A ES
ISSN: 2096-3246
Volume 54, Issue 02, December, 2022
Special Issue

IMPACT OF DEMOGRAPHIC VARIABLES ON BEHAVIORAL DISPOSITIONS OF INDIVIDUAL INVESTORS – AN EMPIRICAL ANALYSIS

Renuka Sharma
SGT University, Gurugram (Haryana), India

Satish Chander Sharma
SGT University, Gurugram (Haryana), India

Abstract
Behavioural dispositions is a buzzword in the field of behavioural finance. It explains how psychological errors and sentiments of individual investors influence the process of decision-making. According to traditional finance, investors are always rational and they discount every information available in the market. But the same is not true with behavioural finance where investors make irrational decisions because of the several biases prevail. The paper finds out any association between demographic variables and behavioural dispositions of investors. Whether behavioural biases vary according to different demographic factors. A sample of 600 respondents was taken from the city of Gurugram with convenience sampling. Data was analyzed using Anova F-test analyzing the relationship between behavioural dispositions and demographic variables. It is found that herding bias varies according to gender. Anchoring and Representativeness bias varies according to age and investors with a higher level of income depict mental accounting and anchoring bias.
Keywords: Behavioural Dispositions, Demographic variables, Investment decisions, Individual investors.

Introduction

There is an exemplary development in financial markets regarding how investments are made, what factors influenced the decision- making process of investment, etc. According to Standard or Traditional finance, people, institutions and markets behave rationally because it is based on the concept of efficient market hypothesis and portfolio theory and investor's decisions are always in line with expected utility maximization which presumes that investors always make rational decisions. But for the last fifty years, there is a paradigm shift from Traditional finance to Behavioural finance which states that investors decision making is influenced by several biases such as overconfidence bias, mental accounting bias, anchoring bias, representativeness bias, disposition bias, regret aversion bias, loss aversion bias, herding bias etc. It marks the emergence of the concept that investors do not always make rational decisions because they are impacted by various cognitive and psychological biases and diverges from rational financial decision making. Behavioural finance is the combination of psychology with finance to analyze behavior in various market settings that differs from standard presumptions and depicts that markets are inefficient. In real-world situations, investors' decision making is impacted by a variety of biases that results in irrational behavior.

It is important to study how various behavioural dispositions impact investment decision making with the presence of demographics attributes. The impact level of behavioural dispositions changes with the demographics of the investors. For the study, five demographic variables have been included

such as age, gender, occupation, educational qualification and level of income. Bashir et. al (2013a) , Mittal and Vyas (2007), Barber and Odean (1999) investigated that both behavioural dispositions and demographic variables effect the investment decision making process of an individual investor. The study was conducted in Turkey. Six behavioural biases viz. overreaction, herding, overconfidence, media effect irrationality and preconception are combined with gender, age and individual savings level. Male investors use more behavioural finance than female investors. It is concluded that gender has a positive relationship with behavioural dispositions whereas age has a negative relationship with it. Basher's study proved that demographic variables have no relationship with behavioural dispositions. Gender, Age and Marital status have a negative relationship with behavioural dispositions. Mittal and Vyas observed that demographic variables such as age, income, education and marital status etc. affect an individual investment decision. Barber and Odean revealed that unmarried men trade more than unmarried women. Women are found to be more risk - averse than men. Young men held more volatile stocks than women. Wealthier investors were prone to take risky and volatile investments. This study aims to examine the relationship between demographic variables and behavioural dispositions.

Literature Review

Impact of Demographic Variables and Behavioural Dispositions

- Age and Behavioural Dispositions

Banarjee et. al. (2018), Kumar and Goyal,(2016), Prosad et al.(2015), Bhargavi and Bhargavi (2014), Talpsepp (2013), Bashir et al.(2013a), Zaidi and Tauni(2012), Lin (2011), Wang and Hanna (1997) their study concluded that there is no impact of age on overconfidence bias, disposition bias and herding bias. Kumar and Goyal were of the view that lower age investors depict more disposition bias than older age investors. This is so because younger investors have less experience than the older one so they are willing to accept losses from their investments and left with unfavourable stocks. Lin proposed that age has an association with overconfidence and disposition bias. Bashir et al. is of the view that age is negatively related to disposition effect and as the age increases the impact of overconfidence ,herding bias also increases and vice versa. Moreover older investors have more risk perception and younger investor stakes the risk in a different manner. Wand and Hanna explored the relationship between risk aversion and age .They concluded that risk aversion decreases with age.

- Gender and Behavioural Dispositions

Banarjee et al.(2018) , Jamil and Khan (2016), Kumar and Goyal (2016), Bhargavi and Bhargavi (2014), Bashir et. al. (2013) ,Zaidi and Tauni (2012) , Dungore (2011), Lin (2011), Beckmann and Menkhoff (2008), Bhandari and Deaves (2006), Kuo,Kuo,Chiu and Fan (2005),Felton et al. (2003), Barber and Odean (2001),Olsen and Cox(2001), Powell and Ansic (1997), examined that male investors tends to be more confident in their investment decisions as compared to female investors. Barber and Odean are of the view that female investors feel fear to take investment decisions which involve more risk i.e they are more risk-averse as compared to male investors which affects their risky investment decisions taking ability negatively. Whereas males are optimistic and hence takes risky investment decisions. Talpsepp concluded that females are more prone to disposition bias.

Further, it was found that there is no relationship between gender and herding bias. Female investors follow herding bias more than male investors. Zaidi and Tauni found that there is no association between overconfidence and gender. Lin conferred that male and female investors differ significantly in disposition bias, herding and overconfidence bias. Beckmann and Menkhoff studied the difference between gender concerning investment decisions and found that women are more risk aversive and shows less sign of risk-seeking behavior and are not less confident than men. A study was conducted in the Taiwanese stock market where it is confirmed that women were less confident and less optimistic as compared to men.

- Income and Behavioural dispositions

Banarjee et. al. (2018), Kumar and Goyal (2016), Shusha and Touny (2016), Lin (2011), Mittal and Vyas (2009), Dhar and Zhu (2006) showed that income has not a positive influence on overconfidence bias, herding and disposition bias. Upper- middle- income investors tend to be more prone to biases than lower middle-income investors. Lower middle income investors are more confident as compared to upper-middle-income-investors. While Banarjee et al. study show that there is no effect of income on investor behavioral biases. Grahan found that investors lying in middle and upper income level group have the feeling that they have good knowledge about investments compared to lower middle income group. So investors with middle to lower-income shows less sign of overconfidence than higher level of income earners. Investor's income does not have an impact on herding bias whereas Shusha and Touny found that investors with middle to upper income show sign of herding bias compared to investors with middle to lower – income. As income increases, risk aversion decreases as conferred by Dungore. Mittal and Vyas found that income significantly impacts overconfidence bias, loss and regret aversion bias. It is further found that low-income group investors show a greater disposition effect than do others.

- Occupation and Behavioural dispositions

Banarjee et al.(2018), Sarkar and Sahu (2018), Kumar and Goyal (2016), Prosad et al. (2015) Chandra et al. (2015), Lin (2011), Mittal (2010), Dhar and Zhu (2006) concluded that occupation does not influence the behavioural dispositions such as overconfidence bias, herding bias of the investors. Dhar and Zhu believe that demographic variables such as occupation impact the behavioral biases of investors particularly disposition bias. Chandra observed that persons having a finance job are more confident as compared to investors having a non-finance job. Sarkar and Sahu found that investors engaged in finance jobs depicts herding behavior as compared to investors having non-finance jobs. Further, it is found that business class investors are more influenced by behavioral biases than salaried investors. Prosad et al. found that one's occupation has a stronger relationship with overconfidence, optimism and disposition bias than the herding bias.

- Education and Behavioural dispositions

Ates et al.(2016), Prosad et. al (2015), Dungore (2011), Goo et al. (2010), Deaves et al. (2010) , Bhandari and Deaves (2006), Dhar and Zhu (2006) reported that overconfidence increases when investors are more educated and have a lower disposition effect. Investors who are less educated are more prone to representativeness bias. Risk aversion decreases as the level of education increases.

Zaidi and Tauni (2012) found that education are not associated with overconfidence. Moreover, investors with graduate and postgraduate degrees are less tend to show disposition effect.
Onsumu et. al. (2017), Fama (1970),confirmed that investor is rational, and they use various behavioural patterns which are effected by demographic variables such as gender, age, income and occupation. The study investigates the impact of demographic traits on the behavioural dispositions of Indonesian investors while making investment decisions and concluded male investors are more confident than female investors. According to Onsumu demographic variables like age, educational qualification did not significantly affect investor's investment biases. But gender impacts behavioural dispositions and men are more affected with several biases as compared to women.

Methodology

It is a micro investigation nature that studies the impact of demographic variables on behavioural dispositions of individual investors. It is an empirical research design. Five demographic variables viz. gender, age, educational qualification, occupation and annual income has been taken and eight behavioural biases viz. herding bias, overconfidence bias, disposition bias, mental accounting bias, anchoring bias, representativeness bias, loss aversion bias and regret aversion bias has been taken for the study.

Objective:

- The objective of the study the impact of demographic variables on the behavioural dispositions of individual investors.

Hypothesis

H_{01}: There is no significant relationship between Gender and Behavioural dispositions.

H_{02}: There is no significant relationship between Age and Behavioural dispositions.

H_{03}: There is no significant relationship between Educational qualification and Behavioural dispositions.

H_{04}: There is no significant relationship between Occupation and Behavioural dispositions.

H_{05}: There is no significant relationship between Annual Income and Behavioural dispositions.

Validity and Reliability (refers to Table 1 and Table 2)

Table 1: Reliability Statistics of Demographic variables **.**

Cronbach's Alpha	N of Items
0.780	5

Table 2: Reliability Statistics of Behavioural Dispositions.

Cronbach's Alpha	N of Items
.856	64

Sample size

The data were collected from 600 individual investors in Gurugram.

Sampling Area

The area of research covered in this study was Gurugram city from Haryana State.

Type of Sampling: Convenience Sampling

Data Collection:

A structured questionnaire has been used to collect primary data consisting of 64 behavioural disposition statements. Interviews were taken from the investors. Secondary data have been collected from various published sources such as books, journals, magazines, newspapers, websites and selected case studies.

Data Analysis and Interpretation

The questionnaire was analyzed using F test ANOVA.

To understand the association between demographic factors and behavioural dispositions of investors', F- test were applied to test the null hypothesis as under.

Relationship between Demographic variables and Behavioural Dispositions

i Gender and Behavioural dispositions (refers to Table 3)

Table 3: Influence of gender on Behavioral dispositions.

	Gender	N	Mean	SD	F-value	Sig.
Herding Bias	Male	483	3.49	0.52	55.283	0.000
	Female	117	3.88	0.46		
	Total	600	3.57	0.53		
Overconfidence Bias	Male	483	3.73	0.57	21.111	0.000
	Female	117	2.67	0.69		
	Total	600	3.72	0.60		
Disposition Bias	Male	483	3.78	0.52	20.448	0.000
	Female	117	4.00	0.00		
	Total	600	3.83	0.47		
Mental Accounting Bias	Male	483	3.82	0.70	0.066	0.797
	Female	117	3.84	0.52		
	Total	600	3.82	0.67		
Anchoring Bias	Male	483	3.50	0.66	67.646	0.000
	Female	117	4.00	0.00		
	Total	600	3.60	0.63		
Representativeness Bias	Male	483	3.66	0.58	10.716	0.001
	Female	117	3.85	0.39		
	Total	600	3.70	0.55		
Loss Aversion Bias	Male	483	3.68	0.61	69.831	0.000
	Female	117	4.17	0.38		
	Total	600	3.78	0.60		
Regret aversion Bias	Male	483	3.85	0.61	1.086	0.298
	Female	117	3.46	0.59		

	Total	600	3.80	0.59		

Interpretation: The obtained F value for Herding, Overconfidence, Disposition, Anchoring, Representativeness, Loss Aversion and Regret Aversion biases are 55.283, 21.111, 20.448, 67.646, 10.716, 69.831 and 1.086 respectively and their significance value is 0.000 and for Representativeness bias it is 0.001 which is less than 0.05, it indicates that the null hypothesis is rejected and there is a significant relationship between Behavioural dispositions and the Gender of the investors.

Further, the mean values indicate that female investors are more prone to biases such as herding, disposition, mental accounting , anchoring ,representativeness, loss aversion .Whereas males are more prone to overconfidence and regret aversion bias.

ii Age and Behavioural dispositions (refers to Table 4)

Table 4: Influence of Age on Behavioral biases.

	Age	N	Mean	SD	F-value	Sig.
Herding Bias	Less than 30 years	163	3.91	0.35	79.891	0.000
	30 - less than 45 years	226	3.44	0.53		
	45 - less than 60 years	158	3.25	0.48		
	60 years and above	53	3.32	0.32		
	Total	600	3.57	0.53		
Overconfidence Bias	Less than 30 years	163	3.84	0.54	19.307	0.000
	30 - less than 45 years	226	3.75	0.52		
	45 - less than 60 years	158	3.44	0.74		
	60 years and above	53	3.12	0.70		
	Total	600	3.72	0.60		
Disposition Bias	Less than 30 years	163	3.94	0.24	28.483	0.000
	30 - less than 45 years	226	3.92	0.32		
	45 - less than 60 years	158	3.72	0.68		
	60 years and above	53	3.38	0.49		
	Total	600	3.83	0.47		

Mental Accounting Bias	Less than 30 years	163	3.66	0.80	30.861	0.000
	30 - less than 45 years	226	3.85	0.51		
	45 - less than 60 years	158	4.14	0.57		
	60 years and above	53	3.28	0.57		
	Total	600	3.82	0.67		
Anchoring Bias	Less than 30 years	163	3.80	0.40	27.86	0.000
	30 - less than 45 years	226	3.72	0.45		
	45 - less than 60 years	158	3.27	0.83		
	60 years and above	53	3.40	0.69		
	Total	600	3.60	0.63		
Representativeness Bias	Less than 30 years	163	3.69	0.57	16.325	0.000
	30 - less than 45 years	226	3.86	0.35		
	45 - less than 60 years	158	3.47	0.56		
	60 years and above	53	3.70	0.85		
	Total	600	3.70	0.55		
Loss Aversion Bias	Less than 30 years	163	3.97	0.54	9.019	0.000
	30 - less than 45 years	226	3.72	0.62		
	45 - less than 60 years	158	3.65	0.60		
	60 years and above	53	3.81	0.56		
	Total	600	3.78	0.60		
Regret Aversion Bias	Less than 30 years	163	3.80	0.63	4.146	0.006
	30 - less than 45 years	226	3.89	0.59		
	45 - less than 60 years	158	3.67	0.51		

	60 years and above	53	3.77	0.64		
	Total	600	3.80	0.59		

Interpretation: The obtained F value for Herding, Overconfidence, Disposition, Mental Accounting ,Anchoring, Representativeness ,Loss Aversion and Regret Aversion biases are 79.891,19.307,28.483,30.861,27.86,16.325,9.019 and 4.146 respectively and their significance value is 0.000 except for regret aversion bias which is 0.006 and all the p-values are smaller than 0.05 ,it means that there is a significant relationship between age and behavioural dispositions of the investors thus the null hypothesis is rejected.

Further the above table indicates that investors less than 30 years are influenced by herding, overconfidence, disposition, anchoring and loss aversion bias. Mental Accounting bias mean is highest in the age group of 45-less than 60 years and investors in the age group of 30- less than 45 years are influenced more by representativeness and regret aversion bias.

iii Educational qualification and Behavioural dispositions (refers to Table 5)

Table 5: Influence of Education on Behavioral biases.

	Qualification	N	Mean	SD	F-value	Sig.
Herding Bias	Graduation	128	3.73	0.49	12.338	0.000
	Post Graduation	232	3.53	0.53		
	Professional	174	3.60	0.52		
	Doctorate	66	3.27	0.45		
	Total	600	3.57	0.53		
Overconfidence Bias	Graduation	128	3.80	0.55	16.433	0.000
	Post Graduation	232	3.84	0.46		
	Professional	174	3.65	0.69		
	Doctorate	66	3.30	0.63		
	Total	600	3.72	0.60		
Disposition Bias	Graduation	128	3.80	0.40	4.869	0.002
	Post Graduation	232	3.76	0.60		
	Professional	174	3.87	0.40		
	Doctorate	66	3.98	0.12		
	Total	600	3.83	0.47		
Mental	Graduation	128	3.68	0.81	2.938	0.033

Accounting Bias	Post Graduation	232	3.90	0.63		
	Professional	174	3.83	0.60		
	Doctorate	66	3.83	0.62		
	Total	600	3.82	0.67		
Anchoring Bias	Graduation	128	3.46	0.60	3.507	0.015
	Post Graduation	232	3.66	0.63		
	Professional	174	3.57	0.66		
	Doctorate	66	3.70	0.53		
	Total	600	3.60	0.63		
Representativeness Bias	Graduation	128	3.72	0.66	0.374	0.772
	Post Graduation	232	3.67	0.54		
	Professional	174	3.70	0.51		
	Doctorate	66	3.74	0.44		
	Total	600	3.70	0.55		
Loss Aversion Bias	Graduation	128	3.86	0.47	8.699	0.000
	Post Graduation	232	3.82	0.53		
	Professional	174	3.59	0.80		
	Doctorate	66	3.94	0.24		
	Total	600	3.78	0.60		
Regret Aversion Bias	Graduation	128	3.76	0.64	5.352	0.001
	Post Graduation	232	3.83	0.55		
	Professional	174	3.73	0.59		
	Doctorate	66	3.92	0.64		
	Total	600	3.80	0.59		

Interpretation : The obtained F value for Herding, Overconfidence ,Disposition, Mental accounting, Anchoring, Loss aversion and Regret aversion biases are 12.338,16.433,4.869,2.938,3.507,8.699 and 5.352 respectively. Their significance value is 0.000 for herding, overconfidence, disposition and loss aversion. For mental accounting it is 0.033, 0.015 for anchoring and 0.001 for regret aversion bias. All p values are smaller than 0.05 so the null hypothesis is rejected there is a significant relationship between education and behavioural dispositions.

Further, it is seen from the above table that graduate investors are more influenced by herding, overconfidence. Post Graduate investors are influenced by mental accounting bias and anchoring,

representativeness, loss aversion and regret aversion are more seen in doctorate investors

iv Occupation and Behavioural dispositions (refers to Table 6)

Table 6: Influence of Occupation on Behavioral biases.

	Occupation	N	Mean	SD	F-value	Sig.
Herding Bias	Private sector employee	149	3.64	0.52	6.893	0.000
	Govt. sector employee	167	3.50	0.55		
	Self employed	131	3.59	0.49		
	Professional	128	3.47	0.55		
	Retired	25	3.23	0.40		
	Total	600	3.57	0.53		
Overconfidence Bias	Private sector employee	149	3.76	0.59	12.265	0.000
	Govt. sector employee	167	3.64	0.57		
	Self employed	131	3.93	0.31		
	Professional	128	3.48	0.78		
	Retired	25	3.34	0.60		
	Total	600	3.72	0.60		
Disposition Bias	Private sector employee	149	3.75	0.66	11.969	0.000
	Govt. sector employee	167	3.92	0.30		
	Self employed	131	3.88	0.35		
	Professional	128	3.84	0.44		
	Retired	25	3.28	0.46		
	Total	600	3.83	0.47		
Mental Accounting Bias	Private sector employee	149	3.83	0.64	3.516	0.008
	Govt. sector employee	167	3.70	0.72		
	Self employed	131	3.86	0.57		

	Professional	128	3.89	0.69		
	Retired	25	3.48	0.71		
	Total	600	3.82	0.67		
Anchoring Bias	Private sector employee	149	3.57	0.67	3.726	0.005
	Govt. sector employee	167	3.59	0.66		
	Self employed	131	3.71	0.50		
	Professional	128	3.59	0.65		
	Retired	25	3.20	0.41		
	Total	600	3.60	0.63		
Representativeness Bias	Private sector employee	149	3.68	0.51	6.876	0.000
	Govt. sector employee	167	3.67	0.50		
	Self employed	131	3.75	0.57		
	Professional	128	3.60	0.51		
	Retired	25	3.20	0.87		
	Total	600	3.70	0.55		
Loss Aversion Bias	Private sector employee	149	3.97	0.53	8.362	0.000
	Govt. sector employee	167	3.81	0.49		
	Self employed	131	3.57	0.72		
	Professional	128	3.72	0.64		
	Retired	25	3.76	0.44		
	Total	600	3.78	0.60		
Regret Aversion Bias	Private sector employee	149	3.74	0.55	7.467	0.000
	Govt. sector employee	167	3.84	0.68		
	Self employed	131	3.80	0.47		
	Professional	128	3.80	0.58		
	Retired	25	3.76	0.83		
	Total	600	3.80	0.59		

Interpretation: The obtained F value for Herding, Overconfidence, Disposition, Mental Accounting, Anchoring, Representativeness, Loss Aversion and Regret Aversion bias are 6.893, 12.265, 11.969, 3.516, 3.726 and 6.876 respectively. The p -value for herding, overconfidence, disposition, representativeness, loss aversion and regret aversion is 0.000.And for mental accounting it is 0.008 and 0.005 for anchoring bias .All p values are smaller than 0.05 so the null hypothesis is rejected and it can be inferred that occupation significantly influenced by the behavioural dispositions.

Further, it is seen from the above table that private sector employees are prone to herding and loss aversion. Overconfidence, anchoring bias are more seen in self –employed personnels whereas government sector employees are influenced by disposition, mental accounting and regret aversion bias.

v Annual Income and Behavioural dispositions (refers to Table 7)

Table 7: Influence of Income on Behavioral biases.

	Annual Income	N	Mean	SD	F-value	Sig.
Herding Bias	less than Rs.5,00,000	108	3.90	0.30	20.742	0.000
	Rs.5,00,000 -less than Rs.15,00,000	351	3.53	0.55		
	Rs.15,00,000-less than Rs. 25,00,000	63	3.67	0.51		
	Rs.25,00,000 -less than Rs. 35,00,000	54	3.15	0.36		
	Rs.35,00,000 - less than Rs. 45,00,000	18	3.39	0.50		
	Greater Than Rs. 45,00,000	6	3.00	0.00		
	Total	600	3.57	0.53		
Overconfidence Bias	less than Rs.5,00,000	108	3.89	0.48	14.158	0.000
	Rs.5,00,000 -less than Rs.15,00,000	351	3.72	0.56		
	Rs.15,00,000-less than Rs. 25,00,000	63	3.84	0.45		
	Rs.25,00,000 -less than Rs. 35,00,000	54	3.56	0.72		
	Rs.35,00,000 - less than Rs. 45,00,000	18	2.89	0.83		
	Greater Than Rs. 45,00,000	6	2.83	0.98		
	Total	600	3.72	0.60		
Disposition Bias	less than Rs.5,00,000	108	3.98	0.18	4.889	0.000
	Rs.5,00,000 -less than Rs.15,00,000	351	3.79	0.52		

	Rs.15,00,000-less than Rs. 25,00,000	63	3.73	0.51		
	Rs.25,00,000 -less than Rs. 35,00,000	54	3.80	0.57		
	Rs.35,00,000 - less than Rs. 45,00,000	18	4.00	0.00		
	Greater Than Rs. 45,00,000	6	3.67	0.52		
	Total	600	3.83	0.47		
Mental Accounting Bias	less than Rs.5,00,000	108	3.67	0.72	6.099	0.000
	Rs.5,00,000 -less than Rs.15,00,000	351	3.86	0.72		
	Rs.15,00,000-less than Rs. 25,00,000	63	3.89	0.51		
	Rs.25,00,000 -less than Rs. 35,00,000	54	3.81	0.39		
	Rs.35,00,000 - less than Rs. 45,00,000	18	3.72	0.46		
	Greater Than Rs. 45,00,000	6	3.40	0.50		
	Total	600	3.82	0.67		
Anchoring Bias	less than Rs.5,00,000	108	3.74	0.44	0.791	0.556
	Rs.5,00,000 -less than Rs.15,00,000	351	3.54	0.67		
	Rs.15,00,000-less than Rs. 25,00,000	63	3.76	0.43		
	Rs.25,00,000 -less than Rs. 35,00,000	54	3.61	0.76		
	Rs.35,00,000 - less than Rs. 45,00,000	18	3.17	0.62		
	Greater Than Rs. 45,00,000	6	3.33	0.52		
	Total	600	3.60	0.63		
Representativeness Bias	less than Rs.5,00,000	108	3.81	0.46	2.121	0.061
	Rs.5,00,000 -less than Rs.15,00,000	351	3.67	0.59		
	Rs.15,00,000-less than Rs. 25,00,000	63	3.73	0.45		
	Rs.25,00,000 -less than Rs. 35,00,000	54	3.70	0.54		
	Rs.35,00,000 - less than Rs. 45,00,000	18	3.44	0.51		
	Greater Than Rs. 45,00,000	6	3.50	0.55		

	Total	600	3.70	0.55		
Loss Aversion Bias	less than Rs.5,00,000	108	4.14	0.46	18.477	0.000
	Rs.5,00,000 -less than Rs.15,00,000	351	3.74	0.55		
	Rs.15,00,000-less than Rs. 25,00,000	63	3.33	0.84		
	Rs.25,00,000 -less than Rs. 35,00,000	54	3.78	0.42		
	Rs.35,00,000 - less than Rs. 45,00,000	18	4.00	0.00		
	Greater Than Rs. 45,00,000	6	3.33	1.03		
	Total	600	3.78	0.60		
Regret Aversion Bias	less than Rs.5,00,000	108	3.94	0.70	4.262	0.001
	Rs.5,00,000 -less than Rs.15,00,000	351	3.78	0.56		
	Rs.15,00,000-less than Rs. 25,00,000	63	3.81	0.53		
	Rs.25,00,000 -less than Rs. 35,00,000	54	3.74	0.62		
	Rs.35,00,000 - less than Rs. 45,00,000	18	3.84	0.64		
	Greater Than Rs. 45,00,000	6	3.50	0.55		
	Total	600	3.80	0.59		

Interpretation: The obtained F value for Herding, Overconfidence ,Disposition, Mental accounting, Loss aversion and regret aversion is 20.742, 14.158, 4.889 ,6.099, 18.477 and 4.262 respectively .The p values for herding, overconfidence, disposition, mental accounting, loss aversion bias is 0.000 and for regret aversion it is 0.001.Since all p values are smaller than 0.05 so the null hypothesis is rejected.

Further, it is interpreted that investors earning less than Rs.5,00,000 are influenced by herding, overconfidence ,disposition ,representativeness ,loss aversion and regret aversion bias. Mental Accounting, anchoring, representativeness bias are more found in investors earning between Rs.15,00,000-less than Rs. 25,00,000.

Conclusion

The study examines the influence of demographic variables on various behavioural dispositions of individual investors while undertaking investment decisions. Despite an extensive study on the impact of behavioural biases on portfolio investment decisions but still, there is a lack of research that how demographic variables impact behavioural biases depicted by individual investors. The study concluded that all demographic factors viz. gender, age, educational qualification, occupation and annual income impacts the various behavioural dispositions. It is found that female investors are

more prone to herding, disposition, mental accounting, anchoring and representativeness bias while male investors show sign of overconfidence bias, they are more affected if investments suffer a loss and regret more on purchasing securities yielding to low returns. Young investors are more influenced by behavioural dispositions and as the age increases dispositions decreases. As regards to qualification, professional seeking education investors are more overconfident. Investors having their own business are more t overconfident and are influenced by anchoring and representativeness bias. Investors having less income are subject to herding, overconfidence, disposition, representativeness, loss aversion and regret aversion bias. India is a burgeoning market for conducting investment activities that's why it is important for financial advisers, planners, investment consultancy firms etc. to have a view that how demographic variables impact behavioural dispositions so that they can make suitable recommendations to their clients.

References

Ahmadi, A., Afrakhteh, H., Rahnamee, M. T. and Ghadermazi, H. (2016) "Identification Spatial Effects of Space Economy in Peripheral Areas of Sanandaj", IARS' International Research Journal. Victoria, Australia, 6(2). doi: 10.51611/iars.irj.v6i2.2016.58.

Ates, S., Coskun, A., Sahin, M.A. and Demircan, M.L. (2016) 'Impact of financial literacy on the behavioral biases of individual stock investors: evidence from Borsa Istanbul,' *Business and Economics Research Journal*, *7*(3), 1-19.

Baker,H.K., and Filbeck,G.(2013) 'Paradigm shifts in finance-some lessons from the financial crisis,'*European Financial Review*, 11-18.

Banarjee, A., A. De., and G. Banyopadhyay. (2018) 'Impact of demographic profile on investor biases in India using olap and anova,' *The Institute of Cost Accountants of India*. *43*(4), 75-94.

Barber, B. M., & Odean, T. (1999) 'Boys will be Boys : Gender, Overconfidence , and Common Stock Investment,'*The Quarterly journal of Economics*, *116* (1), 261–292.

Barber, B.M., & Odean, T. (2001) 'Boys will be Boys: Gender, Overconfidence, and Common Stock Investment,'*The Quarterly Journal of Economics*, *116* (1), 261-292.

Bashir, T., Azam, N., Butt, A., Javed., A and Tanvir., A(2013a) 'Are behavioral biases influenced by demographic characteristics & personality traits? Evidence from Pakistan.,'*European Scientific Journal, 9*(29), 277-293.

Bashir, T., Rasheed, S., Raftar, S., Fatima, S., and Maqsood, S. (2013) 'Impact of behavioral biases on investor decision making: Male vs female,'*Journal of Business and Management*, *10*(3), 60-68.

Beckmann, D., and Menkhoff, L. (2008) 'Will women be women? analyzing the gender difference among financial experts,'*Kyklos*, *61* (3), 364-384.

Bhandari, G. and Deaves, R. (2006) 'The demographics of overconfidence,'*Journal of Behavioral Finance*, *7*(1), 5-11.

Bhargavi,A., and Bhargavi,P.(2014) 'Investor's perception towards investment,'*Global Journal of Financial Management, 6*(2), 185-190.

Bondt, W. F., & Thaler, R. (1985) 'Does the stock market overreact,' *The Journal of Finance*, *40* (3), 793-805.

Chandra, A. (2017) 'Does Individual heterogeneity Shape Retail Investor Behavior,' *International Journal of Social Economic*, *44*(5), 578-593.

Deaves, R., Lüders, E. and Schröder, M.(2010) 'The dynamics of overconfidence: evidence from stock market forecasters,'*Journal of Economic Behavior and Organization*, *75*(3), 402-412.
Dhar, R. and Zhu, N. (2006) 'Up close and personal: investor sophistication and the disposition effect,'*Management Science*, *52*(5), 726-740.
Dungore, P. (2011) 'An Analytical Study of Psychological Facets Affecting Rationality: From the Investors' Perspective,' *IUP Journal of Behavioral Finance*, *8(*4), 40–62.
Eagly, A.H., Carli ,L.L., (1981) 'Sex of researchers and sex-typed communications as determinants of sex differences in influence ability: A meta-analysis of social influence studies*,' Psychological Bulletin*, *90*(1), 1-20.
Fama, E.F. (1970) 'Efficient capital markets: a review of theory and empirical work,' *The Journal of Finance*, *25*(2), 383-417.
Felton,J., Gibson, B., and Sanbonmatsu,M.(2003) 'Preference for risk in investing as a function of trait optimism and gender,'*Journal of Behavioral Finance*, *4(*1), 33-40.
Gajera, A. (2020) "A Study on Comparative Analysis of Major Stock Indices of World", IARS' International Research Journal. Victoria, Australia, 10(1). doi: 10.51611/iars.irj.v10i1.2020.113.
Goo, Y.J., Chen, D.H., Chang, S.H.S. and Yeh, C.F. (2010) 'A study of the disposition effect for individual investors in the Taiwan stock market,'*Emerging Markets Finance and Trade*, 46 *(1),* 108-119.
Jamil, S.A and Khan, K. (2016) 'Does gender difference impact investment decisions, 'Evidence from Oman. *International Journal of Economics and Financial Issues*, *6*(2), 456- 460.
Kumar, S., and Goyal, N. (2016) 'Evidence on Rationally Biases in Investment Decision Making,'*Qualitative Research in financial Market*, 8(4), 270-287.
Kuo, M., Kuo, N., Chiu, Y., and Fan, P.(2005) 'Gender and investment behavior: On Taiwanese individual investors,' *Journal of Financial Studies*, *13*(2), 1-28.
Lin, H.W. (2011) 'Elucidating rational investment decisions and behavioral biases : evidence from the Taiwanese stock market.,' *African Journal of Business Management*, *5* (5), 1630-1641.
Markowitz, H. (1952) 'Portfolio selection,' *The Journal of Finance*, *7* (1), 77-91.
Mittal, M. (2010) 'Study of differences in behavioral biases in investment decision-making between the salaried and business class investors,' *IUP Journal of Behavioral Finance*, *7*(4), 20-34.
Mittal, M., & Vyas, R. (2009) 'Demographics of self attribution bias in investment decision,'*The Journal of Indian Management & Strategy 8M*, *14* (1), 26-32.
Mittal, M., & Vyas, R. (2009) 'Does Irrationality in Investment Decisions Vary with Income,'*IUP Journal of Behavioral Finance, 6*(1), 26.
Olsen, R. A., & Cox, C. M. (2001) 'The influence of gender on the perception and response to investment risk: The case of professional investors,'*The Journal of Psychology and Financial Markets*, *2* (1), 29-36.
Onsomu, Z.N., and Kaijage,E Aduda,J and Irayas,C. (2017) 'Demographic and investor biases at the Nairobi securities exchange Kenya,' International Journal of Arts and Commerce, 6 *(5),* 51-60.
Powell, M., & Ansic, D. (1997) 'Gender differences in risk behaviour in financial decision-making: An experimental analysis,' *Journal of Economic Psychology*, *18* (6), 605-628.
Prosad, J.M., Kapoor, S., and Sengupta, J. (2014) 'Behavioral Biases in Indian Investors: a Survey

of Delhi-NCR Region,' *Qualitative research in financial markets*, *7*(3), 230-263.
Rosette, P. O. (2015) "EFFECT OF GLOBAL RECESSION ON INDIAN REALTY SECTOR AND ITS FUTURE DEVELOPMENTS", IARS' International Research Journal. Victoria, Australia, 5(2). doi: 10.51611/iars.irj.v5i2.2015.49.
Shiller, R.J. (2003) 'From efficient markets theory to behavioral finance,'*Journal of Economic Perspectives*, *17*(1), 83-104.
Shusha, A.A., & Touny, M.A. (2016) 'The attitudinal Determinants of Adopting the Herd Behavior: An Applied Study on the Egyptian Exchange,' *Journal of Finance and Investment Analysis*. *5*(1), 5-69.
Talpsepp, T. (2013) 'Does gender and age affect investor performance and the disposition effect,' *Research in Economics and Business: Central and Eastern Europe*, *2* (1), 76-93.
Tourani-Rad, A. and Kirkby, S. (2005) 'Investigation of investors' overconfidence, familiarity and socialization,'*Accounting and Finance*, *45*(2), 283-300.
Wang, H. and Hanna, S. (1997) 'Does risk tolerance decrease with age ,'*Financial Counseling and Planning*, *8*(2), 27-31.

Yoong, J. and Ferreira, V.R.D.M. (2013).Improving financial education effectiveness through behavioural economics: OECD key findings and way forward, OECD Publishing, 1, 1926-1982.
Zaidi, F. B.,and Tauni, M. Z. (2012) 'Influence of Investors' Personality Traits and Demographics on Overconfidence Bias,'*Interdisciplinary Journal of Contemporary Research in Business* , *4* (6), 730-746.