

## Investment Decisions of the Individual Investors in the Capital Market of Bangladesh



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**ABSTRACT:** Investment decisions of the individual investors in the capital market are influenced by various factors. Main objective of this study is to find out the influences of the factors on investment decisions of individual investors in the capital market in Bangladesh. A highly structured questionnaire has been used to collect primary data from 384 individual investors who are traded in the Dhaka Stock Exchange (DSE). The study respondents have been selected at a simple random method. Analysis of variance (ANOVA), multiple regression model, graphs, charts and tabular analysis have been used to analyze collected data and to test hypotheses of the study. The results showed that EPS has positive influence ( $\beta=0.0682$ ,  $t=1.2439$  and  $p=0.2143$ , test of hypothesis 2) on investment decisions and rank of EPS is 4 with mean score of 3.8099 and S.D=0.5087 (table 3). It has also found that dividend has positive relationship ( $\beta=0.0590$ ,  $t=1.1054$  and  $p=0.2697$ , test of hypothesis 3) with investment decisions and dividend is ranked 6 with mean score of 3.5755 and S.D=0.5593 (table 3). Accordingly, P/E ratio has a negative influence ( $\beta = -0.0069$ ,  $t=-0.1341$  and  $p=0.8934$ ) on investment decisions of the individual investors. Therefore, this study will be very helpful to the individual investors to make correct investment decisions by analysing EPS, dividend trends and P/E ratio of the company.

**KEYWORDS:** Factors, Influence, Investment Decision, Individual Investor, Capital Market and Bangladesh

### 1. INTRODUCTION

In capital markets shares, bonds and treasury bills are traded. There are two capital market in Bangladesh, i.e. Dhaka Stock Exchange (DSE) and Chittagong Stock Exchange (CSE). Sponsor/Directors, Government, institutes, foreign and individual are the active participants in the capital market but individuals are the majority percent of them. Most of the cases individual investors make wrong investment decisions and become financially losers due to not having financial and investment literacy. Therefore, to make correct investment decisions individual investors also should have adequate knowledge regarding factors of share price which have influence on share price in the capital market. Moreover, maximum individual investors do not contemplate about the influencing factors when they make investment decisions as well as they are not rational investors also. In this research the most influencing factors are analyzed to find out the influences on the investment decisions of the individual investors in the DSE in Bangladesh.

Ippolito (1992) stated that past performance of the funds and money flowing into winning funds quickly is the basis of selection funds by the individual investors rather than the flow out of losing funds. Individual Investors' high expectation and irrational behaviour cause undue increase in market index and ultimately result in great fall in stock market (Haque and Faruquee 2013). Shiller (2000) stated that several investors do not have understanding and data analysis skills. Because of this, investors are more likely to make investment decisions based on information received from objective or scientific sources. Sevil et al. (2007) observed that investors are not always rational and their investment decisions all the time are not objective oriented. They also found that most of the cases investment decisions are not taken based on P/E ratio, EAT, dividend payout ratio because of the prices of indices are also governed by various aspects and factors of human attitude, expectations, emotions and anticipation to name a few. Jamal et al. (2014) defined rational as the analysis of environmental, economic and financial and investors are being considered deciding to invest in any instruments in the capital market. On other hand, irrational is when the investors are making investment decisions based on investment tips/advice from friends, family members, dealers and rumours or by emotions. In another study Muhammad and Abdullah (2009) defined that rational behaviour is called when investors analyse and consider all

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available financial, economical and environmental information before taking investment decisions in the capital market. On the other hand, irrational is called when investors take investment decisions by considering investment tips and advice from outsiders, emotions, assumptions and rumors.

Raiffa and Raiffa (1968), Kahneman and Tversky (1979) found that traditional financial models are not capable of making clear and forecast financial decisions and are unsuccessful in elucidating some phenomena that influence investors' investment decision. They also found that emotional issues move about individual investors in taking investment decisions which is the indication of inefficient markets. Sarbabidya and Saha (2018) found that risk factors, stockholder's whimsical attitude, earnings per share (EPS), political instability and uncontrollable macroeconomic factors have damaging and demotivating the investors of the stock market in Bangladesh unless effective measures will be taken to correct the same. Khan et al. (2015) found that motivational factors such as historical data, industry attractiveness, expected dividends, financial indicators, loss minimization and chances of capital gain have a great influence on making investment decisions. Hossain and Siddiqua (2022) found that the most influential emotional dimensions are risk perception and risk aversions which have influences on individual investors' investment decisions. Hilbert (2012) demonstrated that behavioral bias such as overconfidence, herding and reinforcement bias influence investment decisions more as compared to their institutional counterparts, whereas Chaudhary (2013) exposed that behavioral finance elucidate individual investors' irrational financial decisions and loss aversions, anchoring, overconfidence, herd behavior, over and under reaction lead to illogical financial decisions. Previous gains, investment skills and overconfidence regarding stock prices and unnecessary transactions eventually direct them to make wrong investment decisions (Barber and Odean 2000).

Muhammad and Abdullah (2009) stated that individual investors when making investment decisions consider all available economic information and simultaneously pursue recommendations of brokers, tips from relatives and friends. Hossain and Nasrin (2012) found that company reputation and accounting information have influence on selection of shares in the Stock Exchange in Bangladesh.

Olsen (1998) found that some individual investors take investment based on advice of outsiders and friends rather than doing fundamental analysis on a particular stock, therefore they become a loser from their investment. In another study Fares and Khamis (2011) found that good financial knowledge is very important for individual investors which could assist them to select the best investment alternatives. Mansor and Lim (1995) found that no more than 32% of individual investors conducted fundamental analysis prior to taking investment decisions.

Moreover, it has found that 81% individual investors agreed that EPS has substantial positive influence on investment decisions (graph 8). It has also found that 75% individual investors (graph 12) take investment decisions based on cash and stock dividends. Therefore, this study will be very functional to the individual investors to select best investment alternatives in the capital market in Bangladesh. Other participants in the capital market, such as; governments, institutes and foreign investors will also be benefited from this research.

This research paper has been divided into several segments. In the first segment the relevant literature has been analysed to find out the research gap. In the second segment objectives, hypothesis and research methodology have been developed relating to this study. The third segment described collected data by using tables, graphs, pie charts, column charts, doughnut and influencing factors of investment decisions of the individual investors have been identified based on previous study. In the fourth segment of the paper, tests of hypotheses have been done by using Microsoft Excel 2007 and discussion of results. In the last segment findings of the study and conclusion have been highlighted.

## 2. LITERATURE REVIEW

Many researchers have conducted research on factors that influence the investment decisions of the individual investors in the capital market. Therefore, the most influencing factors of the investment decision have been identified from review of the previous literature as follows:

Merikas et al. (2004) recognised five essential determinants which have influence on investment decision in the capital market i.e. personal financial needs, accounting information, subjective/personal, advocate recommendation, neutral information. Williams (2007) showed that investors took company environmental and social behavior into consideration in making investment choices, which is actually reflected through the stockholders' attitude toward the company from different sides of company performance. The findings of Usmani (2012) suggested that individual investors' take stock purchase decisions based on wealth maximization criterion along with previous and present performance of the stock rather relying on a single approach. Farzana et al. (2012) found that gender and age has no effect on buying shares but profession and educational qualification are very significant determinants for investing, considering and selecting stocks in the capital market. Sarbabidya and Saha (2018) found that the whimsical attitude of the shareholders, risk earnings per share (EPS), political unrest and uncontrollable macroeconomic factors discourage investment of individual investors in the capital market. Hossain and Siddiqua (2022) found that behavioural biases are important

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parameters for investment analysis and portfolio management which should be taken into consideration while making investment decisions in the stock market. Shleifer (2000) found that market information is an important factor which has considerable influence on investment behaviour of the individual investors. Waweru et al. (2008) showed that sometimes changes of stock prices have an effect on investment behaviour of the investor.

Hilbert (2012) and Chaudhary (2013) found cognitive dissonance, panic, greediness, psychological accounting, anchoring and heuristics have an impact on individual investors' investment decisions. The most important factors which have influence on the decisions of individual investors are net asset value, reputation of the concerned company, accounting information, trading opportunity, publicity, ownership structure and personal financial needs respectively (Hossain and Nasrin 2012). Bennet and Selvam (2011) found that risk, economic strength, media focus on the stock market, political stability and government policy towards business have a very high influence on the approach of retail investors in the direction of investing in equity stocks.

Capital structure, average pricing method, political and media coverage, faith in luck, financial knowledge and trend analysis are important influencing factors which affect investment decisions in the capital market (Kadariya 2012). Sheikh et al. (2011) found that gender, age, marital status, income level and educational qualification affect investment behaviour and decision making. Market, hedging and economic factors have a bigger impact on taking investment decisions of the investors (Khan et al. 2015). Akhter and Ahmed (2013) found past performance, advice of brokers and friends, and news of the media has a significance influence on investment decisions. Sochi (2018) found overconfidence, gambler's fallacy, representativeness, anchoring, loss aversion, regret aversion and mental accounting have influence on selecting stocks. Baghdadabad et al. (2011) conducted a study which revealed that financial statements, accounting information, stock price, public information, profitability, volume of stock, consultation with anybody, discounted cash-flow techniques, government policies, risk and economic variables all have influence on stock selection by small investors.

Ngoc (2013) found that herding, market, prospect, overconfidence, gambler's fallacy and anchoring-ability bias have impact on individual investors' decision. Jamal et al. (2014) found that company background, information and declaration, and capability to carry out fundamental analysis profoundly influenced investors to make good investment decisions and in contrast emotions and frame of references do not affect investment decision. Kimeu et al. (2016) conducted a study in the Nairobi Securities Exchange and found that investment decisions are positively influenced by behavioral factors including herding, prospects and heuristic factors and rationality. Anum and Ameer (2017) found that prospect, heuristic, market and herding factors highly influenced individual investors' investment decisions making in the Pakistani Stock Markets. Chowdhury and Priyo (2020) found investors' make investment decisions by considering rumours, information, advice from brokers, family and friends, and past investment experience. They also found that trustworthiness is the key investment factor.

Pratiwi and Leon (2019) found that optimism has a significant positive effect on investment decisions and overconfidence does not have a significant influence on investment decisions. Phan and Zhou (2014) found that four psychological factors (overconfidence, excessive optimism, psychology of risk and herd behavior) do have significant impact on the individuals' attitude towards investment. Ahmed (2017) found in the study earnings, dividend paid in the preceding years, marketability of the stock, performance of the financial statements, expected dividends, previous performance of the stock, suggestion of brokers and get quick rich are the most influencing factors on the other hand, affiliation of the political party, religious belief, ethics of the company, environmental and opinion of the family members are the least influencing factors in the decision making. He also found that broker recommendations unexpectedly highly influence Pakistani investors in making their investment decision.

### Research Gap

To date however, so many researches have been conducted all over the world relating to this study. Moreover, all the previous researches have been focused on various factors; such as financial literacy, accounting information, openness to experience, classical wealth-maximization, personal financial needs, present stock performance, whimsical attitude, market information, greed, fear, heuristic and anchoring, political stability and government policy, hedging, advice of brokers, friends and family, past performance, news of media, overconfidence, representativeness, gambler's fallacy, loss aversion, past trading volume of stocks, calculation of risk and economic variable, herding, rumours, speculations, random picking stocks and rationality on the individual investors' decision making in the capital market but very few researches would have carry out to find influences of EPS, dividends and price earnings (P/E) ratio on the investment decision. This study intended to find out the influences of the EPS, dividends and P/E ratio on the individual investors' decisions making in the Dhaka Stock Exchange (DSE) in Bangladesh.

### 3. OBJECTIVES OF THE STUDY

Main objective of the study is to find out the influences of the factors on the investment decisions of individual investors' in the capital market in Bangladesh. Some supporting objectives are:

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1. To find out the influence of EPS on the investment decisions of the individual investors.
2. To find out the impact of dividends on the investment decisions of the individual investors.
3. To determine the influence of the price earnings (P/E) ratio on the investment decisions of the individual investors.
4. To provide recommendations and guidelines for taking correct investment decisions in the capital market.

### 4. HYPOTHESES OF THE STUDY

#### Hypothesis 1:

H<sub>0</sub>: Influence of the factors on investment decisions of the individual investors in the capital market is the same.

H<sub>a</sub>: Influence of the factors on investment decisions of the individual investors in the capital market is not the same.

#### Hypothesis 2:

H<sub>0</sub>: EPS has positive and significant influence on investment decisions of the individual investors in the capital market.

H<sub>a</sub>: EPS has no positive and significant influence on investment decisions of the individual investors in the capital market.

#### Hypothesis 3:

H<sub>0</sub>: Dividend has positive and significant influence on investment decisions of the individual investors in the capital market.

H<sub>a</sub>: Dividend has no positive and significant influence on investment decisions of the individual investors in the capital market.

#### Hypothesis 4:

H<sub>0</sub>: P/E ratio has negative and significant influence on investment decisions of the individual investors in the capital market.

H<sub>a</sub>: P/E ratio has positive and significant influence on investment decisions of the individual investors in the capital market.

### 5. RESEARCH METHODOLOGY

#### 5.1 Data Collection:

Main objective of this research is to find out the influences of the factors on investment decisions of individual investors in the Dhaka Stock Exchange (DSE). Data has been collected through a structured questionnaire and a mixed method is used in the study. To achieve the study objectives a highly structured questionnaire has been prepared and distributed among the individual investors residing in the Dhaka North City Corporation, Dhaka South City Corporation and Gazipur City Corporation who are trading in the Dhaka Stock Exchange (DSE) Limited. The study respondents have been selected at a simple random method. There are three parts of the questionnaire, i.e. (a) Demographic information, (b) Savings and investment related information and (c) Factors relating to investment decisions of the individual investors. However, 384 questionnaires were distributed among the individual investors i.e. teachers, bankers, doctors, engineers, government and non-government employees, executives, financial managers, officers, housewives, students and entrepreneurs' age range from 18 onwards, but the ethnicity of these people can be from any religion, cast or culture and requested all the respondents for collecting data directly as majority are found in the areas, such as, brokerage houses, DSE areas, ICB and other offices. Thereafter, all the disseminated questionnaires have been returned by the respondents after giving responses.

#### 5.2 Sample Size

The capital markets of Bangladesh consist of Chittagong Stock Exchange (CSE) and Dhaka Stock Exchange (DSE). The individual investors who are trading in the Dhaka Stock Exchange (DSE) Limited and residing in the Dhaka North City Corporation, Dhaka South City Corporation and Gazipur City Corporation in Bangladesh are the population of this study and the population in an infinite type. The sample size of the study is 384 individual investors who are sitting on the brokerage houses residing in Dhaka North City Corporation, Dhaka South City Corporation and Gazipur City Corporation in Bangladesh. To conduct this study primary data were collected from the 384 individual investors who trade in the Dhaka Stock Exchange in Bangladesh. All these 384 individual investors were selected at simple random methods. The respondents' includes-bankers, teachers, doctors, engineers, private and government employees, executives, financial managers, officers, housewives, students and entrepreneurs' age range from 18 onwards both male and female.

#### 5.3. Questionnaire

In the study primary data has been collected by conducting a survey through a highly structured questionnaire from individual investors' in the Dhaka Stock Exchange. There are three parts of the questionnaire, i.e. (a) Demographic information, (b) Savings and investment related information and (c) Factors relating to investment decisions of the individual investors. Moreover,

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questionnaire items were selected based on literature review and discussion with individuals and traders of brokerage houses. Five point likert scales was used in formatting the factors relating to the investment decision of the individual investors in the questionnaire ranging from '5' denoted as strongly agree, '4' denoted as agree, '3' as neutral, '2' as disagree and '1' denoted as strongly disagree.

### 5.4 Statistical Tools and Techniques Employed

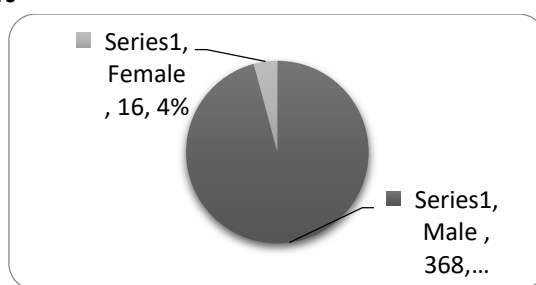
The collected data have been analyzed by using various descriptive statistics such as mean, standard deviation, frequency or weight, percentages, statistical graphs, charts, tables, analysis of variance (ANOVA) and multiple regression model. Moreover, statistical graphs, charts and tables were also used to analyze demographic information, savings and investment related information and to indicate overall responses relating to investment decisions of the individual investors in the capital markets. In addition, ANOVA and multiple regression models were used to test hypotheses of the study and to find out influences of factors on the investment decisions of the individual investors' in the Dhaka Stock Exchange in Bangladesh.

## 6. ANALYSIS AND FINDINGS

### 6.1 Demographic Information

Demographic information contains age, gender, level of education, profession and daily working hours at organization of the respondents. In addition, graphs, charts and tables have been used to analyze demographic information of the respondents.

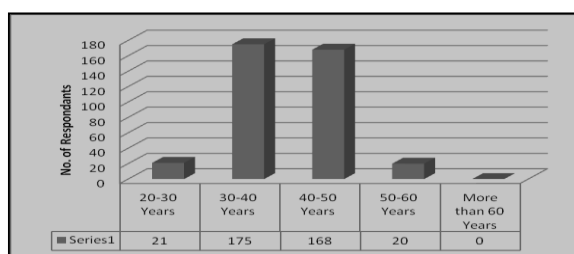
**Graph 1: Gender of Individual Investors**



Source: Based on Primary Data

Graph 1 shows the gender of the individual investors in the Dhaka Stock Exchange. Out of 384 respondents, 368 or 96% respondents were male and only 16 or 4% respondents were female. Moreover, it has found that 96% male investors were active participants in the Dhaka Stock Exchange (DSE) in Bangladesh.

**Graph 2: Age of Individual Investors**

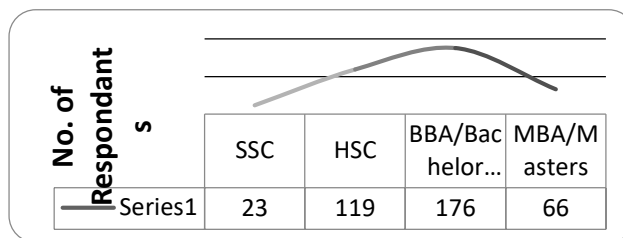


Source: Based on Primary Data

Graph 2 indicates the age of the individual investors in the DSE and the vertical axis of the graph displays the number of respondents and the horizontal axis denotes age of the individual investors. Moreover, out of 384 individual investors' age of 21 respondents are 20-30 years, 175 respondents' ages are 30-40 years and 168 respondents' ages are 40-50 years respectively. In contrast, only 20 and 0 respondents' ages are 50-60 years and more than 60 years respectively. Moreover, it has found that  $(175+168)=343$  or 89.32% of individual investors' ages are from 30-50 years in the DSE in Bangladesh.

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Graph 3: Level of Education



Source: Based on Primary Data

Graph 3 shows the level of education of the individual investors. The vertical axis of the above graph indicates number of respondents and horizontal axis denotes educational qualification of the individual investors'. Out of 384 respondents 23 respondents completed SSC, 119 respondents completed HSC, 176 respondents completed BBA/Bachelor (Honors)/Diploma and 66 respondents completed MBA/Masters degree. In conclusion, it has found that  $(176+66)=242$  or 63.02% of individual investors are higher educated and  $(23+119)=142$  or 38.98% respondents didn't complete graduation.

Table 1: Profession of the Individual Investors

Total Respondents	384	100%
Government employee	112	29%
Teacher (Public/Private University)	90	23%
Doctor	10	3%
Engineer	15	4%
Banker	132	34%
Businessman	15	4%
Others	10	3%

Source: Filed Survey

Table 1 represents the profession of the individual investors'. It has found that 112 or 29% individual investors are government employees, 90 or 23% are teachers (Public/Private University) and 132 or 34% are bankers. In contrast, individual investors participants in DSE are 10 or 3%, 15 or 4%, 15 or 4% and 10 or 4% are doctors, engineers, businessmen and others respectively. Moreover, based on the above table it has found that 86% of individual investors in the DSE are government employees, teachers and bankers in the DSE.

### 6.2 Savings and Investment Related Information

This section consisted of information about investors' opinions regarding their savings and investment in the capital market. Some questions were provided in the questionnaire like gross salary, savings from the income, information about the all company's stock, investment horizon, short term and long term goal from investment and some other questions.

Table 2: Gross Salary of the Individual Investors

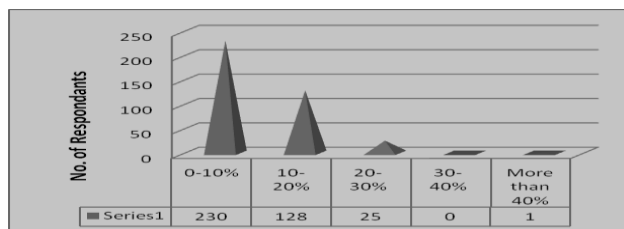
Total Respondents	384	100%
Less than Tk. 20,000	73	19%
Tk. 20,000–40,000	242	63%
Tk. 40,000–60,000	62	16%
Tk. 60,000–80,000	2	1%
Tk. 80,000–1,00,000	4	1%
Tk. More than 1,00,000	1	0%

Source: Filed Survey

Table 2 represents the gross monthly salary of the individual investors'. It has found that out of 384 respondents 242 or 63% investors gross monthly salary are Tk.20,000-40,000 and on the contrary, only 1 investor monthly salary is more than Tk. 1,00,000. Moreover, the above table also represents 73 or 19%, 62 or 16%, 2 or 1% and 4 or 2% of individual investors' monthly salaries are from less than–Tk. 20,000, Tk. 40,000–60,000, Tk. 60,000–80,000 and Tk. 80,000–1,00,000 respectively.

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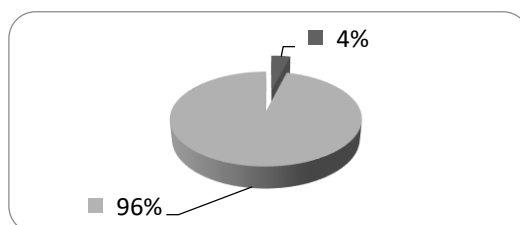
**Graph 4: Savings from Income of the Individual Investors**



Source: Filed Survey

Graph 4 represents savings from income of the individual investors. The vertical axis of the above graph indicates the number of respondents and horizontal axis indicates savings percentage of the individual investors. Moreover, out of 384 respondents 230 individual investors are saved 0-10% from their income and only 1 investor is saved more than 40% from the income. It also found that 128 and 25 investors saved 10-20% and 20%-30% respectively.

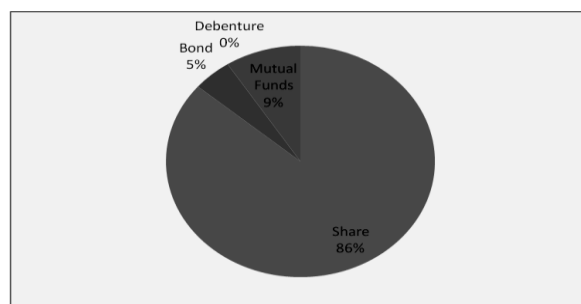
**Graph 5: Investment from Savings**



Source: Filed Survey

Graph 5 shows that 96% individual investors invested in the capital market from their savings and only 4% investors are not invested from their savings in the capital market.

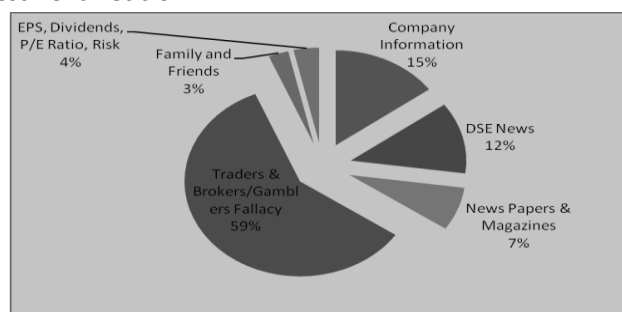
**Graph 6: Sector Wise Investment of Individual Investors**



Source: Filed Survey

Graph 5 shows that 86% of individual investors prefer to invest in shares and only 9% and 5% respondents invested in mutual funds and bonds respectively. Moreover, most of the individual investors choose shares for investment in the capital market and only 14% investors make investment in mutual funds and in bonds in the capital market in Bangladesh.

**Graph 7: Information Seek for Investment Decision**



Source: Filed Survey

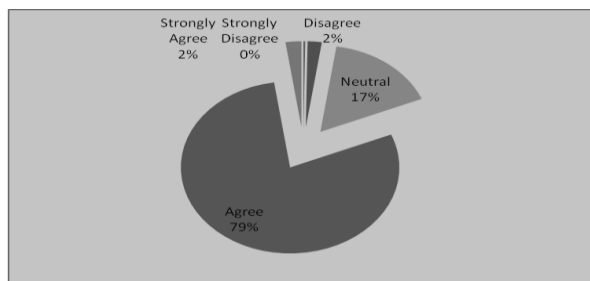
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Graph 7 shows that 59% individual investors make investment decisions based on traders and brokers/gambler fallacy, 15%, 12% and 7% respondents take investment decisions after analyzing company information, DSE news and newspapers and magazines respectively. In contrast, only 4% individual investors make investment decisions by analysing EPS, dividend, P/E ratio and risk and only 3% respondents depend on family and friends to make investment decisions. In conclusion, it has been found that traders and brokers and gamblers have significant influence on the investment decision of the individual investors in the capital market in Bangladesh.

### 6.3 Factors Influences Investment Decisions

This part of the questionnaire indicates the factors affecting individual investor's behavior of DSE by using some measurement criteria which is analyzed through statistical tools.

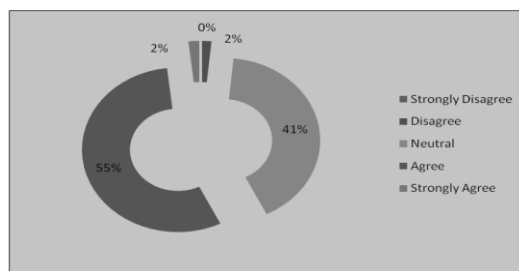
#### Graph 8: Earnings Per Share (EPS)



Source: Filed Survey

Graph 8 shows that 79% individual investors agree and 2% individual investors strongly agree that EPS has influence on investment decisions. In contrast, only 17% and 2% individual investors are neutral and disagree respectively regarding the influence of EPS on investment decisions. Moreover, from analysis of the above pie chart, found 81% individual investors believe that EPS has a substantial positive influence on investment decisions in the capital market.

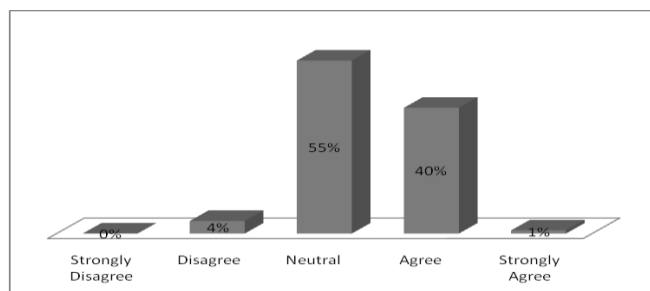
#### Graph 9: Dividend



Source: Filed Survey

Graph 9 shows that 55% and 2% individual investors are agreed and strongly agree that dividend has influence on investment decision and on the other hand, 41%, 2% and 0% individual investors are neutral, disagreed and strongly disagreed that dividend has influence on investment decision respectively. In conclusion, from the analysis of the above doughnut it can be recommended that 57% individual investors believe that dividends have significant influence on investment decisions.

#### Graph 10: P/E Ratio



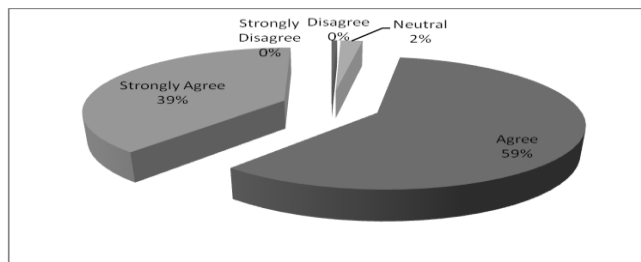
Source: Filed Survey



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Graph 10 shows that 40% and 1% individual investors agreed and strongly agreed respectively that the P/E ratio has influence and they consider the P/E ratio when they make investment decisions. On the other hand, 55% and 4% respondents are neutral and disagree respectively and not considered P/E ratio while they are making investment decisions. In conclude, it has been found from the analysis of the above column chart that maximum, i.e. 59% individual investors were not considered P/E ratio when they take investment decisions in the capital market.

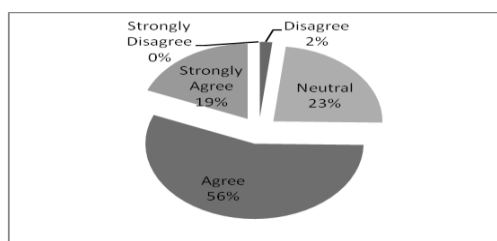
**Graph 11: Risk/Sensitivity**



Source: Filed Survey

Graph 11 indicates that 59% and 39% individual investors agree and strongly agree respectively that the capital market is highly sensitive/risky and it has a huge influence on investment decisions. On the other hand, only 2% of individual investors are neutral regarding the influence of risk on investment decisions. Therefore, based on the analysis of the above pie chart it has found that 98% individual investors believe that the capital market is a highly risky market and it has immense influence on making investment decisions in the capital market in Bangladesh.

**Graph 12: Cash and Stock Dividend**



Source: Filed Survey

Graph 12 represents that 56% and 19% individual investors agreed and strongly agreed respectively that cash and stock dividend has influence on investment decisions. In contrast, 23% and 2% respondents are neutral and disagree that cash and stock dividends have influence on investment decisions. Moreover, it has been found from the above pie chart that 75% individual investors think cash and stock dividends have an important influence on investment decisions in the capital market.

### 6.4 Factors Influencing Investment Decision

Survey findings with regard to find out the influence of factors on investment decision of the individual investors in the capital market shown in the following table:

**Table 3: Influence of Factors on Investment Decision of the Individual Investors**

Influencing Factors of the Investment Decision	Count	Mean	Standard Deviation	Variance	Range	Min.	Max.	Rank
EPS	384	3.8099	0.5087	0.2588	4	1	5	4
Dividend	384	3.5755	0.5593	0.3128	3	2	5	6
P/E Ratio	384	3.3776	0.5876	0.3453	3	2	5	8
Risk	384	4.3490	0.5763	0.3322	4	1	5	1
Authorized Capital	384	3.1094	0.6767	0.4580	3	2	5	12
Paid Up Capital	384	3.0182	1.6485	2.7177	31	2	33	13
Cash Dividend	384	3.5417	0.5343	0.2855	2	2	4	7
Stock Dividend	384	3.2344	0.5381	0.2896	3	2	5	10

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No Dividend	384	3.3542	0.5404	0.2920	3	2	5	9
Reserve & Surplus	384	2.8464	0.6462	0.4176	2	2	4	16
Current Market Price	384	3.9063	0.3979	0.1583	3	2	5	2
NAV Per Share	384	3.5911	0.5754	0.3311	3	2	5	5
Dividend Yield	384	3.0130	0.5891	0.3471	2	2	4	14
Profit from Continuing Operations(PCO)	384	3.8229	0.4792	0.2297	3	2	5	3
Total Comprehensive Income From The Year(TCI)	384	3.1536	0.6215	0.3863	2	2	4	11
Holding of Shares of Sponsors/Directors	384	2.8620	0.6125	0.3752	3	2	5	15
Holding of Shares of Others(Govt./Institute/Foreign)	384	2.8021	0.547862	0.3002	3	2	5	17
Overall Investment Decision	384	3.6094	0.5345	0.2857	3	2	5	5

Source: Filed Survey

Table 3 represents that the mean of overall investment decision of the individual investors is 3.6094; which is greater than neutral which is denoted by '3' with respect to all aspects. Moreover, results indicate that overall investment decisions of the individual investors are influenced by the factors as the mean score is 3.6094 which is greater than '3' but less than '4'. Furthermore, the mean score was found less than or near about similar to '3' of holding of shares of others(Govt./Institute/Foreign), reserve & surplus, holding of shares of sponsors/directors, paid up capital, dividend yield, authorized capital, total comprehensive income from the year(TCI), stock dividend. Therefore, these factors have no influences on the investment decision of the individual investors in the capital markets.

Moreover, the mean score ranking is set against various factors of the investment decision with a view to know influences on the investment decision of the individual investors in the capital market. It has found from table 3 that risk is ranked 1 because its mean score is 4.3490 which is the largest than the mean of other factors and represents that risk is the most influencing factor of the investment decision. In addition to, current market price, and profit from continuing operations (PCO) and EPS are ranked 2, 3 and 4 with mean of 3.9063, 3.8229 and 3.8099 respectively. Since, mean values of these three factors are greater than the mean value of the overall investment decision (3.6094) therefore they have influence on investment decisions of the individual investors in the capital market. On the other hand, NAV per share, dividend, cash dividend, P/E ratio, and no dividend are ranked 5, 6, 7, 8 and 9 with mean value of 3.5911, 3.5755, 3.5417, 3.3776, and 3.3542 respectively. Since the mean values of these factors are less than the value of the overall investment decision but greater than neutral (i.e. 3) therefore it indicates that these factors have low impact on the investment decision of individual investors in the capital market. In conclusion, on the basis of the responses of the individual investors it can be said that all the factors have positive or negative weight on investment decisions of the individual investors' in the DSE of Bangladesh.

### 6.5 Test of Hypotheses:

#### Hypothesis 1

H<sub>0</sub>: Influence of the factors on investment decisions of the individual investors in the capital market is the same.

H<sub>a</sub>: Influence of the factors on investment decisions of the individual investors in the capital market is not the same.

Table 4: ANOVA

Source of Variation	Sum of Square (SS)	df	Mean of Square (MS)	Calculated	Probability Value	F-critical
Between Groups	1173.6367	17	69.0374	152.9866	0	1.6242
Within Groups	3111.0182	6894	0.4512			
Total	4284.6549	6911				

Source: Filed Survey

Table 4 represents a calculated F value of 152.9866 which is much greater than F-critical value of 1.6242 simultaneously of the p-value of 0 at 5% significance level. Thus, on the basis of the results of ANOVA null hypothesis (H<sub>0</sub>) must be rejected and alternative

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hypothesis ( $H_a$ ) is accepted. Moreover, it is supposed that the influences of the factors on investment decisions of the individual investors in the capital market of Bangladesh are not the same.

### Multiple Regression Model and Analysis of Results

The multiple regression model has developed below based on three independent variables (EPS, Dividend and P/E Ratio) and dependent variable is investment decision:

$$I_{it} = \alpha_i + \beta_1 E_{it} + \beta_2 D_{it} + \beta_3 PE_{it} + \mu_{it}$$

Where,  $\alpha_i$  is a constant and  $\mu_{it}$  is the random disturbance error term with appropriate properties. In the linear multiple regression model explanatory variables are  $E_{it}$  = EPS,  $D_{it}$  = Dividend,  $PE_{it}$  = P/E Ratio, and dependent variable is  $I_{it}$  = investment decision and  $\beta_1$ ,  $\beta_2$ , and  $\beta_3$  are the regression coefficient of the explanatory variables.

**Table 5: Results of Multiple Regression Analysis**

Items	Path Coefficient ( $\beta$ )	t-value	Significance level (P)
Intercept = 1.1507			
H <sub>2</sub> =EPS	0.0682	1.2439	0.2143
H <sub>3</sub> =Dividend	0.0590	1.1054	0.2697
H <sub>4</sub> =P/E Ratio	-0.0069	-0.1341	0.8934
Determination of Coefficient ( $R^2$ ) = 0.5693 F = 9.04258, Significance (F) = 5.90984E-18, N=384	Adjusted $R^2$ = 0.4395		

Source: Filed Survey

The table 5 represents that the overall F statistic is statistically significant at the 5.90984E-18 or 0 levels. The multiple regression model has a coefficient of determination ( $R^2$ )=0.5693; which explains 56.93% variance in investment decision with adjusted  $R^2$  of 43.95% in the DSE in Bangladesh. The results of multiple regression as shown in table 5 represents that EPS is positively related with the investment decision ( $\beta$ =0.0682,  $t$ =1.2439 and  $p$ =0.2143). Accordingly, H<sub>2</sub> which states that there is a positive relationship between EPS and investment decision of the individual investors and is not significant at 0.05 level of significance. Therefore, H<sub>2</sub> is rejected. On the other hand, the dividend has a positive relationship with the investment decision of the individual investors ( $\beta$ =0.0590,  $t$ =1.1054 and  $p$ =0.2697) but not significant at 0.05 significance level. Accordingly, H<sub>3</sub> states that there is a positive relationship between dividend and investment decision of the individual investors in the DSE but not supported at 0.05 significance level. Therefore, H<sub>3</sub> is rejected. In respect to H<sub>4</sub> which states that there is a negative relationship between P/E ratio and investment decision of the individual investors also rejected at 0.05 level of significance ( $\beta$  =-0.0069,  $t$ =-0.1341 and  $p$ =0.8934). Moreover, results of multiple regressions indicate that EPS and dividend has positive relationship with the investment decision and P/E ratio has negative relationship with investment decision of the individual investors in the DSE of Bangladesh but all the hypotheses are not significant at 0.05 level of significance.

## 7. DISCUSSION OF RESULTS

Main objective of this study is to find out the influences of the factors on the investment decisions of individual investors in the capital market in Bangladesh. To find out the influences of factors on investment decisions some factors have been measured (i.e. EPS, dividends and P/E ratio). To achieve the study objectives four hypotheses have been developed and tested by using ANOVA and multiple regression model. ANOVA has been used to test hypothesis H<sub>1</sub> and based on the results of ANOVA it has found that the influences of the factors on investment decisions of the individual investors in the capital market are not the same.

Multiple regression analysis has been conducted to test hypotheses H<sub>2</sub>, H<sub>3</sub> and H<sub>4</sub>, and results indicate that coefficient of determination ( $R^2$ )=56.93% which indicates that factors have positive influence on investment decisions of the individual investors in the capital market. Moreover, according to H<sub>2</sub>, EPS has a positive influence on investment decisions of the individual investor at 0.05 level of significance. According to H<sub>3</sub>, dividend has a positive influence on investment decisions of the individual investors but is not significant at 0.05 significance level. Akhter et al. (2012) found that the majority of individual investors indicate solid preference for cash dividend. In case the corporation does not have sufficient cash to pay a cash dividend, investors still have a solid desire to get a stock dividend. They indicate a powerful desire for cash or stock dividend even if a corporation has to give a dividend by borrowing cash. At the end, as per H<sub>4</sub>, P/E ratio has a negative influence on investment decisions of the individual investor and is not significant at 0.05 level of significance. In conclusion, based on the above analysis of the results, it can be said

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that EPS and dividend has positive influence on the investment decision and P/E ratio has negative influence on the investment decision of the individual investor in the capital market of Bangladesh.

### 8. FINDINGS OF THE STUDY

On the basis of the previous analysis, this study found the following influences of the EPS, dividend and P/E ratio on investment decisions of the individual investor in the capital market:

- (i). From the results of ANOVA of the test of hypothesis ( $H_1$ ) found that influences of the factors on investment decisions of the individual investors are not the same.
- (ii). In addition, results of multiple regression (test of hypothesis 2) showed that EPS has positive influence ( $\beta=0.0682$ ,  $t=1.2439$  and  $p=0.2143$ ) on the investment decision as well as from the table 3, it has found that ranked of EPS is 4 with mean score of 3.8099 and  $S.D=0.5087$ . It has also found from graph 8 that 81% individual investors agreed that EPS has substantial positive influence on investment decisions in the capital market.
- (iii). Furthermore, also evident from the results of multiple regression (test of hypothesis 3) that dividend has positive influence ( $\beta=0.0590$ ,  $t=1.1054$  and  $p=0.2697$ ) on the investment decision of the individual investors and from the table 3 found that dividend is ranked 6 with mean score 3.5755 and  $S.D=0.5593$ . It has also found from graph 12 that 75% individual investors take investment decisions based on cash and stock dividends.
- (iv). Accordingly, P/E ratio has a negative influence ( $\beta =-0.0069$ ,  $t=-0.1341$  and  $p=0.8934$ ) on the investment decision of the individual investors.
- (v). Moreover, from table 3 it has found that risk and current market price are the most influencing factors as ranked 1 with mean score 4.3490 ,  $S.D = 0.5763$  and ranked 2 with mean score=3.9063 and  $S.D=0.3979$  respectively. In addition, it also found from graph 7 that 59% individual investors take investment decisions based on traders and brokers/gambler fallacy as well as from graph 11 it has found that 98% individual investors consider that capital market is highly risky market and it has a massive influence on making investment decisions.

### 9. CONCLUSION

Individual investors are one of the most important participants in the capital markets in Bangladesh. Investment decisions of the individual investors are influenced by many factors. Since, this study has been conducted based on primary data. Therefore, a highly structured questionnaire has been used to collect primary data from individual investors of the brokerage houses which are located in the Dhaka North City Corporation and Dhaka South City Corporation in Bangladesh to fulfill desired objectives. Moreover, it has found that EPS and dividend have positive influence on investment decisions whereas P/E ratio has negative influence on investment decisions of the individual investors in the capital market. For the policy makers and for the individual investors, it is a very useful study as they can identify the influencing factors and their influences on the investment decision in the capital market. Since most of the participants in the capital market are individual investors they should make investment decisions by analysing EPS, dividend trends of the company, P/E ratio, risk and current market price of the company. In addition, individual investors shouldn't take investment decisions based on traders' and brokers' information, gamblers' fallacy and there would be big chances of facing losses. Therefore, Policy makers should arrange training workshops and seminars inviting individual investors to enhance knowledge of fundamental and technical analysis as well as to increase financial and investment literacy to make them rational investors in the capital market. Other participants in the capital market, such as; governments, institutes, foreign will also be benefited from this study to make correct investment decisions in the capital market of Bangladesh.

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