



Modelling Risk Perception: A Case Study of Indian Investors

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Abstract

The purpose of this paper is to establish a relationship between demographic characteristics and risk perception of Indian investors. This study is quantitative in nature and collects the data by distributing the close-ended structured questionnaire to active Indian investors. The paper distinguishes between investors on the basis of risk perception i.e., risk-averse and risk seekers. We establish that demographic characteristics like gender, marital status, educational qualification, occupation, monthly income and number of dependent family members affect the risk perception of investors. However, it is found that age does not affect risk perception.

Keywords: Risk perception, Indian individual investors, demographic characteristics, logistic regression, risk-averse, risk seeker.

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1. Introduction

In a world with unpredictable outcomes, people's perceptions of risk impact their behaviour, and it's critical for investments (Solvic P., 2016). Investment decisions are decisions taken by an investor before choosing among various investment avenues that are available to them. Risk and return are two of the most important factors that an investor considers while making an investment decision (Glaser, Iliewa, & Weber, 2019). An investor can choose between risky and less risky investment avenues depending on the risk associated with them. Shares, bonds and real estates are generally categorised as risky investment avenues whereas bank deposits and insurances schemes seem to be less risks (Walia & Kiran, 2009). Investment avenues have a varied level of risk associated with them, however, the same risk which is associated with a particular investment avenue is perceived differently by different investors (Solvic P., 2016).

Risk perception is the way an investor perceives risk and how it affects an individual investor has attracted the attention of not just economists but also psychologists (Renn, Burns, Kasperson, Kasperson, & Solvic, 1992) after all, individuals

make risky investment decisions based on their perception and definition (Holzmeister, et al., 2020).

While understanding the investment decision of investors has recently been the subject of much academic research, relatively little is known about risk perception of Indian investors. Individual investors may act differently because of the influence of various demographic factors like age, gender, marital status, educational qualification, occupation, monthly income, and number of dependent family members on their risk perception.

This article seeks to fill the void by presenting experimental evidence that illuminates how demographic characteristics affect the risk perception of Indian Investors. The experimental design allows us to distinguish the effect of each demographic characteristics on risk perception. Our experiment involves demographic characteristics of active individual investors and how it influences their risk perception.

2. Literature Review

2.1 Risk Perception

Risk perception consider the tendency of individuals to engage in risk and thus it is a

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subjective perception (Holzmeister, et al., 2020). As each individual would perceive risk differently, thus we can categorize investors on the basis of their risk perception. Lee, Veld, & Merkoulouva (2015) categories investors on the way they perceive risk i.e., risk-averse and risk seekers. Risk averse are those investors who perceive that there is a high risk attached to a particular investment avenue and hence may avoid investing in those avenues. While making decision under risk, individuals consider loss aversion as one of the significant factors (Holzmeister, et al., 2020). On the other hand, risk seekers are those investors who perceive that high risk is attached to high returns and hence, may invest in those avenues where in spite of high risk they are tempted to attain high returns (Zhang, Brennan, & Lo, 2014). Individual investors make their investment decisions under the influence of perceived risk and expected returns which consequently affects their risk perception (Gumus & Dayioglu, 2015)

Thus, investors decisions to invest in risky or less risky investment avenues is dependent more on investors risk perception as compared to the expected benefits (Weber & Milliman, 1997). Hence, risk perception is one of the important factors that can influence the investment decisions of an investor (Kumar & Sajana, 2017). Other factors that may affect the investment decisions are the demographic characteristics of an investor such as age, gender, marital status, educational qualification, monthly income and number of dependent family members (Anitha & Bhargavi, 2014).

2.2 Factors Affecting Risk Perception

Risk perception is affected by an investors' age, gender, marital status, educational qualification, monthly income and number of dependent family members (Gumus & Dayioglu, 2015; Geetha & Ramesh, 2012).

Age is considered as an important factor that affects the risk perception of the investors. Young investors are risk seekers, as they are new and have a passion to earn more, so they invest in high-risk investment avenues to earn high returns (Dohmen, et al., 2011). A study by Wang & Hanna (1997) concluded, as the age of the investor increases the risk aversion decreases. However, in a study conducted by Bashir, Ahmed, Jahangir, Saeed, & Shafi (2013) finds that young investors are new and do not have much

familiarity with investment scenario and hence, they sometimes avoid investing in high risky investment avenue and initially start as risk avoiders. As the age of the investor increases, an investor becomes risk seeker because they have learned the various possibilities through practise and experience (Obamuyi, 2013;

Rana, Murtaza, Noor, Din, & Rehman, 2011; Lodhi, 2014; Mane & Bhandari, 2014). Therefore, there has never been an agreement on, whether age affects risk perception or not. Age has been studied along with other variables like race, sex, religion and scholars by Eisenhauer (2001) and he finds that age directly affects investors risk aversion.

Gender is an important demographic characteristic that influence the investment decision. Men and Women both contribute to the financial economy (Jawaheer & Manual, 2016). Diacon & Ennew (2001) studied the investment behaviour of different gender with respect to mutual funds as an investment avenue and finds that women are less risk-seeking than men (Fisher, 2010; Bhushan & Medury, 2013; Bashir, Ahmed, Jahangir, Saeed, & Shafi, 2013). Geetha & Ramesh (2012) also finds that females are risk-averse by nature and hence, they do not change their investment pattern very often which shows that they are aversive to risk (Rana, Murtaza, Noor, Din, & Rehman, 2011; Dwyer, Gilkeson, & List, 2002). However, in a study by Rolison, Hanoch, Wood, & Liu (2013) suggest that risk aversion decreases in older women but not in older men. Also, a study by Meier, Kirchler, & Hubert (1999) concludes that the spouses with greater expertise than their partner dominated the decision- making process. Thus, the effect of gender on risk perception of investors is an important demographic variable in this study.

Marital status also influences the risk perception of investors (Obamuyi, 2013). Marriage can not only influence the decision making of an individual as the number of dependent members increases along with the family responsibility of an individual, but, can also increases the value of wealth and hence married individuals are risk seekers (Obamuyi, 2013). However, Barber and Odean (2002) studied investment decision of investors based on risk perception and finds that singles are assumed to have less responsibility as compared to married individuals and so they



tend to take more risk. A study by Meier et al. (1999) explains that after marriage, women are egalitarian partnership influence the investment decision of their partner and the findings of Obamuyi (2013) and Barber and Odean (2002) reveals that women are risk averse, and they demotivate their partner in taking the risk. Hence, it is unclear as singles are more risk averse or married individuals. But, Lee, Veld, & Merkoulouva (2015) argued that when both the partners are earning, they are both prone to take more risk.

Education is categorised into two categories: Formal education and Informal education (Rana, Murtaza, Noor, Din, & Rehman, 2011). The knowledge and the skills that are required by an investor to invest in financial markets, and to understand the investment procedure can be developed by the formal education system like training programmes (Gopalkrishan, Mathur, Rath, & Vats, 2017). Irrespective of the age these investors with knowledge about the financial markets perceives risk logically and act confidently. Those who have education particularly in the field of finance and economics are more risk seekers as they believe that they have better knowledge and hence this boosts their confidence while making an investment decision (Gillham, 2000). Hence, people with higher education, particularly in the field of finance and economics, are often risk seekers.

Researchers have focused on various occupations of respondents like students, investors belonging to salaried class (Bhushan, 2013; 2014), self-employed and retired individuals (Mane & Bhandari, 2014), And it has been found that occupation has an influence on the investment decision making (Geetha & Vimla, 2014). However, a study by Sood and Medury (2012) finds that the employment status of an adult does not affect investors risk aversiveness. All the above studies try to establish a relationship between occupation and investment decisions, but very limited studies focus on the influence of different occupations on the risk perception of investors.

Risk aversion is expected to reduce as the income of the investor rises (Graham, Stendardi, Myers, & Graham, 2002). Mohan & Baskaran (2021) concluded, individuals belonging to middle income group i.e., earning between Rs.30,000- 1,00,000 per month, would invest in

traditional form of investment i.e., investing in banks in form of saving or fixed deposit, as they are influenced by their past generation and society. Hence, when an individual earns high per capita income, they invest more than compared to a person who earns less or is not financially independent. Thus, risk aversion is high in people who earn less or who are dependent on some other individuals for supporting their financial needs.

Convincingly, there are enough studies (Kellerq, Sarin, & Weber, 1986, Veld & Veld- Merkoulouva, 2008, Rana, Murtaza, Noor, Din, & Rehman, 2011, Bhushan, Insight into awareness level and investment behaviour of salaried individual towards financial products, 2014, Zeisberger, 2018 & Gupta & Mahakud, 2019, Bairagi & Chakraborty, 2021) which conclude demographic characteristics of investors affect the investment decision of investor by influencing their risk perception.

2.3 Measuring Risk Perception

Risk perception is a subjective measure, and no single method has been clearly able to identify risk perception. There have been many efforts by scholars to measure risk perception in different ways but what is common in the risk perception measurements is, questionnaires are used to measure the risk perception of investors using questionnaires. Abdeldayem (2015) studied the risk perception of portfolio management on the investors of Bahrain. Investors hold a portfolio of investment which is a mix of risky and less risky investment avenues. The study focused not only on the losses and gains but also on liquidity and economic confidence that affects the risk perception of an investor. Sindhu & Kumar (2014) studied the risk preferences of investors of Kerala by using statements relating to risk perception. The statements focused on the beliefs, feelings and judgements of investors framed in statements to be answered on the five-point rating scale and suggested the consideration of Risk return models for the interpretation of the investors choice by measuring the perception of riskiness between alternative choice. Also, Jessen (2014) studied risk aversion of an investor and how the preferences of an investor change over time. Lee, Rosenthal, Veld and Merkoulouva (2015) found that risk perception and stock market expectations are linked negatively. They used



the Dutch National Bank Household Survey (DHS) to distinguish between investors who are risk averse and risk seeker and predict their stock expectations. Their study concludes that investors diversify their wealth in assets with less risk attached to them. DHS questionnaire which focuses on investment strategy is a good tool to measure the risk perception of an investor (Lee, Veld, & Merkoulova, 2015). Generally, an investor who is a risk seeker may be highly motivated towards the profits from his investment and may have low-risk perception in comparison to risk avoiders who have high-risk perception (Rana, Murtaza, Noor, Din, & Rehman, 2011). An investor on a DHS questionnaire had to choose on a 7point Likert scale and mark his preferences ranging from strongly disagree to strongly agree.

2.4 Research Gap

This study finds that risk attached to each investment avenue has been studied in detail on the Indian population but one of the important factor i.e risk perception has not been discussed much by the researchers. The literature had also established a relationship between demographic characteristics of an investor and their risk perception. However, risk perception of Indian investors has not been studied much and thus, this study tries to establish a relationship between demographic characteristics and risk perception of Indian investors.

India recorded a population of 1.37 billion in 2019 based on UN data and it is expected to rise. More than 65 per cent of the Indian population is below the age group of 35 years which confirms that India has a huge group of potential investors. If the savings of these people are channelized properly, they can help themselves as well as the country's economy to grow faster. India is on the path of rapid development and Indian markets are growing day by day (Gupta & Mahakud, 2019). A country's investment comes from the savings of its economy. Personal savings that include the household savings comprise the largest volume of savings. The savings of household is accumulated for certain objectives to be fulfilled in future, like education, marriage, unforeseen circumstances or for acquiring assets. There are various investment avenues available to Indian investors where they can devote their savings to acquire some returns in future. And thus, this study which focuses on

Indian investors and their risk perception will help to highlight the risk profile of an investor so that the investment advisors can guide their client in a proper way.

2.5 Research Objective

This study tries to examine the effect of demographic factors like age, gender, marital status, educational qualification, occupation, monthly income and number of dependent family members on risk perception. The study will be helpful to investors, investment planners/advisors to understand the risk perception. Individual investors will be able to make informed decisions of investing their saving and will help investment planners to design portfolios with minimum risk for the investors.

By now there are enough findings showing the effect of demographic characteristics on risk perception of investors. However, until now very few researchers have established the effect of demographic characteristics on risk perception of Indian investors. Precisely this research topic has been now addressed by this study. The rest of the paper explains the design of the study and elaborates on the two risk component that has been established using factor analysis and the effect of demographic characteristics on their risk perception.

3. Methodology

The sampling unit for this study are cities with more than 5% of the population who are an active investor. Hence cities like Delhi, Mumbai, Chennai, Kolkata, Chandigarh, Vadodara, Surat and Ahmedabad are shortlisted for this study. The sample for this study are those investors' who are investing their income, are active investors meaning they often check their investments and actively takes part in monitoring their financial conditions so that he/she can earn the maximum return considering the volatile market of risk. Active investors are chosen because they act promptly to changing market conditions and are not passive in their investment strategies (Sharpe, 1991). A total of 1629 samples were approached out of which 1216 agreed to be a part of the research.

The close-ended questionnaire which is developed by the researcher has been designed to collect the responses of Indian investors.



Section A of the questionnaire captures the demographic characteristics of the respondents like age, gender, marital status, educational qualification, occupation, monthly income and number of dependent family members and also the questions about basic investment patterns of an investor which includes sources of investment information and the investment avenues that an investor invests. Section B measures the risk perception of an individual investor. The statements from the DHS is used to measure the risk perception of investors. The respondents can mark their preferences on the 7point Likert scale.

For this research, the dependent variable is risk perception of the investors, and the independent variable are demographic variables, i.e., age, gender, marital status, educational qualification, occupation, monthly income and the number of a dependent family member are the independent variables for this study. We assign a number to each category of age i.e., under 30 years as 1, 31-45 years of age as 2, 4-60 years of age as 3 and more than 60 years of age as 4. In this way, we convert the categorical data into numerical data. In gender variables, 1 is assigned for males, 2 for females and 3 for others. In Marital status, 1 is assigned for singles, 2 for married and 3 for the divorced/ widow. In the educational qualification, 1 is assigned to people having educational qualification up to higher education, 2 for graduation and 3 for postgraduation and above category. In Occupation 1 is assigned to students, 2 for homemakers, 3 for self-employed, 4 for a government employee, 5 for private employee and 6 for retired.

Under monthly income, 1 is assigned for monthly income less than Rs. 30,000, 2 for Rs. 30,001-60,000, 3 for Rs. 60,001- 1,00,000 and 4 for more than Rs. 1,00,00. In the number of dependent family members, 1 is assigned to no dependent

family member, 2 for 1-3 dependent family members, 3 for 4-6 dependent family members and 4 for more than 6 dependent family members.

The data was collected through a self-administered close-ended questionnaire to gather the respondent's preferences. The methods so adopted are factor analysis, chi-square analysis and logistic regression.

4. Result

4.1 Estimation of Risk Perception

The Dutch National Bank Household Survey (DHS) questionnaire uses six statements which capture investors investment strategies. Three statements focus on investors aversiveness to risk and the other three statements focus on investors' choice to engage with risk. The investors are asked to rate on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) their agreement to the statements. DHS questionnaire is used by researchers to measure the risk aversion like Kapteyn & Teppa (2011) who uses this questionnaire to estimate the risk aversion and portfolio choice of households, Lee et al. (2015) use this DHS questionnaire to study the risk aversion of investors and their stock market expectations. For the purpose of this study, we use the six statements as explained by the DHS questionnaire. Statements 1, 2, and 4 focus on the investor's perception of risk-free investments and statements 3, 5, and 6 focus on the investor's perception of risky investments. We use the factor analysis method and find two components namely, risk aversive and risk seeker. The approach to use the factor analysis on the survey responses is an effective way to measure the risk aversion level of investors (Kapteyn & Teppa, 2011).

TABLES

Table 1: KMO and Bartlett's test for risk perception

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.676
Bartlett's Test of Sphericity	Approx. Chi-Square	874.647
	Df	15

Table-1 represents the Kaiser Meyer- Olkin (KMO), the measure of sampling adequacy for this study. The KMO value for this study is 0.67 which indicates the factor analysis is useful with

the data. The chi-square value for Bartlett's test of Sphericity is 874.64 which is significant at a 99 % level of confidence.



Table 2: Descriptive Statistics for statements of Risk Perception

	Mean	Std. Deviation	Communalities
I think it is more important to have safe investments and guaranteed returns than to take a risk to have a chance to get the highest possible returns.		4.14	.589
I would never consider investments in shares because I find this too risky.		3.13	.616
If I think the investment will be profitable, I am prepared to borrow money to make this investment.		3.74	.460
I want to be certain that my investments are safe.		4.39	.497
I get more and more convinced that I should take greater financial risks to improve my financial positions.		3.64	.633
I am prepared to take the risk to lose money when there is also a chance to gain money		3.96	.541

Table-2 presents the descriptive statistics: the mean, the standard deviation and the communalities for the responses of the individuals for the statements in the DHS questionnaire to measure risk perception. We include all six statements and then run a principal component analysis (PCA) and find two-factors with an eigenvalue greater than one. Table-3 explains the information deduced by

the factors and the percentage of the variance explained by both the factors. The total variance explained by the two components with the Eigenvalue greater than 1 is 55.60 %. The rotated component matrix indicates the two factors that are extracted. They are named as risk seekers and risk avoiders as shown in Table-4.

Table 3: Total Variance Explained by Risk Perception Factors

S. No	Factors	Eigen Value	Percent of Variance Explained	Cumulative %
1	Risk Aversive	2.080	34.66	34.66
2	Risk Seeker	1.256	20.93	55.60

Table 4: Rotated Component Matrix for Risk Perception

	Component	
	1	2
I think it is more important to have safe investments and guaranteed returns than to take a risk to have a chance to get the highest possible returns.		.729
I would never consider investments in shares because I find this too risky.		.749
If I think the investment will be profitable, I am prepared to borrow money to make this investment.	.688	
I want to be certain that my investments are safe.		.714
I get more and more convinced that I should take greater financial risks to improve my financial positions.	.789	
I am prepared to take the risk to lose money when there is also a chance to gain money	.704	

After the factor analysis on the DHS questionnaire on Indian individual investors, we divide the Indian investors into two categories on the basis of their risk perception. The statements 1,2, and 4 depicts the risk aversiveness of an investor whereas statements 3,5, & 6 depicts the risk tolerance of an investor. The two categories thus attained of the investors are called risk seeker and risk avoider. A person who is a risk seeker perceives less risk attached to a particular investment avenue as compared to risk avoider who perceives more risk. Thus, it seems that a risk seeker will choose risky investment avenues and risk avoider will choose investment avenues which are associated with less risk.

4.2 Demographic Characteristics of Investors' and Their Risk Perception

The demographic characteristics and its relationship with risk perception are described with the help of the table, diagrammatic representation, chi-square test and logistic regression. The bar graph helps to diagrammatically compare the categorical data whereas chi-square explains the independence of attributes. We also use logistics regression to understand the relationship between demographic characteristics and risk perception. Table-5 shows the basic demographic characteristics and their risk perception.



Table 5: Demographic Characteristics and Risk Perception

Demographic factors	Categories	N	% of investors who are risk seeker	N	% of investors who are risk avoider	Total
Age	Less than 30	101	72.7%	38	27.3 %	139
	31-45	353	68.3%	164	31.7 %	517
	46-60	360	67.5%	173	32.5 %	533
	More than 60	16	59.3%	11	40.7 %	27
Gender	Male	721	75.0 %	240	25 %	961
	Female	106	42.4 %	144	57.6 %	250
	Other	3	60 %	2	40 %	5
Marital Status	Single	128	77.6 %	37	22.4 %	165
	Married	696	67 %	343	33 %	1039
	Divorced	6	50 %	6	50 %	12
Educational qualification	Upto Higher Secondary	109	51.7 %	102	48.3 %	211
	Graduation	517	73 %	191	27 %	708
	Post-Graduation and above	204	68.7%	93	31.3 %	297
Occupation	Student	19	82.6 %	4	17.4 %	23
	Homemaker	1	3.3 %	29	96.7 %	30
	Self-employed	390	76 %	123	24 %	513
	Government Employee	202	60.5 %	132	39.5 %	334
	Private Employee	215	69.6 %	94	30.4 %	309
Monthly Income	Retired	3	42.9 %	4	57.1 %	7
	Less than 30,000	25	37.3 %	42	62.7 %	67
	30,001-60,000	185	55.1 %	151	44.9 %	336
	60,001-1,00,000	335	72.7 %	126	27.3 %	461
	1,00,001 and above	285	81 %	67	19 %	352
Number of family members that are dependent	None	155	76.4 %	48	23.6 %	203
	1-3 Members	432	83.1 %	88	16.9 %	520
	4-6 members	152	47.2 %	170	52.8 %	322
	6 members and above	91	53.2 %	80	46.8 %	171

Table 6: Chi-square and Risk perception

Demographic Factors	χ^2 Value	Df	Sig. Value
Age	2.379	3	0.497
Gender	97.62	2	0.000**
Marital Status	9.232	2	0.010**
Educational Qualification	34.27	2	0.000**
Occupation	86.49	5	0.000**
Monthly Income	86.99	3	0.000**
Number of dependent family members	142.57	3	0.000**

** Significant at 1% level.

A chi-square test of independence of attributes is performed to examine the relationship between various demographic characteristics of Indian individual investors and risk perception. Chi-square is performed to examine the significance of the association between two attributes (Kothari, 2004). We remove the categories with sample less than 31 to avoid any kind of biases in the results (Hogg, 2009). The categories thus removed are, people who are more than 60 years of age; category others in gender variable; category students, homemakers and retired in occupation variable. A total of 43 data entries were eliminated before running the chi-square test. Thus, the sample size of 1173 was taken for further analysis.

The relation between gender, χ^2 (2, $N = 1173$) = 97.62, $p < .01$; marital status, χ^2 (2, $N = 1173$) = 9.232, $p < .01$; educational qualification, χ^2 (2, $N = 1173$) = 34.27, $p < .01$; occupation, χ^2 (5, $N = 1173$) = 86.49, $p < .01$; monthly income, χ^2 (3, $N = 1173$) = 86.99, $p < .01$; and number of dependent family members, χ^2 (3, $N = 1173$) = 142.57, $p < .01$ shows a significant relationship with the risk perception of the respondents. However, age, χ^2 (3, $N = 1173$) = 2.37, $p < .01$ showing that risk perception is not different among different age categories.

4.3 Demographic Characteristics and Risk Perception of Investors'

To explore the effect of demographic characteristics of the respondents on their risk perception we run a logit regression. The



dependent variable in this model is the investors' risk perception which is categorized into two categories i.e. risk seeker and risk avoider. We create dummy variables for each of the categorical independent variables to find the effect of each demographic characteristics on the risk perception. Dummies for the reference category of each categorical variable is excluded in equation (i).

The logistic regression is explained below:

pi

$$L = \ln \left[\frac{pi}{1-pi} \right] = \ln(odds) = b_0 + b_1A_1 + b_2A_3 + b_3 G_1 + b_4 MS_1 + b_5 EQ_2 + b_6 EQ_3 + b_7 O_3 + b_8 O_5 [1-pi] + b_9 O_6 + b_{10} M_1 + b_{11} M_3 + b_{12} M_4 + b_{13} FM_1 + b_{14} FM_2 + b_{15} FM_3 + \dots + \epsilon_i \dots (i)$$

Where, $A_1 = 1$, when age is less than 30 years, else =0, $A_3 = 1$, when age is between 46-60 years of age, else=0, $G_1 = 1$, when gender of the respondents is Males, else =0, $MS_2 = 1$, when the respondent is married, else=0, $EQ_2 = 1$, when the respondents hold a graduate degree, else =0, $EQ_3 = 1$, when the respondent holds a Post-Graduate degree and above, else =0, $O_3 = 1$, when the respondent is Self-Employed, else =0, $O_5 = 1$,

when the respondent is a Private Employee, else =0, $M_1 = 1$, when the respondent earns a monthly income Up to Rs. 30000, else =0, $M_3 = 1$, when the respondent earns a monthly income between Rs. 60,001-Rs. 1,00,000, else =0, $M_4 = 1$, when the respondent earns a monthly income Rs. 1,00,001 and above, else =0, $FM_2 = 1$, when number 1-3 members of family are dependent, else =0, $FM_3 = 1$, when number 4-6 members of family are dependent, else =0, $FM_4 = 1$, when 6 or more members of the family are dependent, else =0.

In the model, the dependent variable takes two categories: risk seekers are categorized as 1 and risk averse as 0. For independent variable 31-45 years of age group, females, married, educational qualification up to higher education, government employee, monthly income between Rs. 30,001 - Rs. 60,000 and more than 4 dependent family members were taken as the reference category for the logistic regression. As explained earlier, we also remove the categories with sample less than 30. The categories which are removed are respondents who are more than 60 years of age; others in gender variable; students and homemakers and retired in the occupation category.

Table 7: Binary Logistic Regression and Risk Perception

		B	S.E.	Wald	df	Sig.	Exp(B)
Age	Under 30 years	.112	.312	.129	1	.719	1.119
	46-60	.022	.158	.020	1	.887	1.023
Gender	Male	1.264	.175	51.976	1	.000**	3.539
Marital Status	Single	.651	.290	5.023	1	.025**	1.917
Educational Qualification	Graduation	.806	.193	17.439	1	.000**	2.238
	Post-Graduation	.666	.222	8.970	1	.003**	1.947
Occupation	Self- Employed	.837	.173	23.403	1	.000**	2.311
	Private Employee	.247	.186	1.758	1	.185	1.280
Monthly Income	Under Rs. 30,000	-.553	.340	2.652	1	.103	.575
	Rs. 60,001-Rs. 1,00,000	.906	.180	25.207	1	.000**	2.474
	More than Rs. 1,00,000	1.258	.206	37.442	1	.000**	3.517
Number of dependent family member	None	1.486	.267	30.877	1	.000**	4.420
	1-3 members	1.781	.218	66.668	1	.000**	5.937
	4-6 members	-.107	.212	.256	1	.613	.899
	Constant	-2.804	.324	74.838	1	.000	.061

** Significant at 1% level.



5. Discussion

Investment has always been considered as an important instrument of economic growth. For any country to grow it is important to have a high rate of investments. Investments are a part of savings that fetches returns in future, but they are not risk-free. An investor before investing their money considers his risk-return trade-off and then invests according to their risk perception. Risk perception is defined as the emotional state, fears, opinions, judgements, and experience about the factors like chances of the suffering of loss, acquaintance about particular investment avenues, the impulsiveness of returns and diversification of portfolios (Sindhu & Kumar, 2014). Risk perception is influenced by demographic characteristics of investors.

There is a positive relation of all the independent variable i.e., age, gender, marital status, educational qualification, occupation, monthly income, number of dependent family members with the dependent variable i.e. risk seeker. However, in the subcategory of the independent variable, monthly income variable (people who earn less than Rs. 30,000) and the number of dependent family members (people who have 4-6 members of a family who are dependent) have a negative relation with the dependent variable i.e., risk seeker.

From Table-7, the log-likelihood of males, singles, graduates, post-graduates, people who earn monthly income between Rs. 60,000- Rs. 1,00,000, people who earn more than Rs 1,00,000 and people who have less than 4 dependent family members is significant, and it affects investors risk perception. Males are 3.53 times more risk seekers than females. Singles are 1.91 times more risk seekers than married individuals. Graduates are 2.238 time more risk seekers than people who have just a higher education degree. Individuals who hold a postgraduation degree or above are 1.94 times more risk seekers than people who just have a higher secondary education degree. Self-employed individuals are 2.31 times more risk seekers than people who are government employee. People who earn a monthly income of between Rs.60,001- Rs. 1,00,000 are 2.47 time

more risk seekers than people who earn Rs. 30,000- Rs. 60,000. People who earn a monthly

income of more than Rs.1,00,000 are 3.51 times more risk seekers than people who earn a monthly income of Rs. 30,001- Rs. 60,000. Individuals who do not have any family member dependent on them are 4.42 time more risk seekers than individuals who have more than 6 dependent family members. Individuals who have 1-3 members of the family who are dependent are 5.937 times more risk seekers than individuals who have more than 6 dependent family members.

Risk perception is based on experiences and concerns of an investor, and the way he thinks about risk (Deb & Singh, 2016; Riaz, Hunjra, & Azam, 2012; Sindhu & Kumar, 2014). In terms of research in India, which studies risk perception of investors are few. Madhumarthi (1998) studied the preferences of an investor in relation to their risk perception in Indian markets. Also, it identifies as many as 75% of the investors who are males and the majority of them are married. A married investor not only has to finance their own need but also the needs of their family. Yet, we find that 74% of the male investors who are married are risk seekers and they choose to invest in high-risk assets also. This shows that gender has a significant effect on the risk perception and the investors choice to invest in risky versus less- risky assets. Only a few female investors responded to the survey. One reason for very fewer female investors is that females earn less than men which is evident from the income gap between gender. When it comes to female investors' choice to invest in risky assets, females who are unmarried only a few tend to invest in risky investment avenues which are very less as compared to males. Equally important is the educational qualification of an investor which determines his risk perception. As evident from the results, male investors who hold a degree either graduate or above becomes risk seeker. Higher educational degrees give you a chance for studying and evaluating investment avenues in a better and structured way which make an investor perceive that he can calculate risk and thus underestimates the actual risk from an investment avenue. Whereas educational qualification in this study does not change the risk perception of females much. Females are in general, categorised as risk averse because they have less control in financial decision making of a family as compared to males. Hence



the majority of females even after holding a post-graduation degree as compared to passing class 12th do not change the risk perception i.e. risk-averse and is the reason that fewer females invest in risky investment avenues.

Interestingly we found, as the monthly income of the investors increases the investors choice to invest shifts from less-risky assets towards risky assets. The risk perception of investor also changes from risk avoiders to risk seekers as the income increases. The investor after keeping the money for regular expenditures will now have more money to diversify and hence may invest a major part of it in risky assets while saving some for less-risky assets. This is true for investors who are self-employed, government employee as well as who are a private employee.

Besides the occupation, the number of dependent family members also affect the risk perception and the investors' choice. It is believed that with a greater number of dependent family members an investor would not invest in risky assets, but through this research, we found that as the monthly income of investors increase beyond Rs. 60,000 even with a greater number of dependent family members they become risk seekers and invest in risky investment avenues.

6. Conclusion

We conclude, there is no change in risk perception across various ages of investors. However, gender and marital status significantly affect risk perception. The effect of education on risk perception is high when an individual holds a degree higher than class 12th. As an educational degree higher than graduation do not influence the risk perception much of an investor. The self-employed investors are risk seekers because they are liberal in deciding about their investment. The monthly income of investors affects risk perception highly as even a small change in a monthly income of investor from Rs.30,000 to Rs. 60,000 there is a change in risk perception of investors and finally, the less the number of family members the investors' risk perception will be less.

7. Implications

This study will help the individual investor to make informed decisions of investing his saving in accordance with how he perceives risk and

how comfortable he is in dealing with risk. When an investor is aware of the factors that might influence his decision that too at some particular point of time, they would become more aware while taking a decision. Individual investors respond to future consumption needs by delaying present consumption, so they have to be wise in their decision. By knowing the factors that affect his decisions an investor can actively participate in investment decisions, and this will also help them to select better investment portfolios.

8. Limitations

When designing the experiment, we had to make choices regarding the most relevant demographic variables in determining risk perception because we were interested to find the effect of these demographic characteristics on risk perception of Indian investors.

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