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Impact of Demographic Characteristics on Investment Amount: A Study on the general Investors of Dhaka Stock Exchange, Bangladesh

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Abstract

The purpose of this paper is to examine the association between demographic characteristics of general investors such as age, education level, occupation, experience and income level and the stock market investment amount. Survey techniques have been applied on a sample size of 300 general investors selected from Dhaka Stock Exchange and the average amount of investment per year has been determined from the structured questionnaire. The frequency table was used to demonstrate how many investors made this particular investment. To identify whether there is any interaction between two demographical characteristics on the yearly average investment amount of the investors two-way ANOVA test was employed. Results indicate that selected demographic characteristics make difference in the average amount of investment in different types of shares. The paper explores for the first time the link between demographic characteristics and investment amount of general investors. This study provides notable insights towards the understanding of stock investment made by general investors having different demographic characteristics.

Keywords: demographic characteristics, investors, investment amount, stock market

1. Introduction

In the investment sector, Stock market plays a significant role to enhance the capital amount of any public limited company and from the investors' viewpoint, stock investment assists them with the investment gain, dividend income and stock ownership. The stock or share investments, which fulfill the expectations of individual's need of growing money are found significantly attention grabbing by most of the investors.

However, some of the people in society are intriguingly more likely to prefer investing their hardcore money in the stock market than in other places. In each and every day nearly 1, 23,059 transactions worth taka 7 billion made in Dhaka stock exchange (dsebd,market statistics, 2017).The value of market capital in the stock market is caused to move up substantially with the investment and trading activities of the general investors. Von Neumann (1944) stated that investors act rationally while making their investment decisions and determining their investment amount. But Later on, it is explored by many researchers that individual investor sometimes makes irrational decisions and invests a huge amount of money in the stock market without considering facts and outcomes (Barberis, 2003).

Investment decisions such as selecting the type of share to invest, investing in different riskier shares, determining the amount to invest are influenced by different factors. According to (Kahneman & Tversky, 1979) not only maximized investment return also phychological factors,emotion and risk play a vital role in investors' decision making.

(Sadiq & Ishaq, 2014) mentioned investor's investment level with risk tolerance attitude is influenced by many factors and demographic profile of investors is one of the decision influencing factors among others. Economist and policymakers have recognized that demographic factors both intrinsic as well as extrinsic like age, gender, marital status, qualifications, occupation, annual income, geographic location etc. have an impact on the level of risk that investors take further (Jain & Mandot, 2012).

The fundamental subject of this assiduous study is to question whether the investors with different risk tolerance attitude make different amount of investment in the stock market due to their diverse demographic profile such as age, education level, occupation, and experience and income level. Keeping in mind that, a circumstantial

questionnaire study is conducted on a sample group of shareholders conscientiously selected from Dhaka stock exchange, Bangladesh and then by employing chosen statistical methods, it is gingerly examined whether the demographical characteristics are influential on share market investment amount.

In the first part of this study, a detailed literature review is conducted to scrutinize the demographic characteristics of investors focusing on their risk tolerance attitude. And, in the next part, the average investment of the different demographic investors are meticulously evaluated using the statistics techniques techniques and methods.

2. Literature Review and Hypothesis Development

Stock is a financial asset with a return that is not guaranteed.Stocks are considered as risk asset because of its significant degree of price volatility. Holding a stock or share is generally riskier than other financial assets.Researchers found that the investment amount in the stock market is associated with different investors' risk tolerance level.During risky investment decisions, various factors like demographic, social and economic factors influence the individual investors' decision-making process (Gumus & Dayioglu, 2015).

(Sadiq & Ishaq, 2014) have showed that some demographic factors of investors such as academic education, income level, investment knowledge, and investment experience affect the investors' level of risk taking behavior and during the choice of investments investors' gender, marital status, occupation, and family size showed no effect on investors' level of risk tolerance. (Gumus & Dayioglu, 2015) focused on portfolio investment and considered the risks on different levels. It has been demonstrated that during their portfolio investments the factors income level, age, gender, educational background and quantity and quality level of one's profession except marital status all have the significant effect on risk perception of individual investors.

Icellioglu, (2015) stated that substantial amount of research and discussion required to assess the influence of a changing demographic structure on the price of financial assets. But Selim Arena (2015) found no differences in his study in the choice of investment alternatives based on several factors such as demographics (i.e., gender, age, education and marital status), investment decision criteria (i.e., risk, repay, corporate data and society criteria), and financial literacy level (i.e. basic and advanced literacy).

Different demographic characteristics investors choose a particular type of stock based on its price and future return and invest a significant amount of money in that particular stock. In assessing the investment amount in the stock market by different investors it is important to note the demographic characteristics of investors such as age, education level, occupation, experience and income level considering their risk taking attitude.

Age is considered as an important demographic factor.(Korniotis & Kumar, 2011) found that older investors possess greater investment knowledge in portfolio investment decisions. (Wang, H. & S. Hanna, 1997) explored that risk aversion relatively decreased with the age of investors when other variables are held constant. Older people tolerate more risk as compare to the young investors. Grable (1999b) showed young investor can not accurately assess his work performance as compared to older one. Agarwal (2009) showed the relation between older adults and poor financial choices made by them.It was found in his study that middle-aged adults made fewer financial mistakes compare to either younger or older adults. Further, some researchers explored that investors age and financial risk tolerance have no significant relationship (Al-Ajmi, 2008: 21) (Anbar and Eker 2010: 505) Gumede (2009).

Second demographic factor which caused a higher financial risk tolerance and makes a significant change in stock investment quantity is education i.e. formal attained academic training (sung, Hanna, 1996). Arif (2015) assessed the individual investors' investment decision based on only their financial literacy. The results indicated that there is a negative significant impact of financial literacy on the sum of investment factors at 10% significant level. Graham J. R. (2009) in his study found a positive relationship in the level of education obtained and risk tolerance. Contradictory results are also shown by some researchers, which are exploring that no

significant relationship exists between education and risk tolerance (Strydom, 2009) (Gumede, 2009). Kanthapanit (2015) in his research on Thai investors found that the usage of factors like dividend yields, share prices, P/E ratio, asset size, the reputations of managing director and audit firms, auditors' reports, and financial opinions are influenced by the level of education for share-buying, selling and holding decisions.

(Jianakoplos & Bernasek, 2006) focused on another important demographic factor of investor which is experience. According to his research, Old people gain investment knowledge and experience and make better investment.(Nicolosi, Peng & Zhu, 2009) analyzed individual investors' learning behavior from two perspectives, the first was based on the relation between trade performance and trading behavior and presented strong evidence that individual investors learn from their trading experiences. (Bradbury , Hens , & Zeisbe, 2015) found that participants' understanding considerably improves with simulated experience of the underlying risk–return profile and helps them to reconsider their investment decisions.

(Malkiel, 1996) stated in his book that the risks one can afford to take depend on one's financial situation along with types and sources of one's income.(Mboma & Reuben, 2013) revealed that income level of investors is one of the personal decision factors influencing investment in capital market. Persons having the higher level of income invest in riskier financial assets compared to persons with the lower level of income (MacCrimmon, 1986). Investors invest their funds in more volatile portfolio composed of more volatile stocks when they have higher level of income (Barber, 2001).

Occupation means a person's usual or principal work or business, especially as a means of earning a living. (MacCrimmon & Wehrung, 1985) found that investors like businessmen, professionals who generate their income directly from their own business, trade, or profession invest their funds to higher levels of risk taking as compared to the people of straight salary work for others. Occupational status is also affecting the level of risk-taking ability; people with higher ranking occupational status are more risk seeker and invest a good amount of money in stock as compared to low ranking occupational status (Roszkowski, 1993).

Since there is coherent study on how the demographic factors influence the investors' investment decisions and their risk tolerance level. But there is no consistent study that quantifies this risk tolerance level by assessing the amount of investment in the stock market. The quantity of their investment has not been explored in any previous study, which is obviously the end result of any decisions.

So it should be useful to seek further empirical evidence testing the following hypotheses based on the theoretical explanation above:

Hypothesis 1a: There is significant effect of occupation and experience level of investors on investment amount.

Hypothesis 1b: There is significant effect of age and education level of investors on investment amount.

Hypothesis 1c: There is significant effect of occupation and income level of investors on investment amount.

Hypothesis 1d: There is significant effect of education and income level of investors on investment amount.

Hypothesis 1e: There is significant effect of age and experience level of investors on investment amount.

The purpose of this study is to analyze the relationship of the demographic factors of stock investors on their average investment amount made per year. This study will be helpful for the readers. Thus this paper tries to overcome the shortcoming literature related with the linkage between demographic factors and investors' investment amount. Also this empirical study will be important to formulate policy recommendation from the point of view of demographic factors and investors' investment amount in Bangladesh.

3. Research Methodology

This study is primary data based involves exploring the effect of demographic factors on investors investment amount. The demographic characteristics such as age, education level, occupation, and experience and income level have been selected and surveyed from different general investors through a structured questionnaire. The

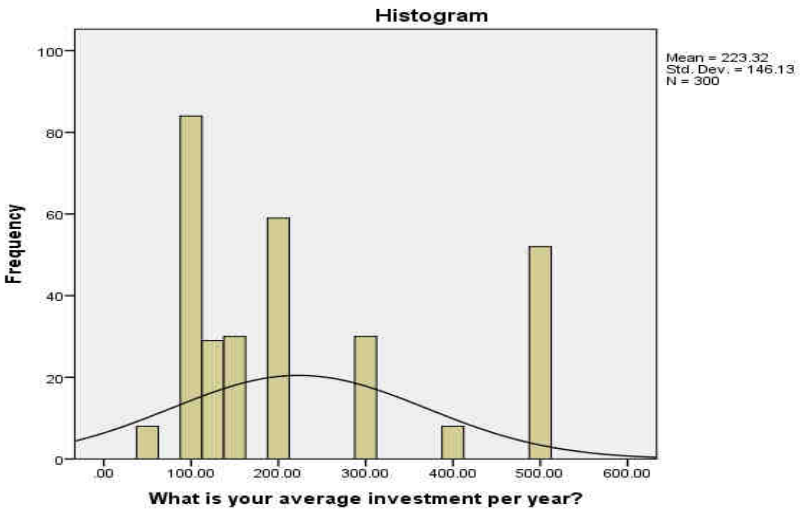
questionnaire had two sections. In the first section, the demographic details with respect to investors' age, occupation, educational Qualification, income group, experience as investor in the stock market were recorded primarily for the classification of investors. The second section of the questionnaire was related to the average amount of investment per year. The total sample consisted of 300 respondents. In this study, investment amount is considered as a dependent variable, while demographic characteristics individually checked as independent factors in relation to investment amount of investors. The empirical model of this research can be observed in table 2. The research employed two-way ANOVA in order to understand if there is any interaction between the two independent demographic variables on the dependent variable investment amount.

4. Results and Discussions

Data presented in Table 01 shows the level of invested amount that on average invested by our respondents of this study within a year. The multiple responses indicate that 28.0% investors keep their average investment per year within 100,000 taka 19.7% investors keep their average investment per year within 200,000 taka, between 125,000 and 130,000 taka investment are made by 5% investors and only 17.3% investors on average invest 500,000 taka or more than 500,000 taka within a year in the stock market (Dhaka stock exchange) of Bangladesh.

Table 01: Frequency Distribution of investment amount per year (in '000)

	'000	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**50.00**	8	2.7	2.7	2.7
	100.00	84	28.0	28.0	30.7
	125.00	15	5.0	5.0	35.7
	130.00	14	4.7	4.7	40.3
	150.00	30	10.0	10.0	50.3
	200.00	59	19.7	19.7	70.0
	300.00	30	10.0	10.0	80.0
	400.00	8	2.7	2.7	82.7
	500.00	52	17.3	17.3	100.0
	Total	300	100.0	100.0	



The test was two-way ANOVA carried out by using SPSS program. In this study the two-way classifications are Occupation and experience, Age and Education, Occupation and Income, Education and Income, Age and Experience.

Table 02: Summary of the results of the effect of Demographic factors and Investment amount using two-way ANOVA.

Source of variation	Sum of Squares	df	Mean Square	F	Sig.
Occupation and Experience					
Occupation	1227830.846	2	613915.423	37.275	.000
Experience	443815.117	2	221907.559	13.474	.000
Occupation * Experience	577166.689	3	192388.896	11.681	.000
Error	4809210.892	292	16469.900		
Total	21345975.000	300			
Age and Education					
Age	123451.558	2	61725.779	3.467	.032
Education	558533.036	3	186177.679	10.457	.000
Age * Education	385288.245	2	192644.123	10.821	.000
Error	5198624.930	292	17803.510		
Total	21345975.000	300			
Occupation and Income					
Occupation	354204.358	2	177102.179	10.481	.000
Income	400351.312	3	133450.437	7.897	.000
Occupation * Income	331362.731	5	66272.546	3.922	.002
Error	4883573.202	289	16898.177		
Total	21345975.000	300			
Education and Income					
Education	494224.343	3	164741.448	10.097	.000
Income	636906.581	3	212302.194	13.012	.000
Education * Income	394916.581	5	78983.316	4.841	.000
Error	4698936.460	288	16315.752		
Total	21345975.000	300			
Age and Experience					
Age	285524.049	2	142762.024	7.876	.000
Experience	376429.664	2	188214.832	10.383	.000
Age * Experience	768691.620	2	384345.810	21.203	.000
Error	5311142.261	293	18126.765		
Total	21345975.000	300			

The statistical test results of sig = 0.00 indicate that the Occupation and Experience have the statistically significant interaction on investment amount with 5% significance level ,thus Hypothesis 1a is **accepted**. It is observed from the table above that there is statistically significant difference in mean investment amount of different occupations (p =.000) and there is statistically significant differences between educational levels (p < .0005) and investment amount as well. So the combined demographic factors occupation and experience do make impact on the investment amount.

The combined demographic factors Age and Education significance value is .000 which is less than .05 threshold that leads to the acceptance of Hypothesis 1b. Further for Age and Education, the calculated value is .032 and .000 respectively which are also less than .05 threshold. So it is found from the analysis investment amount differs significantly according to investors' age and education.

The statistical test results of sig = 0.02 indicate that the Occupation and Income have the statistically significant interaction on investment amount with 5% significance level, thus Hypothesis 1c is **accepted**. It is observed from Table 02 that there is statistically significant differences in mean investment amount of different occupation levels (p = .000) and income levels (p < .0005) as well. So demographic factors occupation and income interaction do make impact on the investment amount.

The statistical test results of sig = 0.00 indicate that the Education and Income have the statistically significant interaction on investment amount with 5% significance level, thus Hypothesis 1d is **accepted**. It is observed from Table 02 that that there is statistically significant difference in mean investment amount of different education levels (p = .000) and income levels (p < .0005) as well. So demographic factors education and income interaction do make impact on the investment amount.

The statistical test results of sig = 0.00 indicate that the Age and Experience have the statistically significant interaction on investment amount with 5% significance level, thus Hypothesis 1e is **accepted**. It is observed from the Table 02 that there is statistically significant difference in mean investment amount of different age levels (p = .000) and experience levels (p < .0005) as well. So demographic factors age and experience interaction do make impact on the investment amount.

5. Conclusion and Recommendation

The purpose of this study was to provide additional empirical evidence to the fact that whether investors with different demographic profiles and with different level of risk tolerance attitude make any differences in their yearly average investment amount. In view of the empirical results pertaining to the impact of demographic characteristics of general investors such as age, education level, occupation, experience and income level on investment amount, this study concludes that the different demographic factors' interaction has a positive effect on yearly average investment amount of general investors. This means the general investors' investment amount influenced by the investors' different income levels, experience levels, job structures, educational backgrounds and age. The empirical results show that not only the interaction of two demographic factors also individual demographic factor of investors has the significant effect on their average investment amount.

This differences among different demographic background investors might be associated with their psychology, perception or other intrinsic factors. Further research needs to consider other factors such as psychological factors for assessing the difference in investment amount. Furthermore, the research should also pay attention to the variables such as financial information, firms' reputation, and personal financial needs to find out the causes of differences in investment amount.

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