. Psychoanalytical researchers of Lindner, (1951); Greenson, (1947); Freud, (1953), Bergler, (1970); Galdston, (1961); Halliday & Fuller, (1974), called gambling as a psychological problem. Unsolved childhood conflicts may determine their gambling behaviour. Galdston, (1960); Adler, (1966) and Adler Coleman, (1969) defined gambling as a serious issue equal to other addictions. Clinical guidance should be given to tackle this issue. Popper, (1963) finds that psychoanalytical approach lacks the proper explanations and also pointed that findings are not supported by any data. Later Phenomenological approach replaces psychoanalytical approach. Researchers of this approach argued that gambling arises as a result of dissatisfactions of learning. Phenomenological researches like Livingston, (1974); Kusyszyn, (1976; 1977); Knowles, (1976) and Campbell, (1976) simplified the concept of gambling that it is a normal activity used by the people to get rid of their daily frustrations. Besides they added that individuals use gambling as a recreational process to hope for wealth by avoiding over risk. Results of this study reveal that a successful gambling increases one's self-esteem, self-efficacy and self-worthiness and failure increases the tolerance level of individuals. Mosteller & Hogee (1951) replaces the concept of monetary values of gambling by individual's evaluation on their utility. Many researchers studied the relationship between individuals risk and gambling attitude. Edwards, (1955) in his expected value method explains that gambling is a bet made by individuals to maximize their expected gain in all ways. Later he improved his model as ' subjectively expected value' model. In this model he explains that monetary payoffs connected with gambling are individual's subjective values. Pruitt, (1962) modified the expected value model .He explains that "each alternate bet and its expected values are calculated by multiplying the value of each of its outcomes by its probability of occurrence and summing these products to get the final outcomes". Caillois, (1962); Devereux, (1968); Oldman, (1974; 1978) and Herman, (1976) have different approach on gambling's in social perspective. Individual's gamble to satisfy their social needs of social acceptance and monetary benefits. Cornish, (1978) conclude that cognition and individual differences play a vital role on individuals gambling behaviour. This was mostly ignored in previous theories. Many of them explain the concept of gambling through situational approach. Some of them are Anderson & Brown, (1984); Smith & Preston, (1984); Wagenaar, Keren & Pleit- Kuiper, (1984). They suggest that scientific and more eclectic approach is needed to explain this phenomenon. Langer (1975) has different opinion of gambling that one's 'illusion of control' is controlled by their skill-related factors and the situations encountered by them determine their gambling behaviour. Illusion of control is responsible for their success and failure of the investments. Lichtenstein, Fischhoff & Phillips (1982) explain the gambling concept through the theory of subjective probability. They opined that over-confident makes the investors' to exaggerate their probabilities of being correct. Kahneman, Slovic & Tversky (1982) explains "uncertainty makes the individuals to gamble". Teigen (1983) asserted that guessing behaviour is based on grouping; anchoring and contextual effects determine one's gambling behaviour. Gambling theories have summarized in to two broad categories. They are learning theory and personality theory. Learning theory deals with behavioural components of gambling (Dickerson,(1977,1979); Knapp, (1976); Saunders & Wookey,(1980)) while personality deals with compulsive or pathological or problematic gamblers. Rabaah Tudin & Woon Chan Yei (2012) defines the concept of gambling as certain market activities influence individuals' gambling behavior unlike psychological aspect. Freud, (1996) and Jung, (1986) explain the concept of personality in different perspectives. Individual's physiological traits determine one's personality development. This was explained in dispositional theory of personality. This theory was based on individual's genetics and neurological processes. Phares (1991) define personality traits as tendencies to behave and react in a specific way. Traits can thus be described as dispositions to states (Humphreys & Revelle, 1984).

Sadi, Ghalibaf, Rostami, Gholipour, & Gholipour, (2011) define personality as; it is a key factor which determine the behaviour of investors. Marilyn MacGruder, Barnewall categorized investors in to two types: active and passive investors. Active investors are creating the wealth while passive investors are safe guarding their ancestors' wealth. Bailard, Biehl and Kaiser (BB&K) developed Five-Way Model to replace the Barnewall concept of personality. They classified investors in two dimensions: Level of confidence and Method of action. Level of confidence refers to investors' confident state and Method of action refers to their approach towards a decision making. Based on these two dimensions, Bailard, Biehli, & Kaiser, (1986) classified investors as Adventure, Celebrity, Individualistic, Guardian and Straight Arrow. Psychographic model of Myers-Briggs Type Indicator (MBTI) test the investors personality by using certain personality questionnaires. Filbeck, Hatfield and Horvath (2005) use the Myers-Briggs Type Indicator to assess risk tolerance of different personality characteristics. Their findings confirm that personality type does explain some aspects of investment behaviour. Although some studies use specific measures of personality in explaining investor behaviour. Costa and McCrae,

(1992a, 1995, 1997); Digman, (1997); Goldberg, (1992); McAdams, (1992) framed the big five model of personality. The personality taxonomy of the Big Five is generally considered the most inclusive and accepted, particularly for applied research (Barrick and Mount, 1991; Hogan and Hogan, 1991). The five dimensions (extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience) were derived from years of statistical analysis and considered stable across situations and cross-culturally applicable. Almost all of the personality tests existing today measure one or more of the five factors (McCrae & John, 1992). Neuroticism measures affect and emotional control of investors. Low levels of neuroticism indicate emotional stability whereas high levels of neuroticism represents the possibility of experiencing negative emotions. Persons with high levels of neuroticism are reactive, unstable, worried, unpredictable and sad. Resistant persons on the other hand need strong stimuli to be provoked (Howard & Howard, 1995). The term neuroticism does not necessarily refer to any psychiatric defect. A more proper term could be negative affectivity or nervousness (McCrae & John, 1992). Extraversion measures adventurous, assertive, frank, sociable and talkative. Introverts may be described as quiet, reserved, shy and unsociable (Costa & McCrae, 1992: 49). Openness to experience is a measure of depth, breadth and variability in a person's imagination and urge for experiences. The factor relates to intellect, openness to new ideas and cognitive experiences. People with a high openness to experience have broad interests, are liberal and like novelty. The preservers with low openness to experience are conventional, conservative and prefer familiarity (Howard & Howard, 1995). The agreeableness scale is linked to altruism, nurturance, caring and emotional support versus competitiveness, hostility, indifference, self-centeredness, spitefulness and jealousy (Howard & Howard, 1995). Agreeable people can be described as altruistic, gentle, kind, sympathetic and warm (Costa & McCrae, 1992: 49). Conscientiousness is a measure of goal-directed behaviour and amount of control over impulses. Conscientiousness has been linked to awareness and carefulness. The focused person concentrates on a limited number of goals but strives hard to reach them, while the flexible person is more impulsive and easier to persuade from one task to another (Howard & Howard, 1995). The more conscientious a   to Carrie H. Pan and Meir Statman (2012), opined that investors' high risk taking attitude associate with high levels of Extraversion and Openness but low level of risk taking associate with high levels of Conscientiousness. Moreover high overconfidence associate with high levels of Extraversion whereas low confidence associate with high levels of Agreeableness. In the same manner tendency for regret is low among investors with high levels of Extraversion, but high among investors with high levels of Conscientiousness.

Duckworth and Weir (2011) reveals that Conscientiousness is closely related to academic achievement, job performance, marital stability, and longevity. They found that Conscientiousness is stronger than the association between lifetime earnings and any other Big-Five factor. At the same time conscientious people build up their wealth than less conscientious people, even after controlling the variables like income, years of education, demographics, and measures of cognitive ability. Statman and Wood (2004) found that personality affects preferences. Borghans, Duckworth, Heckman, and Weel (2008) argue that investors' cognitive play a vital role on defining their personality. Carducci and Wong (1998) find that persons with a Type A personality are more willing to take high risk in all financial matters. According to Thoresen and Low (1990) Type A persons tends to associate with higher level of income than Type B individuals. There is also evidence (Wong and Carducci, 1991) that Type A investors are "sensation seekers" too. Based on the decision making, people are classified in to six Types. First, people are classified in accordance with their basic interactions with others. They are Introverted and extroverted. Introverted likely to be shy; highly concentrated, dislike interruptions, and work happily alone. Whereas extroverted are sociable and sometimes aggressive. They like variety, intuitive, and may dominate situations or people. Second, people are classified based on acquiring information. This may be either sensing or intuition. *Sensing (S)* refers to pragmatic, precise, and results-oriented. They focus on facts, data, and details. They are rule governed people. Intuitive *(I)* types People are not rule governed people. They don't spend enough time to make decisions. They are unrealistic or scattered. Third, people use thinking or feeling to make decisions. *Thinking (T)* types use logical and analytical works before making decisions. They are not given importance to their feelings while making decisions. They are analytical, rational, logical, impersonal, and undervalue their feelings, as well as their thoughts. Fourth, *Judging (J)* types are perfectionist. They make decisions by organizing all the relevant information in a structured manner. Fifth, *Perceiving (P)* types tend to be open-minded, curious, and flexible. They may make decisions by taking vast amount of information but have difficulty to finishing it. Finally feeling refers to emotions. This category people are highly influenced by their feelings rather than thinking. Some studies have examined the relationship between personality and behavioural intentions (de Bruijn, Kremers, de Vries, van Mechelen and Brug, 2007; Lauriola, Gioggi and Saggino, 2001;

Prislin and Kourlija, 1992). But the results of these studies have been questionable. From the above review it is clear that investors gambling behaviour influence their personality traits.

3. Research methodology

The present study uses descriptive method to analyze and interpret the data. This study focuses on cross-section analysis of influence of gambling attitude and demographics on investor's personality development with the help of Structural Equation Modeling (SEM). Investors refer to retail investors who are making investments in Indian stock market. The retail investors who are accessing Indian stock market from Tamilnadu are the population elements. Since the population elements are infinite, convenience sampling technique is used to collect the sample data. A sample size of one thousand questionnaires was targeted to collect the data from various cities located in Tamilnadu. They are Chennai, Coimbatore, Trichy, Erode and Salem. Top five broking firm was identified in each place to collect a target of 200 questionnaires from each location. The questionnaires were distributed through E-mail, manually to investors; with the help of managers of broker's office to investors etc. Totally one thousand questionnaires were distributed, out of which 742 responses were received on error free. This added an effective response rate of 75 percent of the total sample.

4. Demographic data for statistical analysis

The questionnaire contains demographic variables of Age, Gender, Marital Status, Educational Qualification, Occupation, Profession, Number of Financial Dependants, Income and statements which explain gambling attitude of investors and their personality variables which was taken from the literature. Five point likert scale was used to construct the questionnaire which evaluates investors' different responses on gambling and personality attitudes. The statement containing the likert scale varies from strongly disagrees to strongly agree. "Strongly agree" explains the variables which has strong influence on their investment decisions and "strongly disagree" explains the variables which has no influence on their investment decisions. First part of the questionnaire contains demographic variables and second part contains investors gambling and personality attitude questions. Expert's advices were sought before designing the questionnaire. Based on their suggestions some modifications were made in the questionnaire. Frequency analysis of demographic variables is presented in the following table-1.

5. Reliability test for collected data

Cronbach's alpha test is used to find out the reliability of the research data which includes gambling and personality factors. The data is reliable if and only the value of Cronbach's alpha is greater than 0.60. The Cronbach's values of gambling variables are 0.64 and personality variables as 0.67. The Cronbach's values of these two factors are greater than the threshold value of 0.6. Results of Cronbach's value suggest that the given data is accepted and reliable for further analysis. AMOS, STATA and SPSS software's are much suitable to analyze and interpret the research data. The Cronbach's reliability of each factors are shown in the following table-2.

Table 1: Frequency analysis of demographic variables

S. No	Demographic variables	Frequency	percentages	S. No	Demographic variables	Frequency	percentage
1	**Age**				Investment consultant	103	14
	16-25	202	28		Business	124	17
	26-35	292	40		Bank	54	5
	36-50	206	28	6	**Occupation**		
	51-60	38	4		Government	67	9
2	**Gender**				Private	513	69
	Male	711	96		Others	163	22
	Female	31	4	7	**Dependents**		
3	**Education**				1	112	16
	Under graduation	545	74		2	134	18
	Post graduate	197	26		3	108	15
4	**Marital status**				above 3	19	3
	Unmarried	297	40		None	369	48
	Married	445	60	8	**Income**		
5	**Professions**				Below 2 lakhs	147	20
	Lawyer	41	6		2 – 5 lakhs	170	23
	Engineer	175	24		5-10 lakhs	311	42
	Management professional	167	23		Above 10 lakhs	114	15
	Teaching/Academician	78	11				

Table 2: Results of Reliability test

Factors	Variables	Cronbach's value	Standard deviations	Mean
Impulsive (Y1)	Y11,Y12,Y13,Y14	0.823	2.348	6.13
Speculative (Y2)	Y21,Y22,Y23,Y24	0.769	3.762	11.29
Intuitive(Y3)	Y31,Y32	0.777	4.32	14.29
Methodical (X1)	X11,X12	0.697	2.769	10.08
Individualistic (X2)	X21,X22,X23	0.649	1.919	6.92

Kolmogrov- Smirnov test is used to find out the normality of the given personality factors. The normality values of the methodical and individualistic personality are 2.769, 4.080 and their p values are 0.000. This shows that the normal distributions of the two personality factors are accepted at 0.05 level of confidence.

Intuitive gambling contains the factors of G3, G4, G6 and G10. These four factors explain the investor's intuitive attitude towards the investments. Further it is added that these factor explain investors' patience and intuitiveness. Intuitions may be given destructive or constructive results. How investor use this intuition will give them a profit or loss making investments. Matured intuitions give constructive results and immature intuitions give destructive results. Immature intuitions make error and biases on investment decisions. So these variables are named as intuitive gambling's.

Second factor is called as speculative gambling. It contains G1, G5, G7, G9 factors. These factors explain the investor's response on speculative market. Further these factors explain the speculative behaviour of the investors. Investors who are exhibiting the Speculative trading or investment attitude are high risk takers and offensive in nature. Positive aspects of speculative gambling are high risk - constructive return and negative aspects are high risk - destructive return.

Impulsive gambling contains G2 and G8 factors. These factors explain impulsive nature of investment behaviour. High influence of these factors explains negative influence of emotions on investment decisions. Over conscious and less cognition are the attributes of impulsive gamblers. Impulsive means spontaneous and reckless behaviour. However the impulsive behaviour shows little conscious about the investment but the total output is zero.

First factor is named as Methodical Personality. It contains the factors of Extraversion, Agreeableness and Neuroticism. Methodical refers to systematic and disciplined behaviour. Extraversion, agreeableness and neuroticism are defined as the primary factor which explains the investors' positive emotional state. Emotions always play an important role on any successful investment decisions.

Second factor is named as Individualistic personality. Here Individualistic personality is taken as the combination of Conscientiousness and Openness. It is defined as the secondary factor which explains investors' independent and realistic decision making skills. So it is called as Individualistic personality. Conscientiousness and openness show the maturity of investors' investment decisions. These two factors explain the positive emotional attitude of the investors. These variables also explain their investment experience, cognitive, and goal oriented behaviour.

Table 3: Estimated coefficient of investors gambling attitude and their personality factors

Variables	Methodical	Individualistic
Intuitive	**0.4235***	**0.0782***
Speculative	0.0583	**-0.2000***
Impulsive	**0.1060***	**-0.1632***

* indicates correlation at α =0.05 level of significance.

Table 3 informs that intuitive (0.4235, 0.0782) and impulsive (0.1060, -0.1632) gamblers have shown meaningful correlations with both the personality state. Speculative gamblers (-0.2000) have shown good correlations with individualistic personality state only.

6. Hypothesis settings

In order to the test the relationship between investor's different gambling attitudes and their different personality state, the following hypothesis has framed.

Hypothesis: There exists a significant relationship of investor's different gambling attitude with their investment personality.

6.1 Testing the hypothesis

Spearman correlation coefficient is a type of non parametric test used to test the significant relationship between the investors gambling attitude with their personality. Table 3 explains the acceptable correlation of investor's different gambling attitude with their personality. This shows that the given relationship is meaningful at α =

0.05 level of significance. Hence the given hypothesis is accepted. i.e.) there exists a significant relationship of investor's different gambling attitude with their personality at 0.05 percent level of significance.

7. Model Analysis

Preceding review of literature is taken to construct the SEM model by using the AMOS software. Regression model is formulated by taking the dependent variables as investor's personality variables of methodical (X1), individualistic personality (X2) and independent variables are investor's different gambling attitude variables (intuitive, speculative, impulsive) at α=0.05. Findings of this result reveal that the estimated value is greater than 0.05.This indicates that investors gambling attitude has shown significant influence of determining their investment personality. The relationships are shown in the form of equation as follows:

X1= 2.663+ (-.0394) (Y1) + (-.1266) (Y2) + (.3821) (Y3),

X2= 4.002+ (-.1704) (Y1) + (-.2382) (Y2) + (.2014) (Y3)

The influence of investors gambling attitude with their personalities are shown in the following SEM model.

Fig 2: The Structural relationship of investor's different gambling attitude with their personality
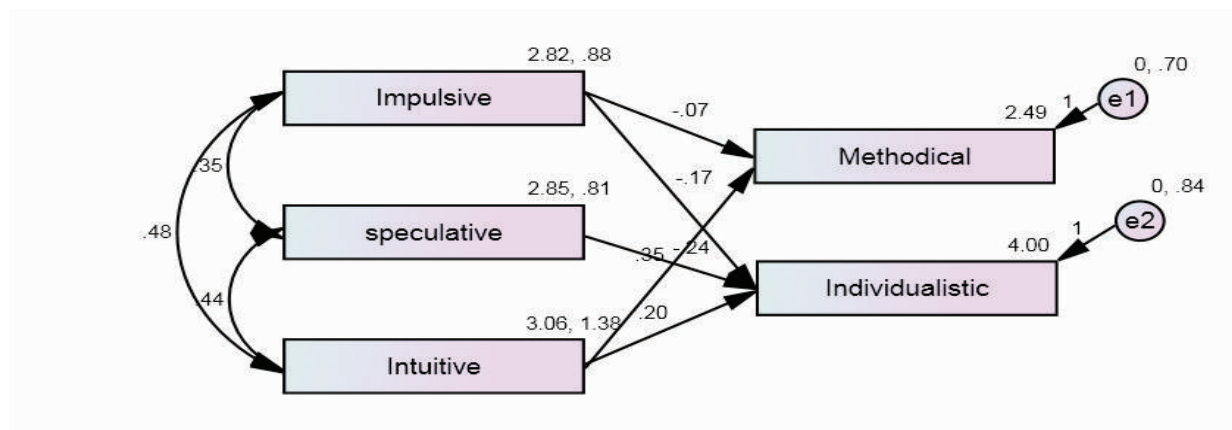
7.1 The fitness test model for structural equations

The SEM model-1 presents the following results: IFI=0.99, CFI=0.99, GFI=0.99, AGFI=0.98, NFI=0.99. All the criterion of fitness model like NFI, IFI, CFI, GFI, and AGFI meet the threshold limit of 0.90 and above. Besides the RMSEA value of this model is around 0.10 which satisfies the limit of equal to or less than 0.1.This brings the conclusion that the given relationship model is perfectly fit.

7.2 Results of path analysis of SEM model

Figure 2 illustrates that impulsive gamblers have shown almost neutral relationship with methodical and negative relationship with individualistic personality state. This reveals that if impulsive gambling behaviour dominates then influence of individualistic behaviour reduces and vice versa. The reasons for this indirect relation are inexperience; less cognitive, emotionally unstable and prefer short term trading etc. Impulsiveness stimulates the investors to act quickly by taking non calculative risk. Negative emotional state investors are often influenced by impulsiveness gambling attitude. Get rich quicker is the primary motto behind their impulsiveness. They are called as immature intuitive decision makers.

Speculative gamblers have negative relationship with investor's individualistic personality state. This shows that speculative gamblers are not using deliberativeness on their investment decisions. Investors of this category are emotionally less stable, moderate cognitive and medium term traders. Further they may adopt non deliberative approach towards their investment decisions. Investors of this state want to optimize their return by using the speculative market conditions. So they may be influenced by neutral intuitive state.

Intuitive gambling attitude has shown positive relationship with both the personality state. This shows that investors of this category are positively using their intuition to optimize their investment return. Intuition arises

as a result of high influence of emotions. It may be positive or negative. Here positive emotions dominate the investors. So it does influence their personality development.

8. Canonical correlations of demographic variables of investors and their personality state

Canonical correlation is a statistics used to find out the relationship of investor's different personality state with their demographic variables. Demographic variables of investor's age, gender, marital status, occupation, professions, financial dependents of investors and their income are taken as independent variables. Further personality variables of methodical and individualistic are taken as dependent variables.

Table 4: First pair of canonical correlations of investor's demographic variables and their different personality state

	Coefficient	P>|t|		Coefficient	P>|t|
U1			V1		
Age	.2174186	0.000	Methodical	0.25513	0.004
Gender	1.690125	0.000	Individualistic	0.92688	0.000
Education	0.5630896	0.000			
Marital status	1.399435	0.000			
Occupation	0.4285438	0.000			
Profession	0.1157581	0.000			
Financial dependents	0.005811	0.838			
Income	0.495304	0.000			

First pair of canonical correlations results explores that except the demographic variables of financial dependents, all other variables have shown significant correlation with investor's different personality state. The total correlations between these two variates are around 67 percent. This shows that first pair of variates shows strong correlation.

Table 5: Second pair of canonical correlations of investor's demographic variables with their personality state

	Coefficient	P>|t|		Coefficient	P>|t|
U2			V2		
Age	-0.246785	0.104	Methodical	1.13613	0.004
Gender	1.962511	0.000	Individualistic	-0.6288	0.000
Education	0.3006891	0.257			
Marital status	1.425352	0.001			
Occupation	0.734220	0.000			
Profession	-0.108139	0.147			
Financial dependents	-0.141059	0.037			
Income	-0.311438	0.060			

Second pair of canonical correlations results shows that investor's gender, marital status, and occupation have explored significant correlations with investor's methodical and individualistic personality state. Other variables have shown no significant relationship with different personality state. The comprehensive correlations between these two variables are 34 percent which is lesser than threshold limit of 0.5 and above.

Table 6: Tests of significance of all canonical correlations

	Statistic	df1	df2	F	Prob>F
Wilks' lambda	0.489577	18	1462	34.8596	0.0000 e
Pillai's trace	0.56484	18	1464	32.0103	0.0000 a
Lawley-Hotelling trace	0.93144	18	1460	37.7749	0.0000 a
Roy's largest root	0.79091	9	732	64.3272	0.0000 u

Table-6 suggests that all the four multivariate criterions are less than 0.05 which is statistically significant. This brings the conclusions that demographic variables of investor's have shown good correlations with investor's different personality state.

9. Conclusion

Investor's investment personality plays a vital role on success of their investments. This study focuses to find out the relationship of how demographic variables of investors and their gambling attitudes will determine their personality. Results of this study suggest that demographic variables have shown a positive relationship with their personality developments. Further investors intuitive gambling attitude play a significant role on determining their investment personality. Remaining gambling attitude factors have shown no /less meaningful impact on their personality development. This concludes that investor's intuition determine their investment personality.

10. Scope of future study

This study will be useful to find out the influence of investor's emotions on determining their investment personality being a hopeful area of future research related to this topic.

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