CHAPTER V
FINDINGS, CONCLUSIONS AND SUGGESTIONS
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The aim of investigation was to find out the financial planning practices, portfolio selection and investment decision enablers adopted by the investors, financial product and planning awareness amongst the selected investors, the association of financial planning practices and socio economic characteristics. The chapter 4 and 5 gives detail description on data analysis and interpretations. The present chapter deals with findings, conclusions and suggestions based on the analysis of data. The findings and conclusions are classified into five parts.

1. Key Sample Characteristics
2. Investment Pattern and factors affecting to stay invested or trade
3. Classification and correlation of factors affecting investment behavior.

5.1 KEY SAMPLE CHARACTERISTICS

5.1.1 Age
A histogram of age is plotted which shows the mean age of participants 45 years and standard deviation of 8.2 years. Majority of the respondents are in the age bracket of 40-50 years.

5.1.2 Gender
It is observed that 80% of sample respondents consisted of males and 20% of females, thus the proportion of male to female are in the ratio of 4:1 again underlying the fact that most of the investment decisions or equity investors are males rather than females. Male dominance is seen in the above sample as relevant in our social set up where male dominance is seen in financial decision making, income generation and other household decision making.
5.1.3 Marital Status

It is observed that around 79.62% of sampled investors are married. The percentage of unmarried investors is nearly 20%. This may be due to the fact that serious investing in equity and savings may be thought seriously by respondent after marriage considering various liabilities in future.

5.1.4 Education

Education is one of the factors which may affect the income level as well as investment decision making process. It can be seen that secondary school educated investors are not included in the sample. The highest number of respondents is having post graduate qualification which is 83.33%, followed by graduate respondents (6.22%) respectively. The probable reason of most of the respondents being post graduate may be due to the fact that the responses were solicited from the contacts of the researcher who are associated with postgraduate course such as Masters in Business Administration and Master of Commerce across the country.

5.1.5 Occupation

As occupation is closely associated with income of an individual which ultimately decides the investment behavior is a useful determinant.

It can be seen that occupation of 67% respondents is private sector because the present data is collected from respondents having post graduate qualification. The respondents in the government service are 4.01% and those performing business is 26.70%. From table 5.06 it can be concluded that 71% respondents are either from private sector or government sectors thus underlying the fact that majority of respondents are from organized sectors.

5.1.6 Family Type

Family type is one of the important factors that may affect income, expenditure, responsibilities and scope for investment. It can be observed that there are 63.3%
respondents from nuclear family whereas 36.6% respondents are from joint families. It means that in general in society nuclear families are comparatively larger in number.

5.1.7 Investment in Stock Market

A simple dichotomous question probing the participation of investor in stock market or equity market is inquired. Those respondents replying in negative that is saying that they do not participate or invest in equity were requested to skip to last question as further questions probing the behavior would be irrelevant. Moreover those replying in negative were further probed regarding their apathy and lack of interest in stock market participation.

It can be observed that 77% of respondents replied in positive about the participation in stock market. Moreover the reason for such overwhelming response may be due to the fact that the majority of respondents were post graduates employed in private and government sectors.

5.1.8 Daily Trading in stock market

It can be observed that the majority of the investors or participants stated that they do not trade daily in the stock market. Moreover, this is in allegiance to perceived participation of investors in the stock market. The response to this question may help us to understand further there are any behavioral differences among investors according to their frequency of trading in stock market apart from other demographics such as age, gender and occupation to name a few.

Further this implies that of the participating 765 participants 62% respondents stated that their participation in stock market is limited to occasional trading and that they do not engage in daily trading of stock. The details stated above are shown in terms of graph below.
5.1.9 Monitoring of Investment

The frequency of monitoring of investment shall be an important factor in understanding the behavior of investor for the reason that such frequency shall help us to understand the mechanism and methods used by the investor in evaluating the valuation.

It can be observed that frequency of monitoring investment varies considerably among the respondents. Of the total 996 respondents 231 respondents those who do not invest in stock market are shown by initials NA. Of those respondents who invest in stock market 22% of the investors monitor their investment daily while 25% monitor their investment weekly followed by 17% respondents who state that they monitor their investment monthly. A majority of respondents who are 37% of the respondents who invest in stock state that they monitor their investment occasionally.

5.1.10 Percentage of Income Investment in Equity

It can be observed that of the respondents who invested in equity 31% of the respondents stated that they invested 15-30% of their total income, followed by 27% of respondents investing in stock who stated that they invested 0-15% of their income in stocks. 166 of the respondents skipped the question. 23% of the respondents are not eligible to answer this question as they are not investing in the stock market.

5.1.11 Income per Annum

Income per annum shall be a crucial determinant in predicting consumer or client behavior towards equity market and stock selection, sources of information for assessing information related to stocks.

The minimum income per annum was 60k per annum and maximum income reported was 9 lakhs per annum. The mean income reported was 4, 22,000 per annum with a standard deviation of 2, 66,167.
5.1.12 Number of Years of Investment

The average or mean number of years of investment is 6 years with a standard deviation of 5.1. According to histogram majority of investors are investing for less than 5 years with a very few long term investors.

5.1.13 Skewness and Kurtosis of Distribution of Sampled Respondents

- The skewness value of gender, employment, marital status and years of investment is positively skewed. Further the skewness value of income is near to zero implying that skewness is less as compared to other demographic categories of respondents.
- The positive skewness implies that the lower values are highly concentrated and higher scores are frequented by less number of observations.
- From the observation it can be concluded that in the sample respondents the number of males, government, and private sector employed or self employed respondents are more as compared to other category of respondents.
- Further it can be implied that there are more married number of respondents and the mean years of investment is lower as compared to other category of respondents.
- Moreover the lower skewness value in the income suggests a close to normal distribution.
- As sample size is large we would not calculate the significance values of skewness.
- After observing the kurtosis value from the above table it can be implied that positive values are observed for gender, age, employment and marital status.
- A higher positive value is observed in case of years of investment implies that the distribution in case of years of investment is pointy and heavy tailed which may be due to the fact that higher frequencies are observed in lower years of investment.
- A negative value of kurtosis is observed in case of income and family status. The negative value of kurtosis implies that the distribution is light tailed which implies that number of observations are observed near the mean.
5.2 INVESTMENT PATTERN

In this section an attempt was made to understand the investment pattern of the respondents by understanding the investment monitoring frequency, the factors inducing investment or trading in a particular stock, the sources of information and the relative importance of these factors on investment or trading decisions.

5.2.1 Factors to induce investment in particular stock

The Principal Component analysis reveals two components based on the Eigen value and factor loading. The factors based on their component loading include news and brokers advice. The other PC2 includes two components tips and rumors. The above factors can be combined and are named as follows

**Group 1: Scientific Information (News & Brokers Advice)**

The group 1 includes scientific information for the reason that both news and brokers advice are based on information which most probably is rational, factual and updated. The news especially business news analysis and brokers advice including advice from brokerage house are mostly based on technical information including technical charts. The first principal component has variance (eigenvalue) 2.99 and accounts for 42.8% of the total variance.

**Group 2: Grapevine Factor (Tips and rumors)**

The group 2 includes factors which seems illogical or irrational for any decision making. But further at the same time it cannot be denied that these factors many a times are movers and shakers of the market and investor decisions may be influenced by them. The first principal component has variance (eigenvalue) 1.02 and accounts for 15% of the total variance. The first two components represent 57% of variation.

It can be observed that depending upon the choice of the respondents regarding what induces them to invest in equity; the responses could be clearly classified in two groups based on the factor loadings where one group compromises of scientific or rational sources such as news or recommendations related to particular stock by the broker or
brokerage house. Though it is agreed that equity market is derived by fear and greed rather than rational decisions the fact that the investor have put rumors and tips in second group underlines the fact that an ore preferred source of influence is rational platform compromising of brokerage recommendation and news. Moreover of the two rational factors news and brokerage advice included in the group scientific information the brokerage advice accounts for the maximum variance in the group rational factor and hence is most preferred source of information solicitation by the respondents.

5.2.2 Frequency Distribution of Factors Inducing Investment in Stocks

It can be observed that 87% of the respondents admitted to subscribing to the news and brokers advise where as only 13% of the respondents denied the fact that they do not subscribe to either brokers advice or news. More than 90% deny the role of tips or rumors as a factor influencing or inducing them to invest in particular stock.

5.2.3 Income and Education Stacked Histogram

A histogram of income according to education category is plotted and shown in the following figure. The histogram shows considerable difference in mean income according to education categories and it is observed that post graduate category having highest mean income with the professional category the upper (above median) 25 % observations are having a higher income

- Similarly if we compare respondents in lower quartile of each category then as compared to other categories post graduate category is having more variation in income.
- Similarly if we compare the respondents in upper quartile of each category then as compared to other categories graduate category is having higher variation in income.
- Further the inter quartile range for professional education category is larger as compared to other category which means that there is larger variance in income of respondents in the middle 50% of professional category as compared to other categories.
The median for post graduate category as compared to other category is higher which means that the middle observation or median observation of post graduate respondents is higher than other two categories.

Finally observing the whiskers of each category it can be concluded that the distribution in case of each category is skewed. That means more variance in upper quartile of each category.

5.2.4 Distribution pattern of Years of Investment and Employment

The median number of years of investment for government employees is higher as compared to respondents in other categories.

The variance in number of years of investment in the lower quartile of government employees is more as compared to other categories.

The variance in the number of years of investment in the upper quartile of self employed category respondents is higher as compared to other categories.

Also as compared to other two categories the self employed and home maker category are having more variance in inter quartile range.

The number of outliers in case of private sector employed respondents is highest as compared to other categories.

5.2.5 Years of investment and Gender

An box plot of years of investment and gender is plotted which depicts that

The variance in number of years of investment in upper quartile in case of male category is higher as compared to females.

Further the inter-quartile range for male category is higher as compared to female category if number of years of investment is compared.

The number of outliers for male category is higher as compared to female category.

5.2.6 Years of investment and Family status

It is observed that

The joint families in the upper quartile are having a higher variance as compared to nuclear families when number of year of investment is considered.
➢ Further in case of nuclear families the inter quartile range or variance is less as compared to joint families when number of years of investment is investigated.

➢ The median observation regarding the number of years of investment is almost similar and is not influenced by family status of respondent.

5.2.7 Years of investment and Education details.

It is observed that,

➢ The median number of years of investment for diploma category is lower as compared to other category. Further the inter-quartile range also is smaller as compared to other category of education.

➢ The variance in the upper quartile for post graduate respondents is higher as compared to other categories of education.

➢ The number of outliers for post graduate category is highest.

➢ The median years of investment observation for professional category respondents is slightly lower as compared to post graduate and graduate category.

5.2.8 Investment in stock and Demographics

It can be concluded that

➢ From the above table it can be observed that none of the demographic attribute amongst the sample respondents has reported significant relation or association with the investment in stock.

➢ The percentage number of investors in stock market is highest in home maker or work from home respondents as compared to other category. The percentage figure is cumulative for each category on y axis. The percentage of investors who do not invest in stocks is for government sector employees who may have preferred other investment options.

➢ Nearly 80% of respondents from private sector and self employed category invest in stocks.
Investment in stock and gender
The percentage of respondents who do not invest in stocks is higher in females as compared to males. It means that as compared to males the percentage of females who do not invest in stocks is higher which is in line with the observed social status in the society.

Investment in stock and marital status
The percentage of investors in stocks is higher in case of married respondents as compared to unmarried or single respondents. Again this is in line with observed social norms as unmarried person in his early career stage may not have the propensity to investment.

Education and Investment in Stock
The percentage of investors who do not invest in stocks is higher amongst post graduate and professional respondents. This is bit surprising as it may be expected that higher education may drive stock investment amongst respondents. Surprisingly the graduate and diploma holders are having higher percentage of investors.

Years of Investment and Education
It can be observed that mean years of investment in postgraduate category in all age groups is higher as compared to other categories of education in all age groups.

Years of Investment and Gender
There is considerable difference in mean number of years of investment between males and females particularly amongst graduates and diploma holders.

Years of Investment and Employment status
Considerable difference is observed in mean years of investment amongst different age groups; particularly the post graduate respondents have higher years of investment as compared to graduate and other investors.

Daily trading in stock
- It can be observed that percentage of daily trading respondents is higher in males as compared to females and hence can be argued that daily trading pattern is observed
amongst higher in males as compared to females which are line with established social norms.

- The percentage of employees in all categories who avoid daily trading is higher than daily traders.
- Home employed or home makers and self employed respondents trade frequently as compared to their counterparts.
- Graduates and post graduates are having higher percentage of daily traders as compared to other categories.
- Diploma holders have the lowest daily traders amongst all categories of respondents.

**Factors inducing daily trade in stock**

- It can be observed that amongst the respondents those who perceive market tips as an important inducer or factor to trade daily a slight higher percentage is observed amongst respondents who either work from home or are home makers.
- It can be observed that the percentage of respondents from the post graduate category and having professional education deny the importance of market tips as an factor influencing daily trading in stock.
- It can be observed that percentage of respondents who perceive market tips as an important influencer for daily trading is higher amongst age group of 31-40 and those above 50 years of age.
- As compared to females male perceive news as a factor that influences to trade daily in stocks.
- Amongst different categories respondents in home maker category or work from home perceive news as an important factor influencing daily trading in stocks.
- The percentage of respondents having post graduate respondents educational qualification consider news as an important factor influencing daily stock trading.
- The percentage of investor accepting insider information as a factor influencing daily trading in a particular stock is merely below 20%.
- Amongst all age groups barring above 50 years of age the percentage of respondents influenced by insider information as a factor for daily trading in stock is less than the percentage of respondents who don’t take this factor into account for daily trading. Further this may call for investor education in this particular class of senior citizens.
who may be prone to market rumors. The percentage of male respondents considering insider information as an important factor influencing daily trading in a particular stock is more as compared to female respondents.

- Amongst different sector respondents those respondents engaged in government sector and self-employed perceive or are influenced by insider information as a factor encouraging daily trading in stock as compared to other categories.

- The percentage of respondents in age category of 31-40 consider past experience as a factor influencing decision for daily trading in stock whereas in all other age groups the percentage of respondents denying past experience as a factor influencing daily trading in a particular stock is higher to those who say yes.

- Diploma holders have categorically ruled out past experience as a factor influencing daily trading in stock.

- Further the percentage of respondents from professional education category who deny the role of past experience as a factor influencing daily trading in stock is higher as compared to other categories of education.

- The percentage of respondents accepting past experience as a factor influencing decision to trade daily in a particular stock is higher amongst government employees and home maker or work from home category respondents whereas in all other categories the percentage of respondents denying the role of past experience as a factor influencing decision to daily trade in stock is higher in other categories.

- In case of self-employed and home maker or work from home category the percentage of respondents who have accepted the role of rumors in their decision to invest in a particular stock is higher as compared to other categories of employment.

- There is negligible percentage of government employees who have accepted the role of rumors or street talk as a factor influencing the decision for daily trading in particular stock.

- Surprisingly the percentage of post graduate and professional respondents who have accepted the role of rumors or street talk as a factor influencing decision to daily trade in a particular stock is higher as compared to other categories of respondents.

- Broker's advice could be treated as an important factor influencing decision regarding daily investment in stock or trading in stock. Hence brokers advise indifferent age
groups are plotted and surprisingly those in the age group above 50 deny the role of broker’s advice in their decision regarding daily trading in stocks.

- By observing the graph it can be observed that there is no considerable difference in perception of broker’s advice as an important factor influencing daily trading in stock.

5.3 FACTORS INDUCING INVESTMENT IN PARTICULAR STOCK

- From the above graph it can be observed that the percentage of respondents who consider dividends as a important factor influencing decision to invest in a particular stocks and those who do not consider it important differ across different employment categories. The self employed and work from home or home maker category respondents consider dividend as a important factor influencing decision to stay invested in a particular stock.

- From the above graph it can be observed that level of education does affect the perception regarding the importance of dividend as a factor influencing decision making while investing in a particular stock.

- From the graph it can be observed that apart from graduate category respondents the percentage of respondents who do not perceive dividend as a factor influencing decision to invest in a particular stock is more as compared to those respondents who perceive it as important factor influencing decision to stay invested in a particular stock.

- It can be observed that the percentage of respondents who perceive the importance of dividend as a factor influencing decision to stay invested in a particular stock as compared to those who accept its importance is different amongst different age categories and no fix pattern is observed.

- The importance of organic growth in a stock as a factor influencing decision to stay invested in a particular stock is observed to decrease with increase in age.

- The percentage of respondents who consider organic growth as an important factor influencing decision regarding investment in a particular stock seems to vary across different education categories. The respondents in post graduate educational
qualification seem to be convinced about its importance as compared to other categories of education.

- it can be observed that the respondents in government sector and home makers seems to be convinced about the role of organic growth as a important factor influencing decision making in a particular stock.
- it can be observed that apart from the respondents employed in private sector the percentage of respondents those who do not perceive inorganic growth as a factor influencing decision to invest in a particular stock is greater than the percentage of respondents those who perceive it as important.
- After plotting the histogram of percentage of respondents those who perceive inorganic growth as an important factor influencing decision to daily trade in a particular stock to those who do perceive it is an important no considerable difference is found in various education categories.
- It can be observed that the importance of inorganic growth as a factor influencing decision for investing in a particular stock differs across various education categories. Apart from the graduate category respondents the percentage of respondents who deny the importance or role of inorganic growth as a factor influencing the decision to stay invested in a particular stock.
- The percentage of females denying the role of future prospect as a factor influencing decision to invest in a particular stock.
- A slight higher percentage is observed in the age group of 21-30 as compared to other categories of respondents in different age groups who accept the role of future prospect as a factor influencing decision to invest in a particular stock.
- Amongst different employment categories the percentage of respondents who consider future prospect as a factor influencing decision to invest in a particular stock is slightly higher in home maker category as compared to other employment categories.
- The percentage of respondents having professional education and who perceive future prospect as a factor influencing decision to invest in a particular stock is slightly less than respondents in other category.
5.4 DEMOGRAPHICS AND TRADING OR INVESTING IN PARTICULAR STOCK

- It can be concluded that among the various factors that influence a trader to trade daily in a particular stock only tips is correlated to age. The correlation coefficient is 0.078 and is significant.
- Gender is negatively correlated with tips and news as an influencer to trade daily in a particular stock.
- 8.3% of males accept the role of tips as a factor influencing daily trading in stock whereas only 4% of females accept the role of tips.
- 11% of males and only 5.6% of females accept the role of news as an influencer to trade daily in a particular stock.
- It can be observed that years of investment is found positively and significantly correlated with the factor “Future prospect” as a factor influencing or inducing to stay invested in a particular stock. The coefficient of determination for both these correlations is 0.0098 respectively implying that though the above demographic attributes have a significant correlation there are factors which explain the unexplained variance which is 99%.

5.5 MONITORING FREQUENCY

- It can be observed that income and years of investment have significant correlation with monitoring frequency.
- Further the coefficient of determination for these attributes are 0.0036 and 0.0081 respectively which in turn means that though income and years of investment have significant correlation with frequency of monitoring but they do explain less than 1% of variance observed in monitoring frequency.
- 11.22% of females and 18.25% of males monitor their investment daily whereas 19% of both these categories monitor their investment weekly.
- Further the percentage of females monitoring their investment occasionally is more as compared to males which are 33% and 27% respectively. This may be due to the fact that women tend to monitor their investment less frequently as compared to males.
5.6 TYPES OF STOCK TRADED AND DEMOGRAPHICS

It is observed that in the given sample none of the demographic attribute or investment attribute is found to have significant correlation with type of stocks invested in namely large caps, mid caps or small caps.

5.7 PERCENTAGE OF INCOME INVESTED AND DEMOGRAPHICS

The percentage of income invested in stocks has significant correlation with Income and none other demographic attributes

5.8 PREDICTION OF INVESTMENT IN STOCK

The binary logistic regression equation formulated is as below

\[ Y' = -0.847 + 0.000001 \text{ Income Details per annum} - 0.01699 \text{ Age (Years)} \]

From the odds ratio it can be concluded that as income increases the probability of event occurring (No Investment in stock) decreases because the CI is 1. Further in case of age as age decreases the probability of event happening (no investment in stock) increases. In other words young people are less likely to invest in equity and those having higher income the probability of investing in stock increases.

5.9 INVESTOR BEHAVIOR AND KEY FACTORS INFLUENCING INVESTOR CHOICE OF EQUITY INVESTMENT OR TRADING

Individual investors participate in the stock market by purchasing and selling different stocks and it is very important to identify various economic and behavioral motivations that affect their purchasing decisions. Based on the previous studies of (Nagy and Obenberger, 1994, Anna A. Merikas, Greece Andreas G. Merikas, George S. Vozikis, DevPrasad ) who proposed that the variables that govern the investment behavior of the investors in equity market. The initial questionnaire contained five broad factors. The accounting factors, subjective factors, neutral factors, advocate recommendation and personal financial needs).
Investment behavior = f (accounting factors, subjective factors, neutral factors, advocate recommendation, personal financial needs).

The investor does not take decision in isolation. The factors that he considers are

**Accounting Factors**
1. Financial performance of Company
2. Expected Corporate Earnings
3. Affordability of Share Price (Price to Earnings Ratio)
4. Expected Corporate Dividend (Cash dividend, Bonus Share, Buyback of Shares)
5. Recent Price Movements of Firm's Stock

**Subjective/ Personal**
1. Feelings for Firm's Products and Services
2. Gut Feeling on Economy
3. Past Performance of Investor's Stock Portfolio

**Neutral Information**
1. Coverage in Electronic (Internet) Media
2. Coverage in Print Media-Press
3. Current Economic Indicators
4. FII Movement in Stock Market

**Recommendation**
1. Brokerage House Recommendation
2. Family Member Opinions
3. Friend or Co-worker Recommendation
4. Stock Broker Recommendation

**Personal Financial Needs**
1. Diversification Needs
2. Liquidity of Fund
3. Tax Consequences
4. Minimizing Risk
A factor analysis was conducted on the aforesaid 33 questions. The method for factor analysis used is principal component analysis and rotation used was direct oblimin as it was perceived that the factors might have correlations. Further cases were excluded listwise and initial solution was obtained. The method for extracting number of factors was based on Eigen values and factors were extracted who’s Eigen score was greater than 1.

After observing the model it is found that following three variables have values less than 0.5, they are

- Tax consequences
- Stock Broker recommendation
- Recent price movement of particular stock
- Perceived Business ethics
- Condition of financial statement
- Reputation of firm

Hence these three variables which might explain the same thing are removed and then a factor analysis is conducted further.

After eliminating the above 6 variables factor analysis was redone and following results were produced.

From the above table and observing the component matrix score it can be observed that

- Six principal component have been extracted
- The component along with their Eigen scores and variance has been explained.
- It can be seen that component 1 explains 35% of variance.
- All the 6 components explain 75% of total variance and there is still 25% of variance which remains unexplained.
- The components based on theoretical background and available factor loadings can be classified as follows

**Factor 1: Accounting Factors**

- Affordability of Share Price:
- Record of the company (as per annual report of the co.):
- Expected Corporate Earnings-
• Financial Performance of Company
• Expected Corporate Dividend (Cash dividend, Bonus Share, Buyback of Shares)
• Expected Stock Market Performance
• Position of the Firm in Industry
• Institutional Holdings in the company
• International Operations of the Firm
• Domestic Operations of the Firm

From the above list it can be concluded that the most important set of factors that explain 35% of the observed variance are related to accounting factors. These factors reveal the overall financial health of the company and are listed among all other factors as the most important factor for investing in particular stock.

Further the factor score case wise are stored as a variable and analysis of variance (ANOVA) is done to inquire whether the scores vary accordingly to demographic attributes including age, gender, occupation, income, years of investment. Moreover the within group variance and between group variance is also noted to signify the variance if any.

**Factor 2: Personal Factors**

• Attractiveness of Non-Stock (Equity) Investments like real estate etc.
• Competitive Financial Needs.
• Investing across share of different company.
• Minimizing Risk of Investment.

From the list of the above factors it can be easily seen that all these variables pertain to the personal domain of the investor which primarily consist of risk tolerance, risk perception and financial needs of an individual. These types of investors may have limited principal to invest and may wish to invest in stocks depending upon how much capital shall be at disposal.
**Factor 3: Neutral or Information Factor**

This factor pertains to news or press coverage about a particular stock and also regarding the information regarding government policies. The variables that are included in this factor are as follows

- Coverage in Electronic (Internet) Media-
- Coverage in Financial Press-
- Coverage in General Press-
- Data in Reports & Prospectus-

From the list of the above factors it can be seen that most of these variables pertain to the information domain. The investors perceive this set of variables which influence their decision to invest in a particular stock. The variables include information regarding particular stock or government policies that may affect a particular stock.

**Factor 4: Recommendations**

Many a times the choice of a particular stock or investment in equity is influenced by the recommendations of broker or brokerage house. The factor score revealed that such variables that influence an investor decision to invest in particular stock are

- Brokerage House Recommendation-12c
- Recommendation of Friend / Co-worker-12s

**Factor 5: Perception or subjective**

As literature suggests equity market is influenced by emotions and feeling which may sometimes not reflect the true picture or else are affected by news and rumors. Further the perception of individual investor regarding the particular stock or in general about the market may affect his or her choice of investment. The factor which include them are as follows

- Opinion of Family Member
- Feelings for Firm's Products and Services (e.g. Tata group co.’s product as trusted product
- Gut Feeling on Economy
Although it should be highlighted that these variables are fairly subjective and relative importance of these variables may further differ amongst various individuals.

**Factor 6: Macroeconomic Factors**

The factor loading table apart from the above specified 5 set of factors produces an additional factor which is not specified in earlier literature and is coined as macroeconomic factor although its factor loading is fairly less as compared to other factors and also explains lesser degree of variation as compared to other factors. It includes

- Current Economic Indicators like GDP, money supply, interest rates etc.
- Listing in multiple stock exchanges.

Testing of hypothesis

Based on the literature review and theoretical background following hypotheses were formed.

H₁: There is significant difference in the influence of Accounting Factor on behavior of respondents based on certain parameter like Age, Area, and Income.

H₂: There is significant difference in the influence of Personal Factor on behavior of respondents based on certain parameter like Age, Area, and Income.

H₃: There is significant difference in the influence of General Factor on behavior of respondents based on certain parameter like Age, Area, and Income.

H₄: There is significant difference in the influence of Recommendation Factor on behavior of respondents based on certain parameter like Age, Area, and Income.

For testing of hypothesis, the weighted average score which specifies the importance is tabulated and reported below. The following steps are followed
1. Those cases which have either not responded or in whose case who have not invested in stock are deleted and not considered for further analysis.

2. The weighted average score for each factor and for each respondent is calculated and reported below.

3. After calculating the weighted score of each respondent and also the average score on each factor and variance of each respondent in six subsets are further subjected to ANOVA for identifying variance in factor scores of above 5 specified factors according to following parameters.

5.10: DESCRIPTIVE OF GROUP SCORES OF FACTORS INFLUENCING INVESTOR BEHAVIOR

In this section an attempt is made to understand the group score of each group score and observe the statistics about each group. In the following table an attempt is made to compare the groups according to their mean scores and deviations observed in terms of variance and standard deviation. Further an attempt is made to understand the distribution pattern by observing the skewness and kurtosis. Moreover further attempt is made to understand the correlations between various socio demographic attributes and group scores to find out whether these scores vary within and between groups.

Descriptive of group scores of factors influencing investor behavior

From the above table it can be observed that

1. The mean score for factor 1 is 13.2902 which are highest amongst all the groups. By observing the average scores it can be seen that the accounting factor is rated as most important factor having highest influence on investor decision to invest in a particular stock.

2. Further the recommendation factor has secured the second highest score of 8.52 which is second highest amongst all factors.

3. The personal factor has got the least score suggesting that the less relative influence of it on investor behavior to trade or invest in particular stock.

4. Moreover the positive value of skewness suggests that the lower values are highly concentrated and higher scores are frequented by less number of observations. Further the
lower positive values of skewness in accounting and subjective factor suggest lower
development as compared to other variables.
5. The negative value of kurtosis implies that the distribution is light tailed which implies
that number of observations are observed near the mean.

5.11 DIFFERENCE IN MEAN SCORE OF EACH FACTOR

Though we have got differences in mean scores of relative importance of each factor it
would be worthwhile to understand whether a considerable and statistical significant
difference exists between these scores. To find out whether the group scores or its mean
differ significantly we carry out ANNOVA test to find out deviations within groups and
between groups.
ANNova shall help us to basically test the null hypothesis that there is no considerable
difference between mean score of each group influencing investor decision to invest in
particular stock.
Assumptions for carrying out ANNOVA
The assumptions under which the $F$ statistic is reliable are the same as for all parametric
tests based on the normal distribution. That is, the variances in each experimental
condition need to be fairly similar, observations should be independent and the dependent
variable should be measured on at least an interval scale. In terms of normality, what
matters is that distributions within groups are normally distributed. Looking at normality
first, Glass et al. (1972) reviewed a lot of evidence that suggests that $F$ controls the Type
I error rate well under conditions of skew, kurtosis and non-normality. Skewed
distributions seem to have little effect on the error rate and power for two-tailed tests (but
can have serious consequences for one-tailed tests).
The $F$-ratio tells us only whether the model fitted to the data accounts for more variation
than extraneous factors, but it doesn’t tell us where the differences between groups lie.
So, if the $F$-ratio is large enough to be statistically significant, then we know only that
one or more of the differences between means is statistically significant (e.g. either $b_2$ or
$b_1$ is statistically significant). It is, therefore, necessary after conducting an ANOVA to
carry out further analysis to find out which groups differ. Therefore, we need a way to
contrast the different groups without inflating the Type I error rate. There are two ways in which to achieve this goal. The first is to break down the variance accounted for by the model into component parts, the second is to compare every group (as if conducting several t-tests) but to use a stricter acceptance criterion such that the family wise error rate does not rise above .05. The first option can be done using planned comparisons (also known as planned contrasts) whereas the latter option is done using post hoc comparisons. The difference between planned comparisons and post hoc tests can be likened to the difference between one- and two-tailed tests in that planned comparisons are done when you have specific hypotheses that you want to test, whereas post hoc tests are done when you have no specific hypotheses.

As we have no specific hypothesis of which factor is more important than other in influencing investor decision to invest in particular stock we use post hoc tests. The choice of comparison procedure will depend on the exact situation you have and whether, it is more important for you to keep strict control over the family wise error rate or to have greater statistical power. However, some general guidelines can be drawn (Toothaker, 1993).

As sample sizes are not equal and as observed the population variances are not similar we cannot use REGWQ or Tukey as both have good power and tight control over the Type I error rate.

As sample sizes are slightly different we use Gabriel’s procedure because it has greater power. The Games–Howell procedure in addition to any other tests is selected because of the uncertainty of knowing whether the population variances are equivalent.

The differentiating factor or grouping variable is Age, Gender, Occupation, Income and years of investment. The analysis of variance is checked by one way ANNOVA and following statistic is obtained.

- Levene’s statistic: To check assumption of homogeneity of variance.
- F statistic: To check whether the variance are substantial in various categories of observation.
- Further if the Leven’s statistic is significant then further Welch statistic is also reproduced and F ratio is recorded for the same.
Hypothesis 1: *H1: There is significant difference in the influence of Accounting Factor on behavior of respondents based on certain parameter like Age, Area, and Income.*

The ANNOVA for the first factor is done and the findings are reported as follows

1. The factor scores for factor 1 which is accounting factor vary or differ across various occupation groups.

2. Similarly as the Leven’s test is not significant the assumptions of covariance are substantiated and hence not violated in case of occupation, education and income.

3. The factor scores for factor 1 which is accounting factor vary in different education groups.

4. There is considerable difference in factor scores amongst various income groups.

5. No significant variance is observed in various groups who differ according to years of investment and similar observation can be concluded in regards of different age groups.

Hypothesis 1

From all the above findings amongst various demographic and social attributes it can be concluded that the factor scores which invariably represent the relative importance or significance of a particular variable in decision making process of investor differ in education, income and occupation but no such difference is observed according to age, gender and years of investment.

Hence null hypothesis that no variance in relative importance of accounting factor is observed according to social and demographic attributes is rejected and alternative hypothesis that difference is observed according to occupation, income and education is accepted.

Hypothesis 2:

*H2: There is significant difference in the influence of Personal Factor on behavior of respondents based on certain parameter like Age, Area, and Income.*
The above hypothesis is tested by recording the factor scores of second factor namely personal and is analyzed further by using the one way ANNOVA to record any differences amongst various categories of different variables. The resulting statistic is reported in the following table

From the above table it can be observed that

- The factor score for factor 2 differs significantly in various occupation categories.
- As the Leven’s test is significant in education category which violates the assumption of homogeneity of variance, Welch statistic is noted for F statistic instead of ANNOVA which also is significant.
- A difference amongst education categories is observed regarding the factor score for factor 2.
- The factor score for factor 2 varies in various categories of income.
- No difference in factor score for factor 2 is observed amongst various classes of age and years of investment.

An initial hypothesis H02 which specifies that no considerable difference in factor scores for factor 2 is observed amongst various categories of education, occupation and income is thereby rejected and hence alternate hypothesis substantiated by the evidence of “F statistic” is accepted with the mention that no variance in factor scores of factor 2 is observed amongst various age and years of investment categories.

Hypothesis 3:  *H3: There is significant difference in the influence of General Factor on behavior of respondents based on certain parameter like Age, Area, and Income.*

The above hypothesis is tested by recording the factor scores of second factor namely personal and is analyzed further by using the one way ANNOVA to record any differences amongst various categories of different variables. The resulting statistic is reported in the following table

By observing the ANNOVA statistics it can be concluded that

- A considerable difference amongst various occupation and income categories is observed.
No significant differences in factor scores are observed amongst different age groups and income groups.

Further substantial difference is found according to years of investment in factor score for third factor namely neutral or general factor.

An initial hypothesis H03 which specifies that no considerable difference in factor scores for factor 3 is observed amongst various categories of education, occupation and income is thereby rejected and hence alternate hypothesis substantiated by the evidence of “F statistic” is accepted with the mention that no variance in factor scores of factor 3 is observed amongst various age, and years of investment categories.

Hypothesis H4: There is significant difference in the influence of Recommendation Factor on behavior of respondents based on certain parameter like Age, Area, and Income.

By observing the ANNOVA table it can be concluded that

A considerable difference amongst various occupation, age and income categories is observed.

No significant differences in factor scores are observed amongst different education groups and income groups.

Further no substantial difference is found according to years of investment in factor score for third factor namely neutral or general factor.

An initial hypothesis H04 which specifies that no considerable difference in factor scores for factor 4 is observed amongst various categories of education, occupation and income is thereby rejected and hence alternate hypothesis substantiated by the evidence of “F statistic” is accepted with the mention that no variance in factor scores of factor 4 is observed amongst various education and years of investment categories.

Hypothesis 5: H5: There is significant difference in the influence of Subjective or Personal Factor on behavior of respondents based on certain parameter like Age, Area, and Income.
The above hypothesis is tested by recording the factor scores of second factor namely personal and is analyzed further by using the one way ANNOVA to record any differences amongst various categories of different variables. The resulting statistic is reported in the following table.

By observing the above table it can be concluded that

- A considerable difference amongst various occupation, age and income categories is observed.
- No significant differences in factor scores are observed amongst different education groups and income groups.
- Further no substantial difference is found according to years of investment in factor score for fourth factor namely subjective or perception factor.

An initial hypothesis H05 which specifies that no considerable difference in factor scores for factor 5 is observed amongst various categories of education, occupation and income is thereby rejected and hence alternate hypothesis substantiated by the evidence of “F statistic” is accepted with the mention that no variance in factor scores of factor 4 is observed am

In summary it can be concluded that investor behavior to invest or trade in a particular equity is influenced by variety of variables which can be broadly classified and ranked according to their relative importance as follows. Further the socio demographic variables that influence these factors or groups are also listed along with the constructs.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting Factor</td>
<td>Occupation, Education and Income</td>
</tr>
<tr>
<td>Recommendation Factor</td>
<td>Education and Years of Investment</td>
</tr>
<tr>
<td>Subjective or Personal Factor</td>
<td>Education and Years of Investment</td>
</tr>
<tr>
<td>Neutral or Information Factor</td>
<td>Age and Years of Investment</td>
</tr>
<tr>
<td>Personal Factor</td>
<td>Age and Years of Investment</td>
</tr>
</tbody>
</table>

These extracted factors are similar to the study of Robert A. Nagy and Robert W. Obenberger (1994).