Chapter 4

CHAPTER 4

ANALYSIS AND INTERPRETATION

A survey was conducted among the individual equity derivative traders in Bengaluru city to understand and examine the factors that influence their trading success. Details were collected from 420 respondents using a self-administered questionnaire. After eliminating the incomplete responses, finally data collected from 382 respondents was fed into the software package IBM SPSS statistics 20 and tools such as percentage analysis, cross tabulation, chi-square, correlation and factor analysis were used to analyse and interpret the data. Further structural equation modelling using Smart PLS was also used to examine and interpret the data.

Objective: To understand the demographic and trading profile of equity derivative traders in Bengaluru city.

4.1 DEMOGRAPHIC PROFILE OF THE RESPONDENTS

The demographic details of the respondents such as their age, gender, educational qualification, occupation and their annual income were collected. This information is examined using simple percentage analysis and the results are tabulated below:

Age: The following table and figure represent the distribution of respondents based on their age category.

Table 4.1.1: Age Group of the Respondents

Age	Frequency	Percentage
18-25	54	14.1%
26-35	117	30.6%
36-45	142	37.2%
46-55	55	14.4%
56 and above	14	3.7%
Total	382	100%

Figure 4.1.1: Age Group of the Respondents
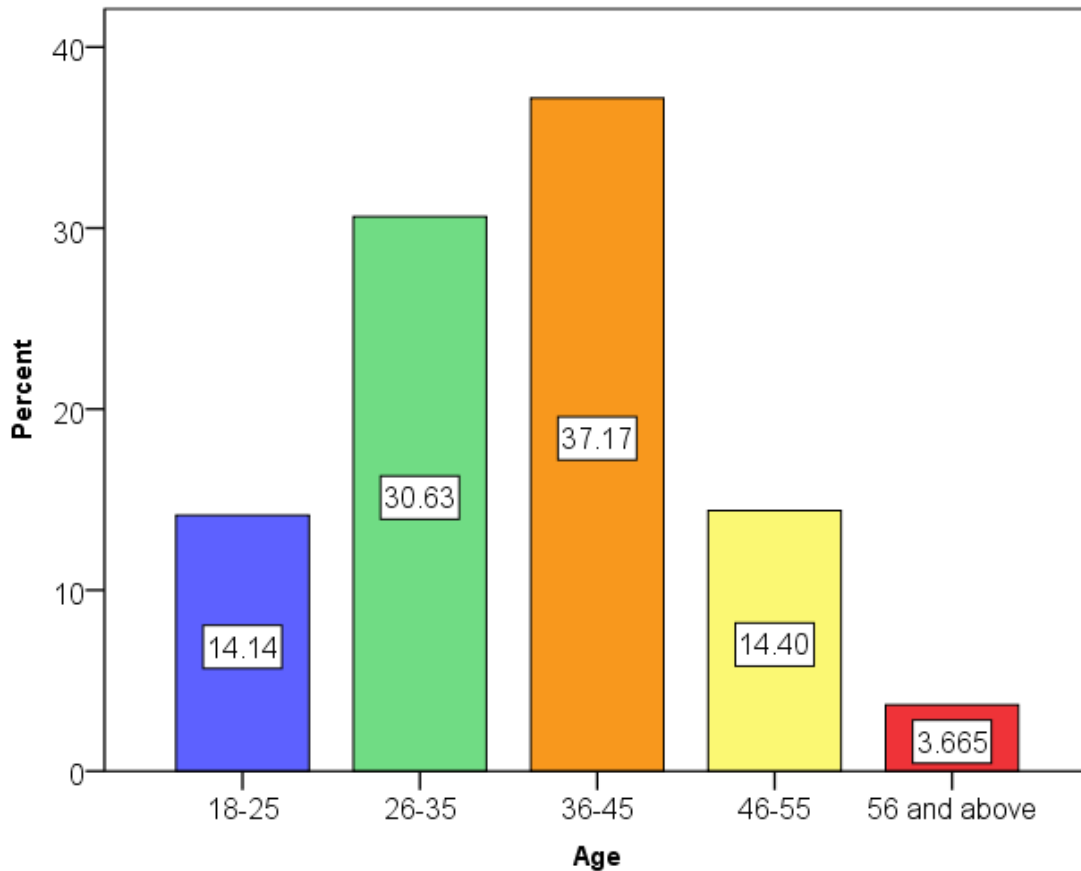
Interpretation: From the table and fig 4.1.1, it is evident that 14% of the respondents are between the age group 18 and 25. 30.6% of the respondents are between the age group 26 and 35 and majority of them (37%) are between the group 36 and 45. 14.4% of the respondents are between the age group 46 and 55. There are very few senior citizens (less than 4%) who trade in the equity derivatives segment. Thus, it can be inferred that millennials are dominating the Indian Equity Derivatives market.

India Infoline News Service (2018), Millennials are often believed to be highly ambitious, anxious and expect quick results. On the other hand, they have high risk appetite; they are tech savvy and generally prefer spending over investing. They believe in the quote that "You only live once". Thus, it is natural for them to prefer trading over investing that gives instant results.

Jain A (2020) easy access to trading apps on mobile phone, simple procedures of opening trading accounts, low-cost internet and social media such as telegram stock picking chat groups, twitter and YouTube influencers encourage the millennial retail players to try their hand into stock trading. According to worldwide mobile data pricing report by cable.co.uk., Around the world, India provided the cheapest mobile data services in 2020, with an average cost of $0.09 for 1GB data. However, Mr. Gagdani of 5Paisa, the popular discount broking firm in India, recommends millennials not to take high-leveraged intraday positions. He further advised them to stay away from illiquid stocks and cautiously trade in the derivatives market only after obtaining in-depth understanding.

Gender: The following table and figure represent the distribution of respondents based on their gender.

Table 4.1.2: Gender of the Respondents

Gender	Frequency	Percent	Cumulative Percent
Male	312	81.7	81.7
Female	70	18.3	100
Total	382	100	100

Figure 4.1.2: Gender of the Respondents
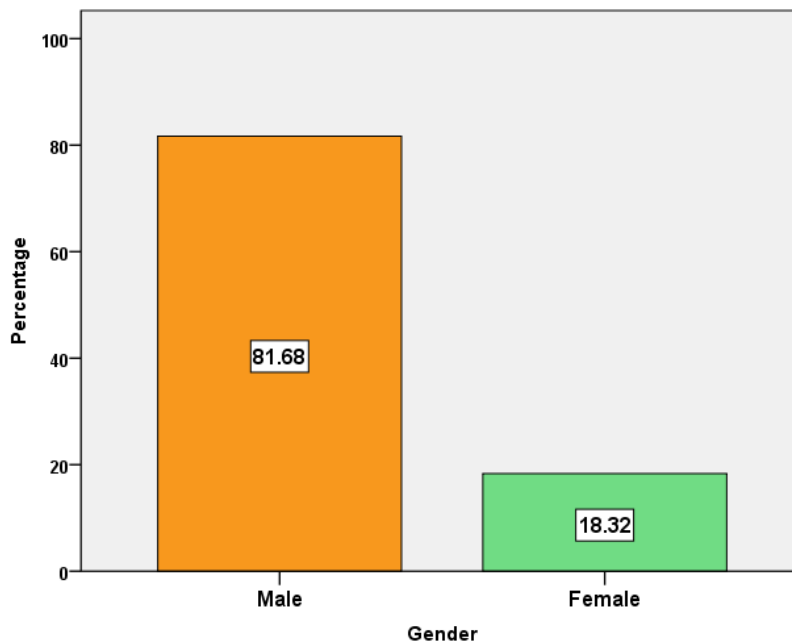
Interpretation
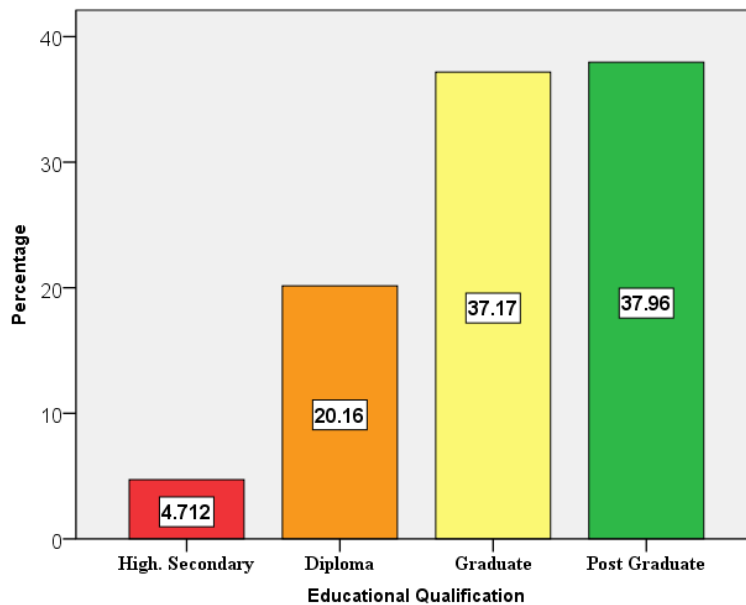
The table and figure 4.1.2, indicate that 81.68% of the respondents are male and only 18.32% are Female. Thus, it can be inferred that male traders dominate the equity derivatives market in Bengaluru city. Though stock trading as a profession is very conducive for women as it does not involve physical exertion or working long hours in office, still this field fails to entice more women.

Educational Qualification: The following table and figure represent the distribution of respondents based on their educational qualification.

Table 4.1.3: Educational Qualification of the Respondents

Educational Qualification	Frequency	Percent	Cumulative Percent
High. Secondary	18	4.7	4.7
Diploma	77	20.2	24.9
Graduate	142	37.2	62
Post Graduate	145	38	100
Total	382	100	

Figure 4.1.3: Educational Qualification of the Respondents

Interpretation

The table and figure 4.1.3, indicate that 38% of the respondents are postgraduates, 37% are graduates and 20% are diploma holders. Only 4.7% of the respondents have higher secondary school education. Thus, it can be inferred that the majority of the equity derivative traders in Bengaluru city have high formal education. In contrast, successful traders are generally self-taught and institutional degrees do not guarantee trading success.

Occupation: The following table and figure represent the distribution of respondents based on their Occupation.

Table 4.1.4: Occupation of the Respondents

Occupation	Frequency	Percent	Cumulative Percent
Field of Science and Engineering	75	19.6	19.6
Banking and Financial Services	22	5.8	25.4
Teaching, Training, Consulting, etc.	20	5.2	30.6
Full time trader	222	58.1	88.7
Self-employed/Business/Others	43	11.3	100
Total	382	100	

Figure 4.1.4: Occupation of the Respondents
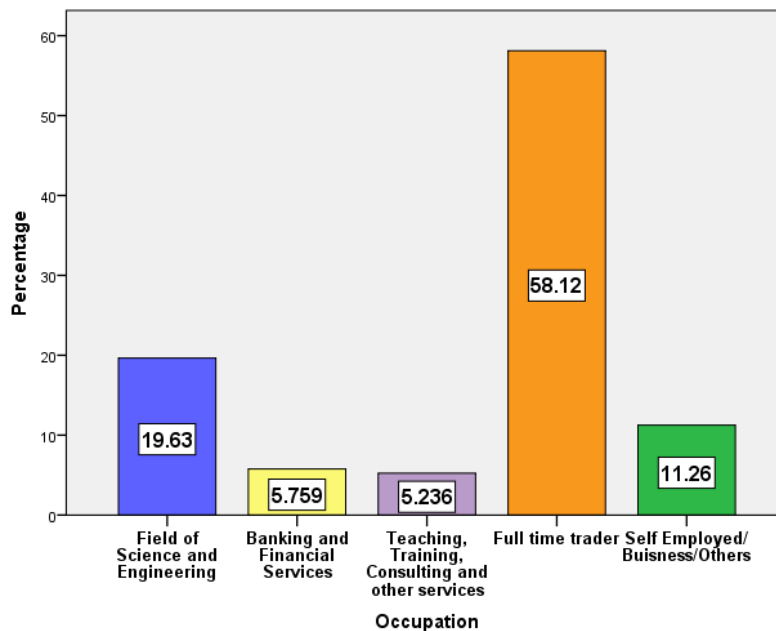
Interpretation

The table and figure 4.1.4 shows that 58% of the respondents are day traders, 19.6% of the respondents work in the field of science and engineering. 11.26% of the respondents are either self-employed or run their own business. 5.7% of them are in the field of banking and finance and 5% of them are in the field of teaching, training and consulting. Thus, it can be inferred that the majority of the respondents in the study are full time day traders and among the Swing traders, most of them are from the field of science and engineering.

Annual Income: The following table and figure represent the distribution of respondents based on their Annual Income.

Table 4.1.5: Annual Income of the Respondents

Annual Income	Frequency	Percent	Cumulative Percent
Less than 2.5 lakhs	19	5	5
2.5 lakhs - 5 lakhs	69	18.1	23
5 - 10 lakhs	102	26.7	49.7
10 - 30 lakhs	115	30.1	79.8
above 30 lakhs	77	20.2	100
Total	382	100	

Figure 4.1.5: Annual Income of the Respondents Considered for the Study
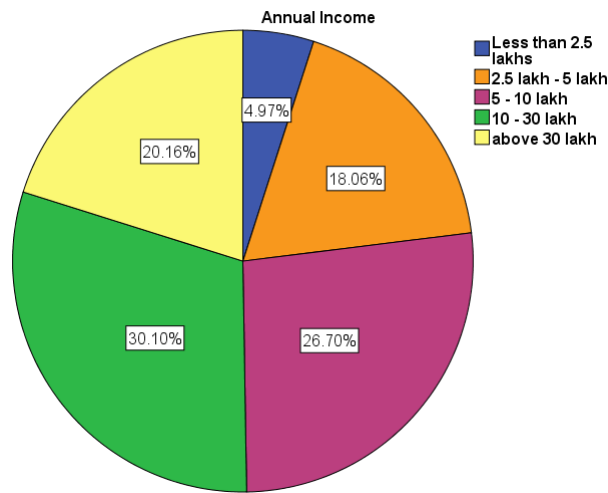
Interpretation: The table and figure 4.1.5 indicate that 20.16% of the respondents who trade in equity derivatives have an annual income of more than 30 lakh. Majority of them, 30.10% of traders have an annual income between 10 -30 lakhs. 26.7% of traders fall under the income level between 5 and 10 lakhs and 18.06% of traders in the market fall in the income bracket between Rs.2.5 and 5 lakh and 4.97% of them have income below 2.5 lakhs. DK Aggarwal (2020) Trading in derivative products is certainly risky. Moreover, it requires a lot of money. So, people with inadequate funds and low-risk appetite should stay away from the Derivatives market. The high leverage in the derivatives market allows the traders to take large positions, and if the market does not turn in his/her favour, the losses can also be enormous.

4.2 TRADING PROFILE OF THE RESPONDENTS

The trading details of the respondents such as their trading experience, types of products that they trade, their trading capital, trading purpose, preferred trading strategy, number of stocks traded and finally the compounded annual return generated from F&O trades were collected. This information is examined using simple percentage analysis and the results are tabulated below:

Trading Capital: The following table and figure represent the distribution of respondents based on their trading capital.

Table 4.2.1: Trading Capital of the Respondents

Trading Capital	Frequency	Percent	Cumulative Percent
less than 10%	53	13.9	13.9
11-25%	129	33.8	47.6
26 -40%	132	34.6	82.2
41 -60%	61	16	98.2
More than 60%	7	1.8	100
Total	382	100	

Figure 4.2.1: Trading Capital of the Respondents
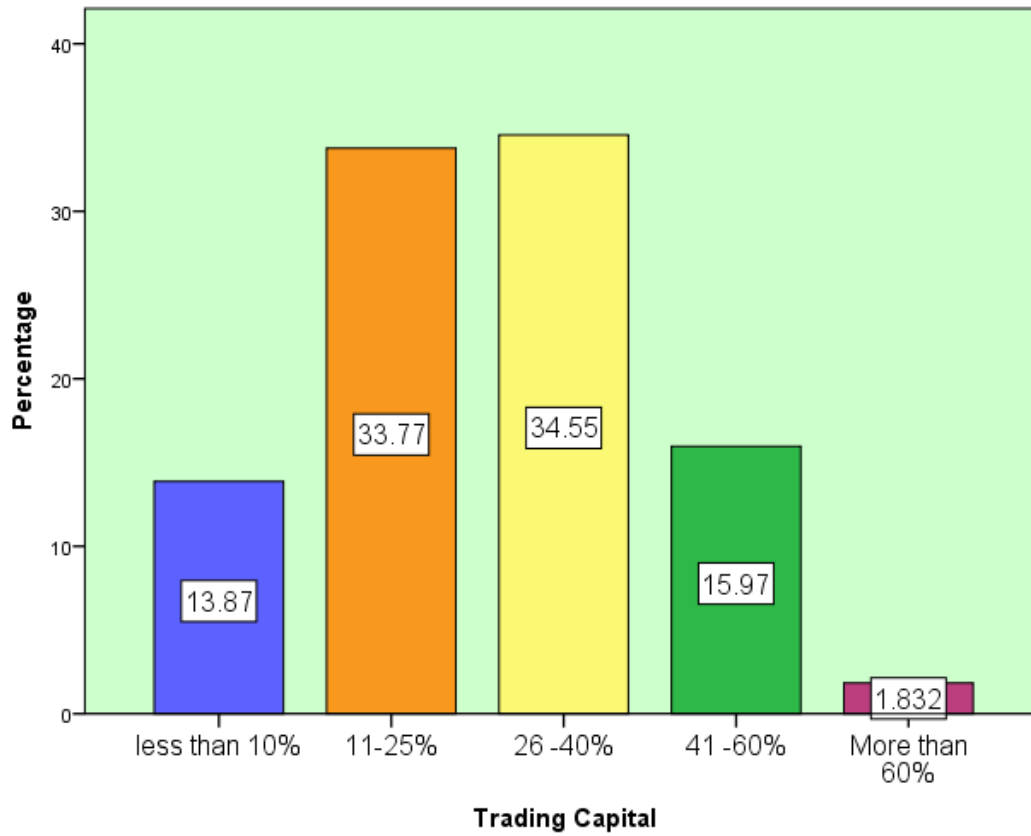
Interpretation: The table and Figure 4.2.1 indicate that less than 2% of respondents spend more than 60% of their annual income for equity derivatives trading. 16% of them spend 41 -60% of their annual income in trading, whereas the majority of the respondents i.e.: 68% of them spend 11-40% of their annual income for trading in equity derivatives. 14% of them spend less than 10% of their annual income for trading in equity derivatives.

Trading Experience: The following table and figure represent the distribution of respondents based on their trading experience

Table 4.2.2: Trading Experience of the Respondents

Trading Experience	Frequency	Percent	Cumulative Percent
Less than a year	33	8.6	8.6
1-3 years	96	25.1	33.8
3-5 years	142	37.2	70.9
More than 5 years	111	29.1	100
Total	382	100	

Figure 4.2.2: Trading Experience of the Respondents
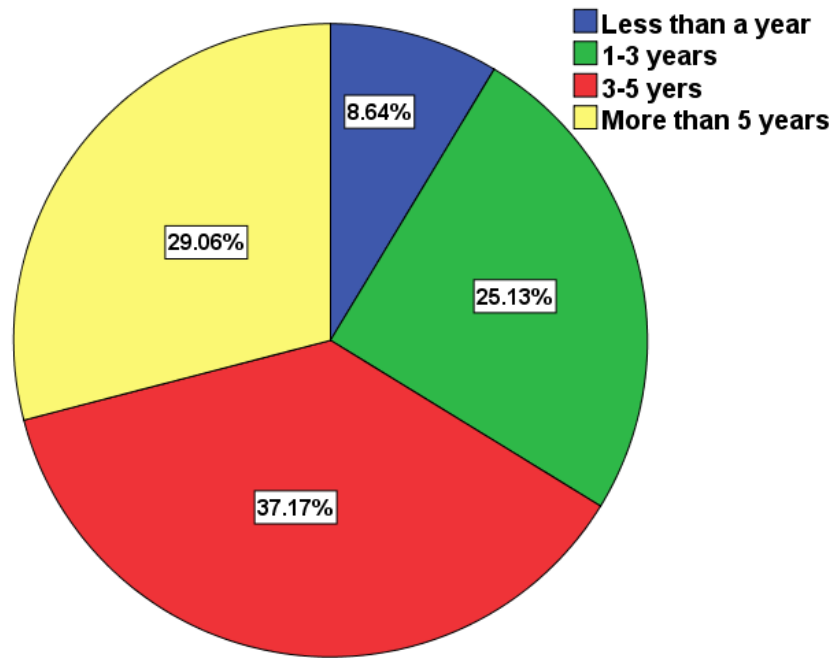
Interpretation: The table and Figure 4.2.2 indicate that the majority of respondents (37.17%) have experience of 3-5 years in equity derivatives trading. 29% of traders have experience of more than 5 years. 25% of traders have experience between 1 and 3 years. Only 8.6% of the traders have less than 1 year of experience in the market.

Trading Purpose: The following table and figure represent the distribution of respondents based on their trading purpose.

Table 4.2.3: Trading Purpose of the Respondents

Trading Purpose	Frequency	Percent	Cumulative Percent
Hedge my risk	56	14.7	14.7
speculate and make short term gains	286	74.9	89.5
Make use of arbitrage opportunity	30	7.9	97.4
All of the above	10	2.6	100
Total	382	100	

Figure 4.2.3: Trading Purpose of the Respondents
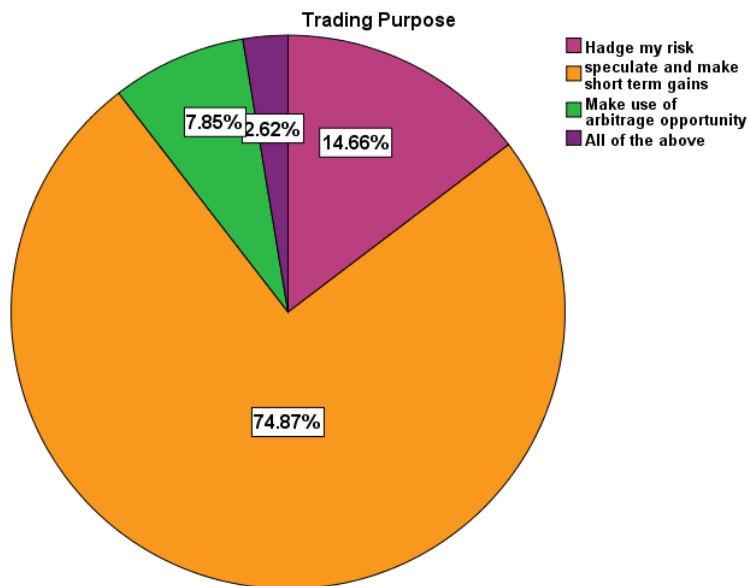
Interpretation: The table and Figure 4.2.3, indicate that, 75% of the respondents speculate in the equity derivatives market to make short-term gains.14.6% of the respondents trade in the equity derivatives market to hedge their risk. Only 7.85% of the respondents make use of the arbitrage opportunity and 2.62% of them participate in the market for all three purposes. Thus it can be inferred that the majority of traders in the equity derivatives market are speculators, which is not a healthy sign.

Products Traded: The following table and figure represent the distribution of respondents based on the products traded by them.

Table 4.2.4: Products Traded by the Respondents

Products Traded	Frequency	Percent	Cumulative Percent
Index Options	119	31.2	31.2
All or Multiple Combinations	107	28	59.2
Index Futures	67	17.5	76.7
Stock Futures	61	16	92.7
Stock Options	28	7.3	100
Total	382	100	

Figure 4.2.4: Products Traded by the Respondents
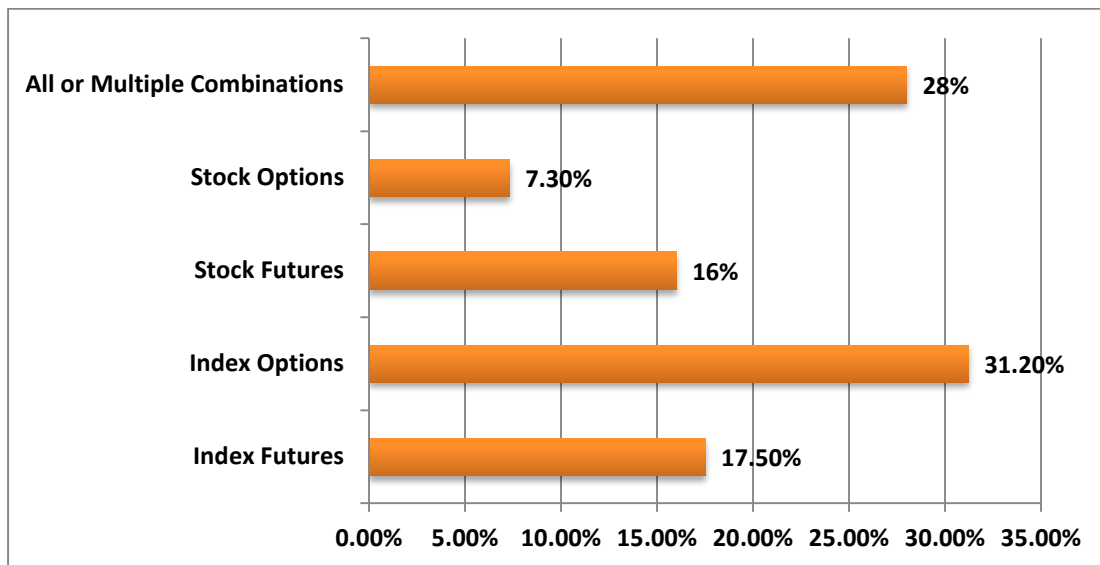
Interpretation: The table and Figure 4.2.4, indicate that 17.50% of the respondents prefer to trade in Index Futures, 31.2% of the respondents prefer to trade in Index Options, 16% of the respondents prefer to trade in stock futures, and 7.3% of the respondents prefer to trade in stock options. 28% of the respondents trade in all or multiple combinations of the equity derivative product. Thus, it can be inferred that majority of the respondents prefer to trade in Index options. This could be because of its liquidity and leverage.

Preferred trading strategy: The following table and figure represent the distribution of respondents based on their preferred trading strategy.

Table 4.2.5: Preferred Trading Strategy of the Respondents

Preferred trading strategy	Frequency	Percent	Cumulative Percent
Long Futures	64	16.8	16.8
Short Futures	46	12	28.8
Long Call/Put	115	30.1	58.9
Short Call/Put	47	12.3	71.2
All Combinations	110	28.8	100
Total	382	100	

Figure 4.2.5: Preferred Trading Strategy of the Respondents
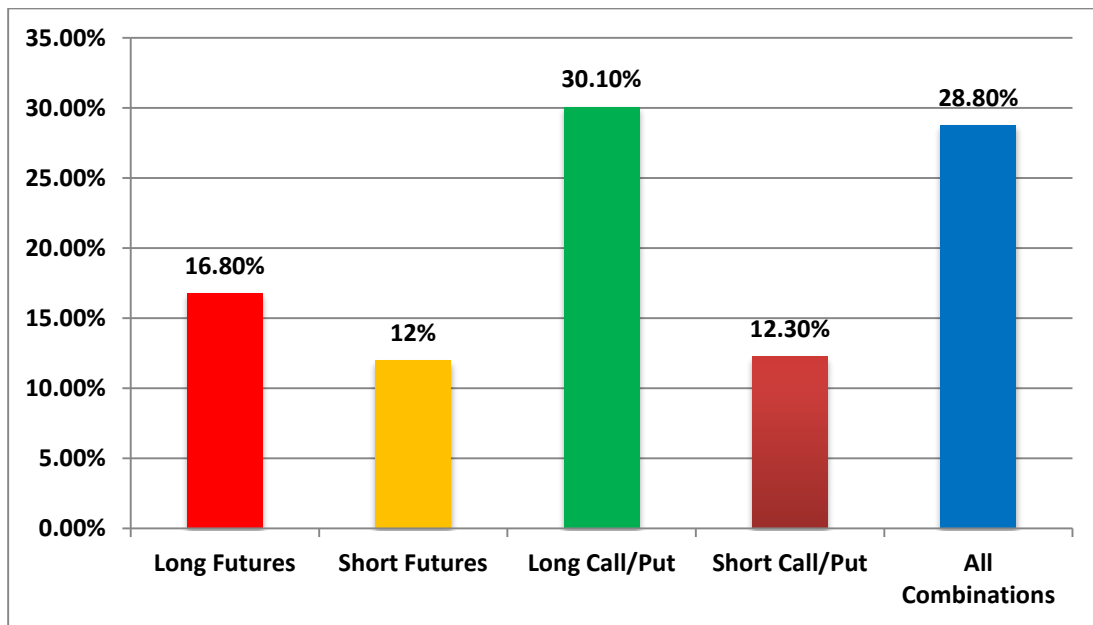
Interpretation: The table and Figure 4.2.5, indicate that 16.8% of the respondents prefer to buy (long) futures, 12% of them choose to sell (short) futures. Majority of the respondents, 30.10% of them desire to buy (long) Call/Put options, may be because of its limited downside risk and high leverage. Very few respondents (12.3% of them) prefer to sell (short) Call/Put options. 28.8% of the respondents prefer to trade in all the combinations.

No. of stocks tracked and traded: The following table and figure represent the distribution of respondents based on the No. of stocks traded by them.

Table 4.2.6: No. of Stocks Tracked and Traded by the Respondents

No. of Stocks tracked and Traded	Frequency	Percent	Cumulative Percent
Less than 4 stocks and indices	105	27.5	27.5
5-10 stocks and indices	127	33.2	60.7
More than 10 stocks and indices	150	39.3	100
Total	382	100	

Figure 4.2.6: No. of Stocks Tracked and Traded by the Respondents

No. of stock tracked and traded
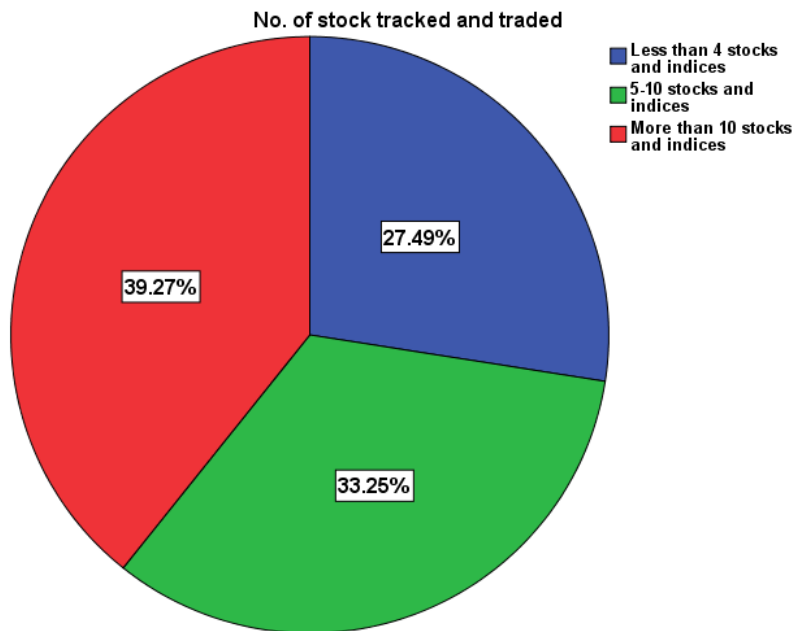
Interpretation : The table and Figure 4.2.6, indicate that 27.49% of the respondents regularly track and trade less than 4 stocks and indices. 33.25% of them track and trade 5 -10 stocks. Majority of the respondents, (39.27%) track and trade more than 10 stocks and indices. There is a general belief that lesser the number of stocks and indices one track and trade better will be his/her understanding about the stock's performance in different market conditions. With narrow focus and concentration, one could make consistent profits. However, the stocks and indices that are picked for trading should have high volatility and liquidity

Net annual returns of Equity F&O trades: The following table and figure represent the distribution of respondents based on their net annual returns generated from Equity F&O trades.

Table 4.2.7: Net Annual Returns of Equity F&O Trades by the Respondents

Returns (Profit/Loss)	Frequency	Percent	Cumulative Percent
Less than 0% (loss)	188	49.2	49.2
0 - 20%	118	30.9	80.1
21 - 40%	35	9.2	89.3
41 - 60%	28	7.3	96.6
61 - 80%	12	3.1	99.7
81 - 100%	1	0.3	100
Total	382	100	

Figure 4.2.7: Net Annual Returns of Equity F&O Trades by the Respondents
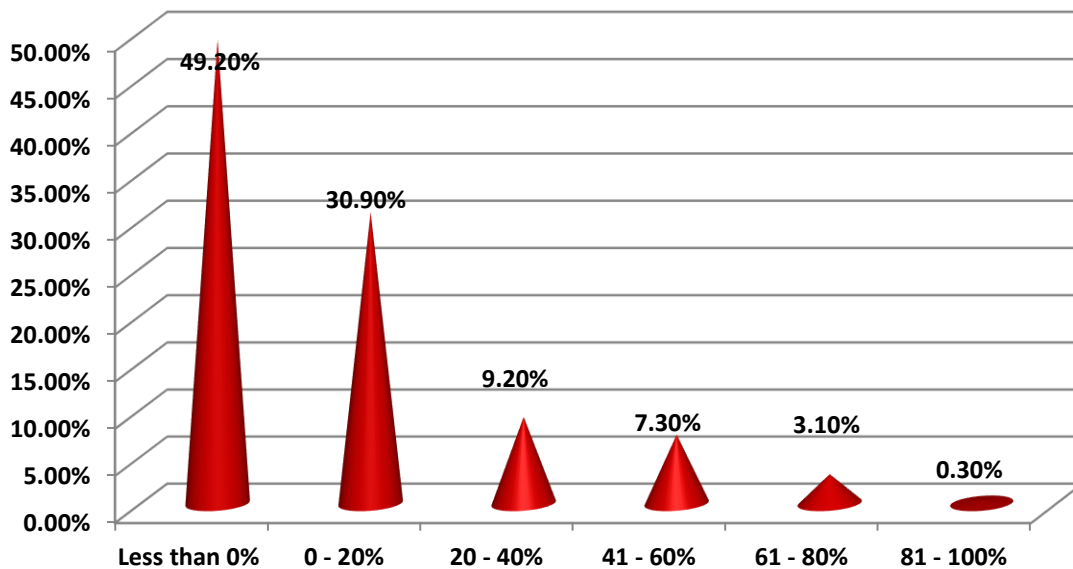
Interpretation: The table and Figure 4.2.7, indicate that 49.2% of the respondents suffer negative compounded annual returns by trading in equity futures and options. 30.9% of them are able to make a compounded return between 0 -20% annually. 9.2% of them generate 20 -40% compounded annual returns. 7.3% of them earn between 41 – 60% annually. 3% of the traders in the equity F&O segment make 61-80% whereas only 0.3% of them manage to make returns between 81 – 100% annually. Thus, it can be inferred that the majority of the traders fail very badly in trading equity derivatives. Roughly about less than 10% of them manage to make extraordinary returns.

Summary: From the percentage analysis of demographic and trading profile of the respondents, it is summarised that an average Equity F&O trader in Bengaluru city is between the age group 36 and 45 with 3-5 years of trading experience. The industry is still dominated by men. Most of the traders have high formal education and annual income between 10 and 30 lakhs per annum and spend around 10 – 40% in trading derivative contracts.

Majority of the participants in the Equity F&O market are speculators. Index options seem to be the highly preferred product among the traders and most of them prefer to long (Buy) options, probably due to the attributes like less investment and protected downside risk. Most traders tend to track more than 10 stocks/indices at a time. With the advent of technology tracking more numbers of stocks becomes easier. Finally, almost one in every two respondents agrees that their net annual returns in trading equity derivatives are negative.

4.3 RELATIONSHIP BETWEEN DEMOGRAPHIC PROFILE AND TRADING SUCCESS

Objective: To explore the relationship between demographic and trading profile of the traders and their trading success.

Tools used: Cross tabulation, Chi-Square and Cramer' V correlation are used.

Success as a factor is measured using four following variables on an ordinal 5 point Likert scale (1 being strongly disagree and 5 strongly agree).

- My winning trades are bigger than my losing trades

- I am efficient enough to cut losses and let profits run in my F&O trades

- On an average, I am able to consistently make profits over a long period of time in the F&O market

- I am happy with the overall returns that I make in derivatives trading

The average measure of success is cross tabulated with demographic and trading profile of the respondents that include age, gender, educational qualification, occupation, trading experience, trading capital, type of products traded, preferred trading strategy, no. of stocks traded and the compounded annual return generated by the trader.

Hypothesis:

H_0: Attributes AGE OF A PERSON and TRADING SUCCESS are not related and they are independent.

H_1: Attributes AGE OF A PERSON and TRADING SUCCESS are related and not independent.

Table 4.3.1: Cross Tabulation between Age and Trading Success

Age Group		SUCCESS					Total
		1	**2**	**3**	**4**	**5**	
18-25	Count	3	27	22	2	0	54
	% of Total	0.80%	7.10%	5.80%	0.50%	0.00%	14.10%
26-35	Count	2	34	50	31	0	117
	% of Total	0.50%	8.90%	13.10%	8.10%	0.00%	30.60%
36-45	Count	3	18	62	51	8	142
	% of Total	0.80%	4.70%	16.20%	13.40%	2.10%	37.20%
46-55	Count	0	6	20	24	5	55
	% of Total	0.00%	1.60%	5.20%	6.30%	1.30%	14.40%
56 and above	Count	0	0	3	7	4	14
	% of Total	0.00%	0.00%	0.80%	1.80%	1.00%	3.70%
Total	Count	8	85	157	115	17	382
	% of Total	2.10%	22.30%	41.10%	30.10%	4.50%	100.00%

Figure 4.3.1: Cross Tabulation between Age of a Person and Trading Success
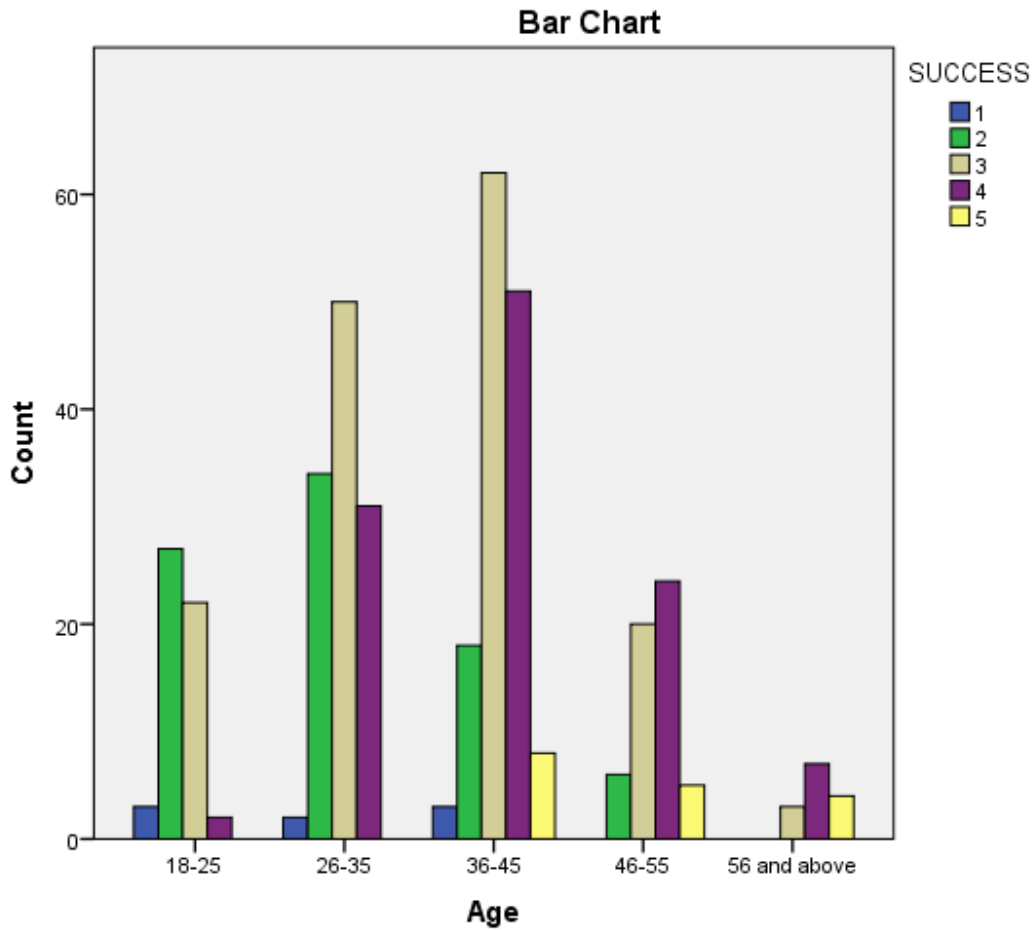
Interpretation of Table and Figure 4.3.1

Now equipped with more technology than their forerunners, youngsters are possibly poised to become the most active generation of successful individual traders. Contrary to this belief, the table and figure No.4.3.1 indicate that one in every two traders between the age group 18 and 25 disagree that they are successful in trading equity derivatives. In fact, more traders above the age 35 strongly agree that they are successful in trading equity derivatives.

Table 4.3.2: Chi-Square between Age and Trading Success

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	88.620	16	.000
Likelihood Ratio	92.784	16	.000
Linear-by-Linear Association	69.503	1	.000
N of Valid Cases	382		

Interpretation: A chi-square test of independence was performed to examine the relation between the age group of a trader and his success in trading equity derivatives. The relation between these variables was significant, $x^2(16) = 88.62$, p = 0.000 which is less than 0.05. Thus, it can be inferred that age of a trader has an effect on his/her trading success and therefore the alternate hypothesis is accepted.

Table 4.3.3: Correlation between Age and Trading Success

		Value	Approx. Sig.
Nominal by Nominal	Phi	.482	.000
	Cramer's V	.241	.000
N of Valid Cases		382	

Interpretation: From the table 4.3.3 it can be inferred that there is a very low level of association between the age group of a person and his success in trading equity derivatives. Cramer's V = .241, p = 0.00 which is less than 0.05 indicates that the correlation is statistically significant.

Hypothesis:

H_0: Attributes GENDER and TRADING SUCCESS are not related and they are independent

H_1: Attributes GENDER and TRADING SUCCESS are related and not independent.

Table 4.3.4: Cross Tabulation between Gender and Trading Success

Gender		SUCCESS					Total
		1	2	3	4	5	
Male	Count	7	72	120	98	15	312
	% of Total	1.80%	18.80%	31.40%	25.70%	3.90%	81.70%
Female	Count	1	13	37	17	2	70
	% of Total	0.30%	3.40%	9.70%	4.50%	0.50%	18.30%
Total	Count	8	85	157	115	17	382
	% of Total	2.10%	22.30%	41.10%	30.10%	4.50%	100.00%

Figure 4.3.4: Cross Tabulation between Gender and Trading Success
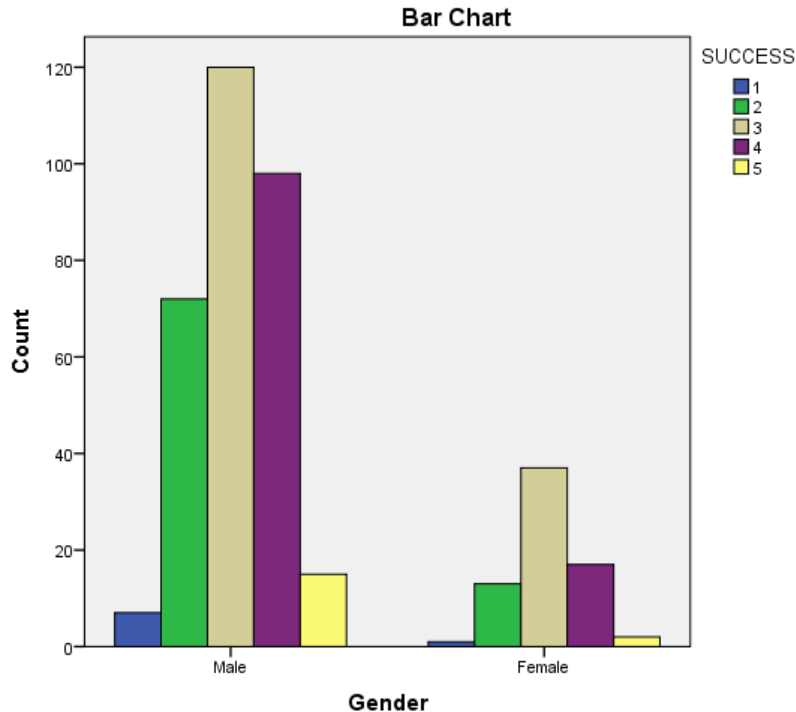
Interpretation: The table Figure 4.3.4 indicate that gender doesn't make a difference in a person being successful in trading equity derivatives.

Table 4.3.5: Chi-Square between Gender and Trading Success

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.038	4	.283
Likelihood Ratio	5.006	4	.287
Linear-by-Linear Association	.177	1	.674
N of Valid Cases	382		

Interpretation: A chi-square test of independence was performed to examine the relation between gender of a trader and his/her success in trading equity derivatives. The relation between these variables was not significant, $x^2(4) = 5.038$, p = 0.283 which is greater than 0.05. Thus, it can be inferred that though the proportion of women traders in the market is less than men, there is no significant relationship between a person's trading success and his/her gender. Shukla S. (2014) few empirical studies and websites related to stock trading state that women by nature possess better trading skills than men. Though such studies exhibit exciting results, there are other sets of researchers who have a contrary view and put forward that men and women may have considerably similar investing opinions and practices. Where variances do arise, they seem to be moulded more by societal and demographic elements—such as education, employment status and financial conditions—than by inherent characteristics.

Table 4.3.6: Correlation between Gender and Trading Success

		Value	Approx. Sig.
Nominal by Nominal	Phi	.115	.283
	Cramer's V	.115	.283
N of Valid Cases		382	

Interpretation: The association shows very less correlation between the two attributes gender and trading success, Cohen (1988), Cramer's V = .115, p > 0.05. The correlation is statistically not significant. Thus, it is evident that the stock market sees no gender, only the fittest survive.

Hypothesis:

H_0: Attributes EDUCATIONAL QUALIFICATION and TRADING SUCCESS are not related and they are independent

H_1: Attributes EDUCATIONAL QUALIFICATION and TRADING SUCCESS are related and not independent.

Table 4.3.7: Cross Tabulation between Educational Qualification and Trading Success

Educational Qualification		SUCCESS					Total
		1	2	3	4	5	
High. Secondary	Count	1	12	3	2	0	18
	% of Total	.3%	3.1%	.8%	.5%	0.0%	4.7%
Diploma	Count	5	28	32	12	0	77
	% of Total	1.3%	7.3%	8.4%	3.1%	0.0%	20.2%
Graduate	Count	2	31	69	38	2	142
	% of Total	.5%	8.1%	18.1%	9.9%	.5%	37.2%
Post Graduate	Count	0	14	53	63	15	145
	% of Total	0.0%	3.7%	13.9%	16.5%	3.9%	38.0%
	Count	8	85	157	115	17	382
	% of Total	2.1%	22.3%	41.1%	30.1%	4.5%	100.0%

Figure 4.3.7: Cross Tabulation between Educational Qualification and Trading Success
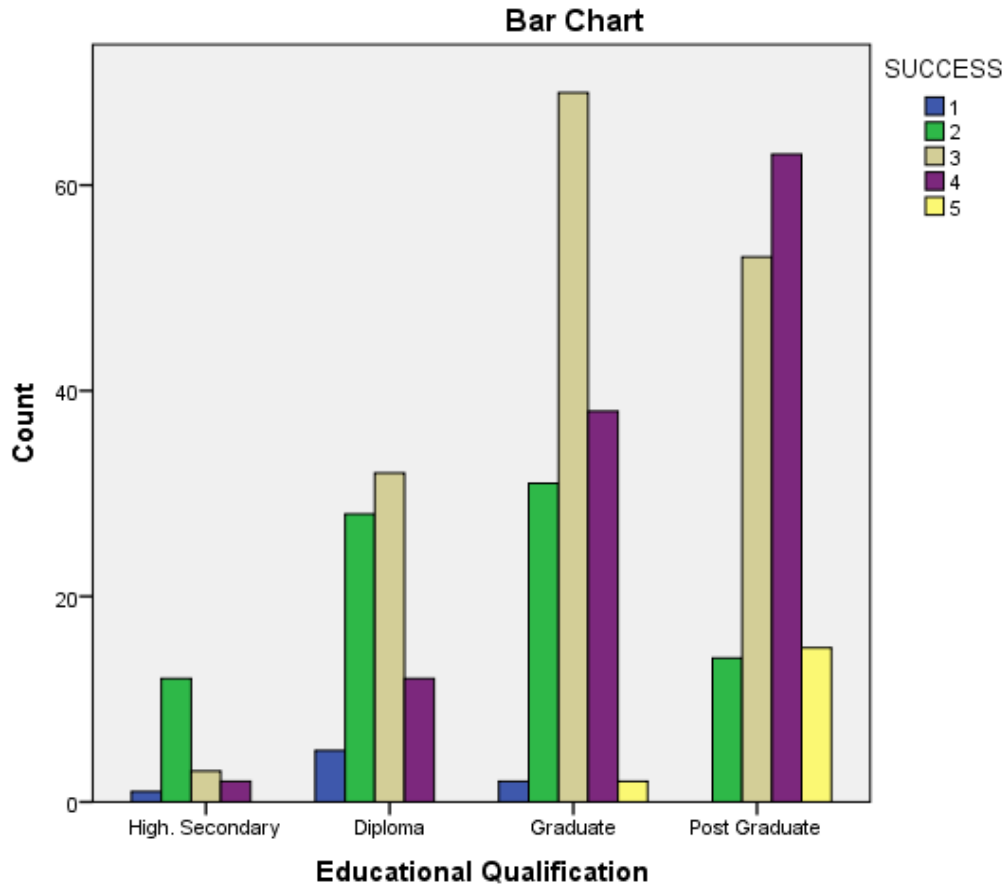
Interpretation: The table and figure 4.3.7 indicate that most of the traders with higher educational qualification strongly agree that they are successful in trading equity derivatives.

Table 4.3.8: Chi-Square between Educational Qualification and Trading Success

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	85.143	12	.000
Likelihood Ratio	85.129	12	.000
Linear-by-Linear Association	69.491	1	.000
N of Valid Cases	382		

Interpretation: A chi-square test of independence was performed to examine the relation between educational qualification of a trader and his/her success in trading equity derivatives. The relation between these variables was significant, $x^2(12) = 85.143$, p = 0.000 which is less than 0.05. Thus, it can be inferred that educational qualification of a trader has an impact on his/her trading success in equity derivatives.

Table 4.3.9: Correlation between Educational Qualification and Trading Success

		Value	Approx. Sig.
Nominal by Nominal	Phi	.472	.000
	Cramer's V	.273	.000
No. of Valid Cases		382	

Interpretation: The association shows very little correlation between the two attributes educational qualification and trading success, Cohen (1988), Cramer's V = .273, p < 0.05. The correlation is statistically significant. Thus, it is evident that higher educational qualification plays a significant role in a person's success in trading equity derivatives. But few sources claim that successful traders are not necessarily successful because they are graduates or post graduates, it's the fact that they are the students of the market.

Hypothesis:

H_0: Attributes OCCUPATION and TRADING SUCCESS are not related and they are independent

H_1: Attributes OCCUPATION and TRADING SUCCESS are related and not independent.

Table 4.3.10: Cross Tabulation between Occupation and Trading Success

Occupation		SUCCESS					Total
		1	2	3	4	5	
Field of Science and Engineering	Count	3	29	26	17	0	75
	% of Total	.8%	7.6%	6.8%	4.5%	0.0%	19.6%
Banking	Count	2	11	7	2	0	22
	% of Total	.5%	2.9%	1.8%	.5%	0.0%	5.8%
Teaching	Count	0	7	10	3	0	20
	% of Total	0.0%	1.8%	2.6%	.8%	0.0%	5.2%
Full time trader	Count	3	34	100	75	10	222
	% of Total	.8%	8.9%	26.2%	19.6%	2.6%	58.1%
Others	Count	0	4	14	18	7	43
	% of Total	0.0%	1.0%	3.7%	4.7%	1.8%	11.3%
Total	Count	8	85	157	115	17	382
	% of Total	2.1%	22.3%	41.1%	30.1%	4.5%	100.0%

Figure 4.3.10 Cross Tabulation between Occupation and Trading Success
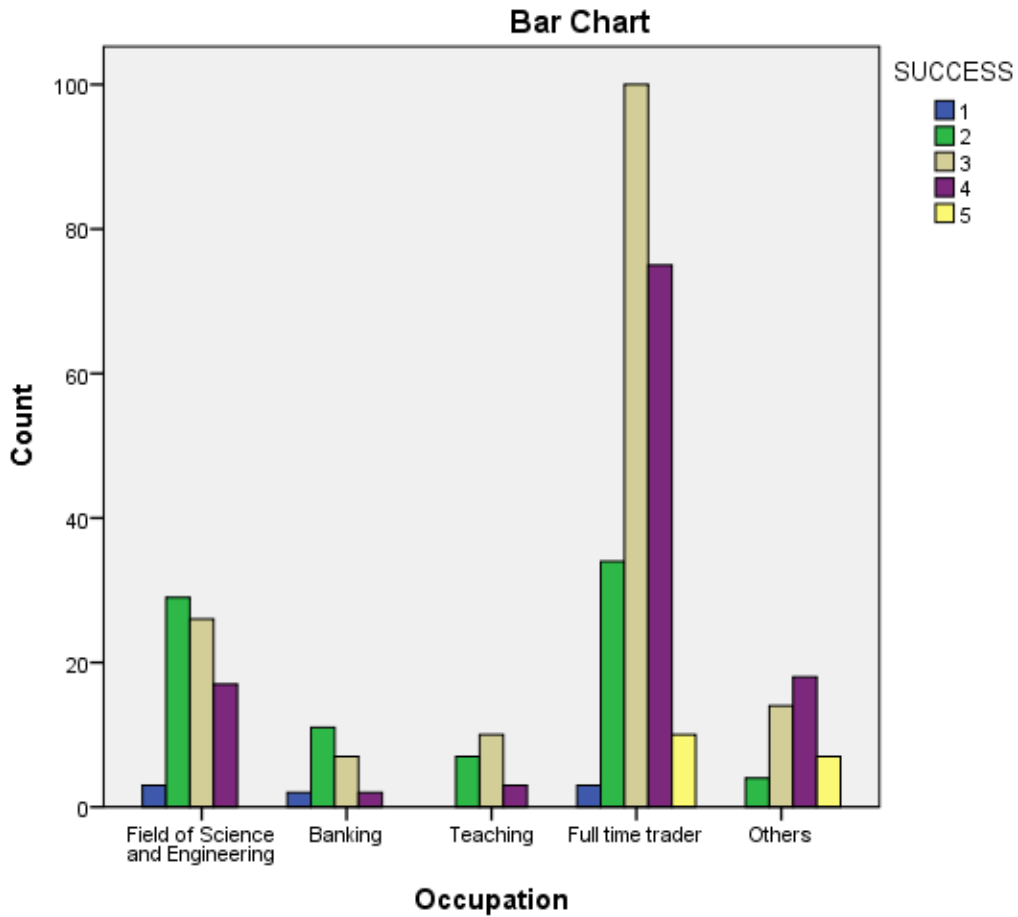
Interpretation: The Table and Figure 4.3.10 indicate that apart from Full time traders, the majority of swing traders working in the field of Science, Engineering is successful in trading derivatives. This could be attributed to their Logical reasoning, analytical and problem-solving skills.

Table 4.3.11: Chi-Square between Occupation and Trading Success

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	65.57	16	.000
Likelihood Ratio	63.190	16	.000
Linear-by-Linear Association	39.651	1	.000
N of Valid Cases	382		

Interpretation: A chi-square test of independence was performed to examine the relation between occupation of a trader and his/her success in trading equity derivatives. The relation between these variables was significant, $x^2(16) = 65.571$, $p = 0.000$ which is less than 0.05. Thus, it can be inferred that one's occupation and his/her success in day-trading are related.

Table 4.3.12: Correlation between Occupation and Trading Success

		Value	Approx. Sig.
Nominal by Nominal	Phi	.414	.000
	Cramer's V	.207	.000
N of Valid Cases		382	

Interpretation: The association shows very low level of correlation between the two attributes occupation and trading success, Cohen (1988), Cramer's V = .207, $p < 0.05$. The correlation is statistically significant.

4.4 RELATIONSHIP BETWEEN TRADING PROFILE AND TRADING SUCCESS

Hypothesis:

H_0: Attributes TRADING EXPERIENCE and TRADING SUCCESS are not related and they are independent

H_1: Attributes TRADING EXPERIENCE and TRADING SUCCESS are related and not independent.

Table 4.4.1: Cross Tabulation between Trading Experience and Trading Success

Trading Experience		SUCCESS					Total
		1	**2**	**3**	**4**	**5**	
Less than a year	Count	1	5	22	3	2	33
	% of Total	.3%	1.3%	5.8%	.8%	.5%	8.6%
1-3 years	Count	4	20	32	36	4	96
	% of Total	1.0%	5.2%	8.4%	9.4%	1.0%	25.1%
3-5 years	Count	1	35	61	38	7	142
	% of Total	.3%	9.2%	16.0%	9.9%	1.8%	37.2%
More than 5 years	Count	2	25	42	38	4	111
	% of Total	.5%	6.5%	11.0%	9.9%	1.0%	29.1%
Total	Count	8	85	157	115	17	382
	% of Total	2.1%	22.3%	41.1%	30.1%	4.5%	100.0%

Figure 4.4.1: Cross Tabulation between Trading Experience and Trading Success
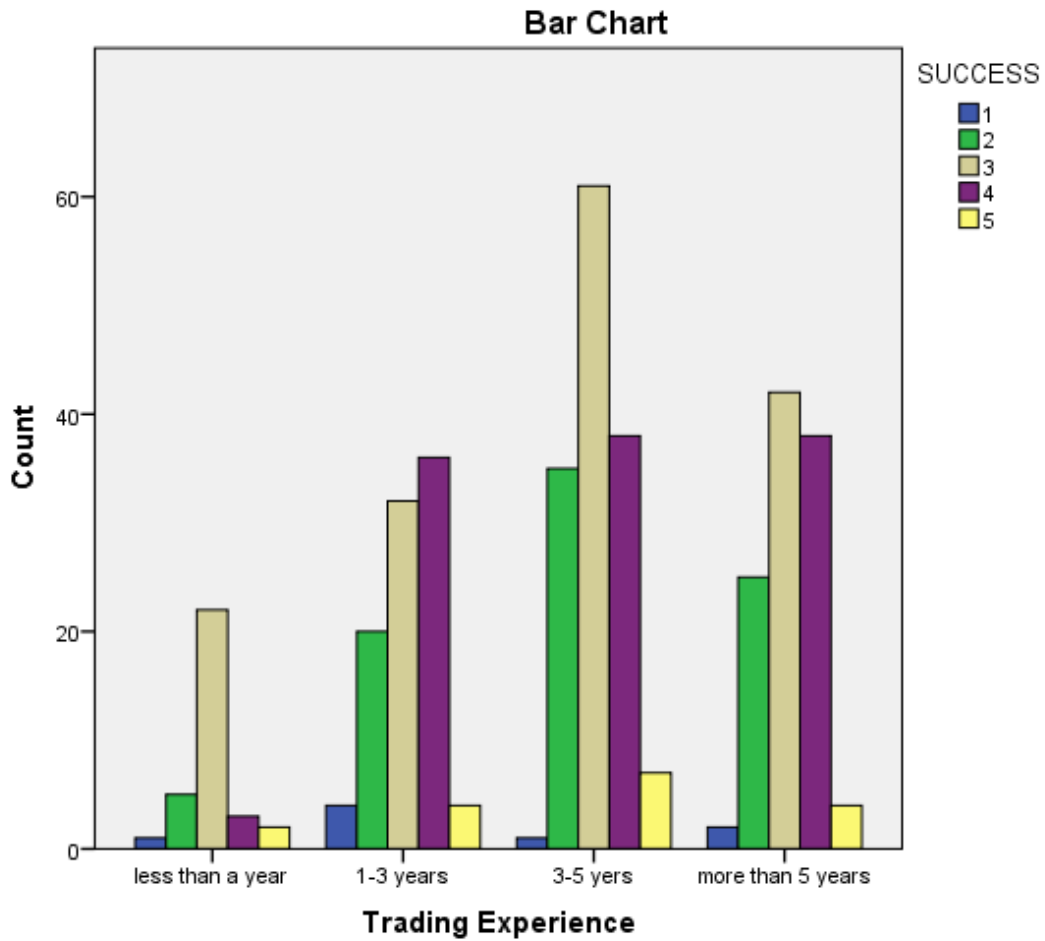
Interpretation: Contrary to the general market belief, Table and Figure 4.4.1 indicate that experience of a trader in the market does not have an effect on his/her trading success. There is no use in having a good amount of trading experiences if the trader fails to learn from the same. Many traders in the market fail to rationally learn from their past mistakes. Barber et. al (2017) reported that the vast majority of day traders are unprofitable, and many persist despite an extensive experience of losses in the market.

Table 4.4.2: Chi-Square between Trading Experience and Trading Success

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.933	12	.068
Likelihood Ratio	20.983	12	.051
Linear-by-Linear Association	.214	1	.644
N of Valid Cases	382		

Interpretation: A chi-square test of independence was performed to examine the relation between No. of years of one's trading experience and his/her success in trading equity derivatives. The relation between these variables was not significant, $x^2(12) = 19.933$, p = 0.068 which is greater than 0.05. Thus, it can be inferred that one's trading experience and his/her success in day-trading is not related.

Table 4.4.3: Correlation between Trading Experience and Trading Success

		Value	Approx. Sig.
Nominal by Nominal	Phi	.228	.068
	Cramer's V	.132	.068
N of Valid Cases		382	

Interpretation: The association shows very less correlation between the two attributes trading experience and trading success, Cohen (1988), Cramer's V = .132, p > 0.05. The correlation is statistically not significant.

Hypothesis:

H_0: Attributes TRADER TYPE and TRADING SUCCESS are not related and they are independent

H_1: Attributes TRADER TYPE and TRADING SUCCESS are related and not independent.

Table 4.4.4: Cross Tabulation between Trader Type and Trading Success

Type of a Trader		SUCCESS					Total
		1	2	3	4	5	
Full time intraday trader	Count	5	56	108	75	13	257
	% of Total	1.3%	14.7%	28.3%	19.6%	3.4%	67.3%
Positional or swing trader	Count	3	29	49	40	4	125
	% of Total	.8%	7.6%	12.8%	10.5%	1.0%	32.7%
Total	Count	8	85	157	115	17	382
	% of Total	2.1%	22.3%	41.1%	30.1%	4.5%	100.0%

Figure 4.4.4: Cross Tabulation between Trader Type and Trading Success
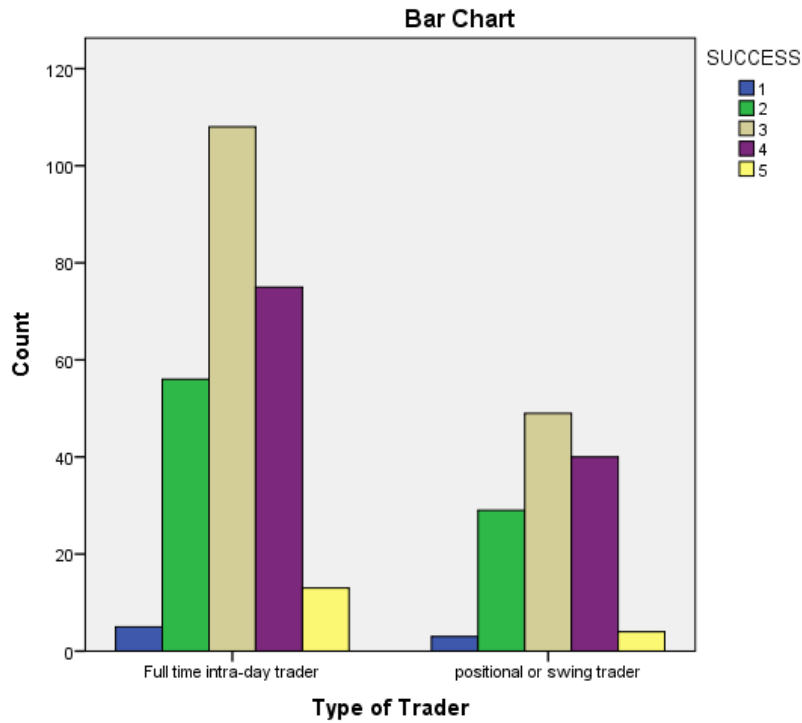
Interpretation: The main difference between day traders and swing traders is the timing. Day traders prefer to make quick money in a short span of time whereas swing traders have larger targets and work with a much longer time frame. From Table and Figure 4.4.4, it can be inferred that trading style or type has nothing to do with a person's trading success. So, one trading style isn't better than the other. It depends upon the style that suits an individual trader's circumstances.

Table 4.4.5: Chi-Square between Trader Type and Trading Success

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.196	4	.879
Likelihood Ratio	1.231	4	.873
Linear-by-Linear Association	.113	1	.737
N of Valid Cases	382		

Interpretation: A chi-square test of independence was performed to examine the relation between type of a trader (Day trader/ Swing Trader) and his/her success in trading equity derivatives. The relation between these variables was not significant, $x^2(4) = 1.196$, p = 0.879 which is greater than 0.05. Thus, it can be inferred that one's trading style or type does not have an effect on his/her success in trading equity derivatives.

Table 4.4.6: Correlation between Trader Type and Trading Success

		Value	Approx. Sig.
Nominal by Nominal	Phi	.056	.879
	Cramer's V	.056	.879
N of Valid Cases		382	

Interpretation: Though the association shows no correlation between the two attributes type of trader and trading success, Cohen (1988), Cramer's V = .056, p > 0.05. The correlation is statistically not significant.

Hypothesis:

H_0: Attributes PRODUCTS TRADED and TRADING SUCCESS are not related and they are independent

H_1: Attributes PRODUCTS TRADED and TRADING SUCCESS are related and not independent.

Table 4.4.7: Cross Tabulation between Products Traded and Trading Success

Products traded		SUCCESS					Total
		1	2	3	4	5	
Index Options	Count	4	21	55	37	2	119
	% within Products traded	3.4%	17.6%	46.2%	31.1%	1.7%	100.0%
All or Multiple Combinations	Count	1	30	39	29	8	107
	% within Products traded	0.9%	28.0%	36.4%	27.1%	7.5%	100.0%
Index Futures	Count	3	15	27	19	3	67
	% within Products traded	4.5%	22.4%	40.3%	28.4%	4.5%	100.0%
Stock Futures	Count	0	16	23	19	3	61
	% within Products traded	0.0%	26.2%	37.7%	31.1%	4.9%	100.0%
Stock Options	Count	0	3	13	11	1	28
	% within Products traded	0.0%	10.7%	46.4%	39.3%	3.6%	100.0%
Total	Count	8	85	157	115	17	382
	% within Products traded	2.1%	22.3%	41.1%	30.1%	4.5%	100.0%

Figure 4.4.7: Cross Tabulation between Products Traded and Trading Success
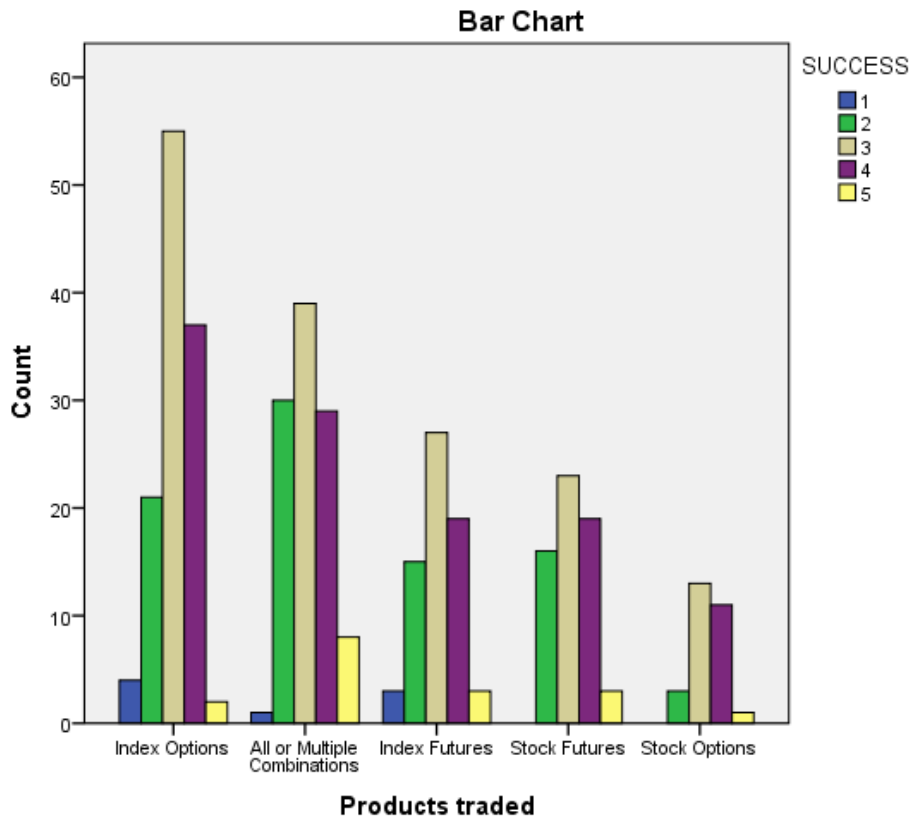
Interpretation: There are different types of products available for a trader in the equity derivatives market. He /She can choose to trade in stock futures, index futures, stock options, Index options or multiple combinations of the above. From Table and Figure 4.4.7 it can be inferred that though the majority of traders prefer to trade in index options, his trading success is not related to the type of product that he chooses to trade.

Table 4.4.8: Chi-Square between Products Traded and Trading Success

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.395	16	.360
Likelihood Ratio	19.389	16	.249
Linear-by-Linear Association	.891	1	.345
N of Valid Cases	382		

Interpretation: A chi-square test of independence was performed to examine the relation between type of products traded and his/her success in trading equity derivatives. The relation between these variables was not significant, $x^2(16) = 17.395$, p = 0.360 which is greater than 0.05. Thus, it can be inferred that one's choice of products/instruments and his/her success in trading derivatives is not related.

Table 4.4.9: Correlation between Products Traded and Trading Success

		Value	Approx. Sig.
Nominal by Nominal	Phi	.213	.360
	Cramer's V	.107	.360
N of Valid Cases		382	

Interpretation: Many traders believe that option trading is slightly advantageous than futures as a future trader has to get his direction right all the time to make profits whereas in option trading one need not necessarily have to be right all the time. The trader can choose to buy or sell options, try different option strategies like Iron condor, Strangle, straddle, etc. to suit different market conditions. But the association shows very low correlation between the two attributes type of products traded and trading success, Cohen (1988), Cramer's V = .107, p > 0.05. The correlation is statistically not significant.

Hypothesis:

H_0: Attributes TRADING STRATEGY and TRADING SUCCESS are not related and they are independent

H_1: Attributes TRADING STRATEGY and TRADING SUCCESS are related and not independent.

Table 4.4.10: Cross Tabulation between Trading Strategy and Trading Success

Preferred Trading Strategy		SUCCESS					Total
		1	2	3	4	5	
Short Call/Put	Count	3	6	23	15	0	47
	% of Total	.8%	1.6%	6.0%	3.9%	0.0%	12.3%
Combinations	Count	1	31	39	35	4	110
	% of Total	.3%	8.1%	10.2%	9.2%	1.0%	28.8%
Long Call/Put	Count	2	27	50	30	6	115
	% of Total	.5%	7.1%	13.1%	7.9%	1.6%	30.1%
Long Futures	Count	2	15	22	20	5	64
	% of Total	.5%	3.9%	5.8%	5.2%	1.3%	16.8%
Short Futures	Count	0	6	23	15	2	46
	% of Total	0.0%	1.6%	6.0%	3.9%	.5%	12.0%
Total	Count	8	85	157	115	17	382
	% of Total	2.1%	22.3%	41.1%	30.1%	4.5%	100.0%

Figure 4.4.10: Cross Tabulation between Trading Strategy and Trading Success
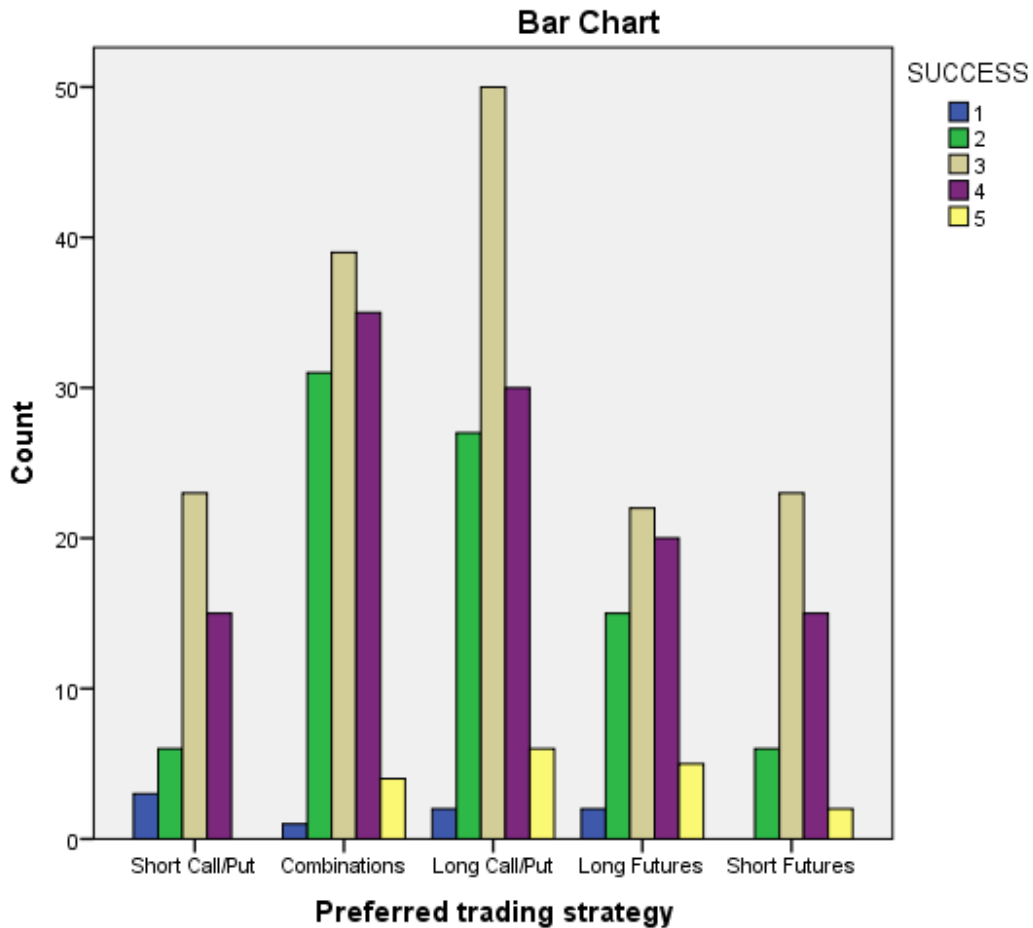
Interpretation: Globally, nearly 70% of options expire worthless, which means that, more often the writer/seller of option contracts make money while the option holders/buyers just tend to lose their premium. Due to this characteristic of time decay in options, they are also called as wasting assets. On the contrary, the Table and Figure 4.4.10 indicate that the trader's preference in his strategy (Long and Short Call or Put and Long or Short Futures) has no relationship with their trading success.

Table 4.4.11: Chi-Square between Trading Strategy and Trading Success

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.970	16	.222
Likelihood Ratio	21.940	16	.145
Linear-by-Linear Association	1.754	1	.185
N of Valid Cases	382		

Interpretation: A chi-square test of independence was performed to examine the relation between preferred trading strategies and his/her success in trading equity derivatives. The relation between these variables was not significant, $x^2(16) = 19.970$, p = 0.222 which is greater than 0.05. Thus, it can be inferred that one's choice of trading strategy and his/her success in trading derivatives is not related.

Table 4.4.12: Correlation between Trading Strategy and Trading Success

		Value	Approx. Sig.
Nominal by Nominal	Phi	.229	.222
	Cramer's V	.114	.222
N of Valid Cases		382	

Interpretation: The association shows a very low level of correlation between the two attributes one's preferred trading strategy and his/her trading success, Cohen (1988), Cramer's V = .114, p > 0.05. The correlation is statistically not significant.

Hypothesis:

H_0: NO. OF STOCKS TRACKED AND TRADED and TRADING SUCCESS are not related and they are independent

H_1: NO. OF STOCKS TRACKED AND TRADED and TRADING SUCCESS are related and not independent.

Table 4.4.13: Cross Tabulation between No. of Stocks Tracked and Traded and Trading Success

No. of stock tracked and traded		SUCCESS					Total
		1	2	3	4	5	
Less than 4 stocks and indices	Count	7	33	36	27	2	105
	% within No. of stock tracked and traded	6.7%	31.4%	34.3%	25.7%	1.9%	100.0%
5-10 stocks and indices	Count	1	33	56	35	2	127
	% within No. of stock tracked and traded	0.8%	26.0%	44.1%	27.6%	1.6%	100.0%
More than 10 stocks and indices	Count	0	19	65	53	13	150
	% within No. of stock tracked and traded	0.0%	12.7%	43.3%	35.3%	8.7%	100.0%
Total	Count	8	85	157	115	17	382
	% within No. of stock tracked and traded	2.1%	22.3%	41.1%	30.1%	4.5%	100.0%

Figure 4.4.13: Cross Tabulation between No. of Stocks Tracked and Traded and Trading Success
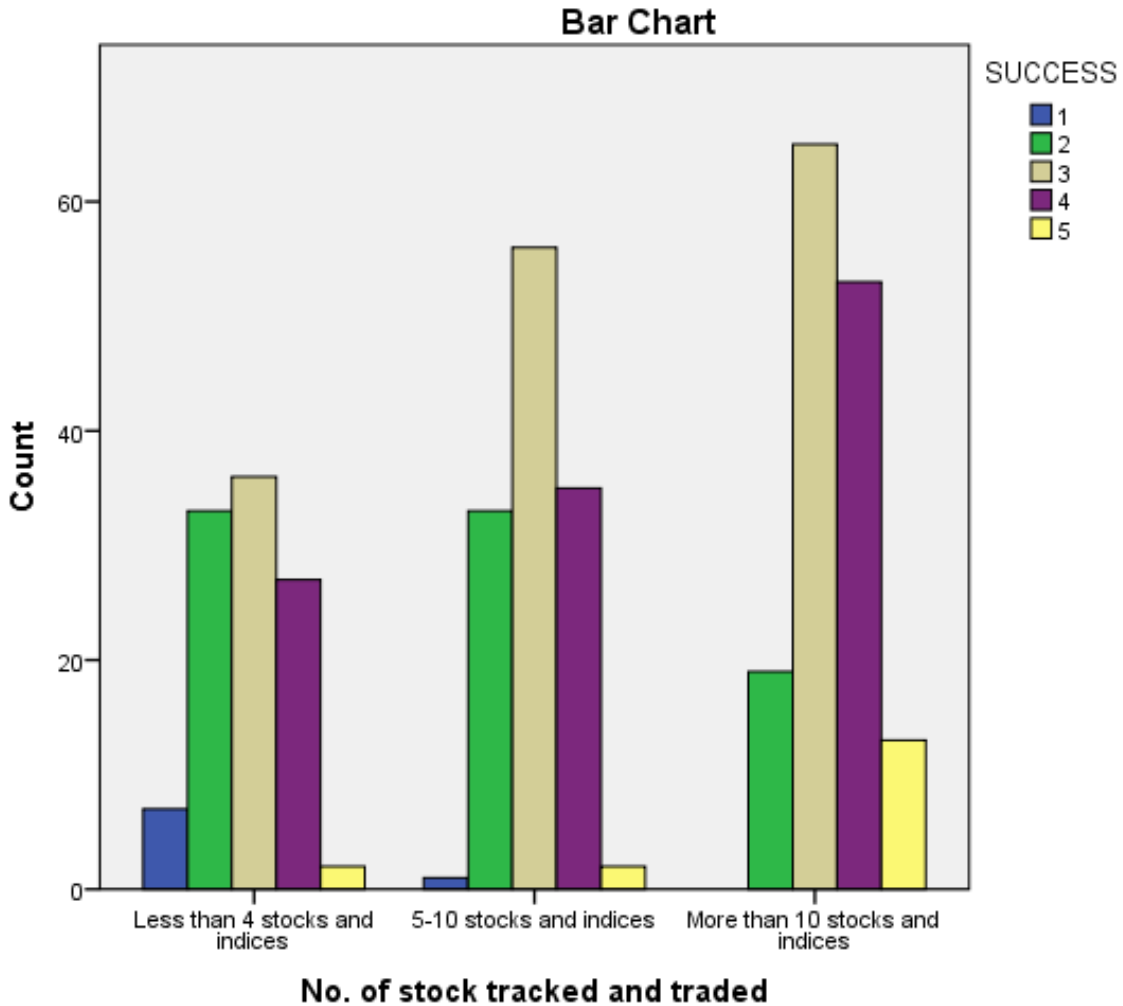
Interpretation: Many sources have different opinions about the "ideal" number of stocks to be tracked and traded. Some traders don't like to keep track of too many stocks at a time because they can't be as clear-minded or focused as following just a few stocks. Some traders like to follow a lot of stocks all at once and try to pick out the winners. The Table and Figure 4.4.13 indicate that the most of the traders who keep track of more than 10 stocks and indices, agree that they are successful in trading derivatives when compared to those who keep track of less than four stocks and Indices.

Table 4.4.14: Chi-Square between No. of Stocks Tracked and Traded
and Trading Success

Chi-Square Tests	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	39.456	8	.000
Likelihood Ratio	39.637	8	.000
Linear-by-Linear Association	25.685	1	.000
N of Valid Cases	382		

Interpretation: A chi-square test of independence was performed to examine the relation between preferred trading strategies and his/her success in trading equity derivatives. The relation between these variables was not significant, $x^2(8) = 39.456$, p = 0.000 which is lesser than 0.05. Thus, it can be inferred that there is a relationship between one's trading success and the No. of stocks and indices that he/she keeps track of.

Table 4.4.15: Correlation between No. of Stocks Tracked and
Traded and Trading Success

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.321	.000
	Cramer's V	.227	.000
N of Valid Cases		382	

Interpretation: The association shows low level of correlation between the two attributes No. of stock and Indices tracked and traded and his/her trading success, Cohen (1988), Cramer's V = .227, p <0.05. The correlation is statistically significant.

H_0: NET ANNUAL RETURNS FROM F&O TRADES and TRADING SUCCESS are not related and they are independent

H_1: NET ANNUAL RETURNS FROM F&O TRADES and TRADING SUCCESS are related and not independent.

The following analysis is performed to evaluate the concurrent validity of the Questionnaire. This is to prove as evidence that the same concept of trading success when measured in different ways yielded similar results.

Table 4.4.16: Cross Tabulation between Net Annual Returns from F&O Trades and Trading Success

Net Annual Returns from F&O trades		SUCCESS					Total
		1	**2**	**3**	**4**	**5**	
Less than 0% (loss)	Count	8	52	81	0	0	141
	% of Total	2.1%	13.6%	21.2%	0.0%	0.0%	36.9%
0 -20%	Count	0	33	62	0	0	95
	% of Total	0.0%	8.6%	16.2%	0.0%	0.0%	24.9%
21 -40%	Count	0	0	14	20	0	34
	% of Total	0.0%	0.0%	3.7%	5.2%	0.0%	8.9%
41 -60%	Count	0	0	0	18	3	21
	% of Total	0.0%	0.0%	0.0%	4.7%	.8%	5.5%
61 - 80%	Count	0	0	0	77	4	81
	% of Total	0.0%	0.0%	0.0%	20.2%	1.0%	21.2%
81 - 100%	Count	0	0	0	0	10	10
	% of Total	0.0%	0.0%	0.0%	0.0%	2.6%	2.6%
Total	Count	8	85	157	115	17	382
	% of Total	2.1%	22.3%	41.1%	30.1%	4.5%	100.0%

Figure 4.4.16: Cross Tabulation between Net Annual Returns from

F&O Trades and Trading Success
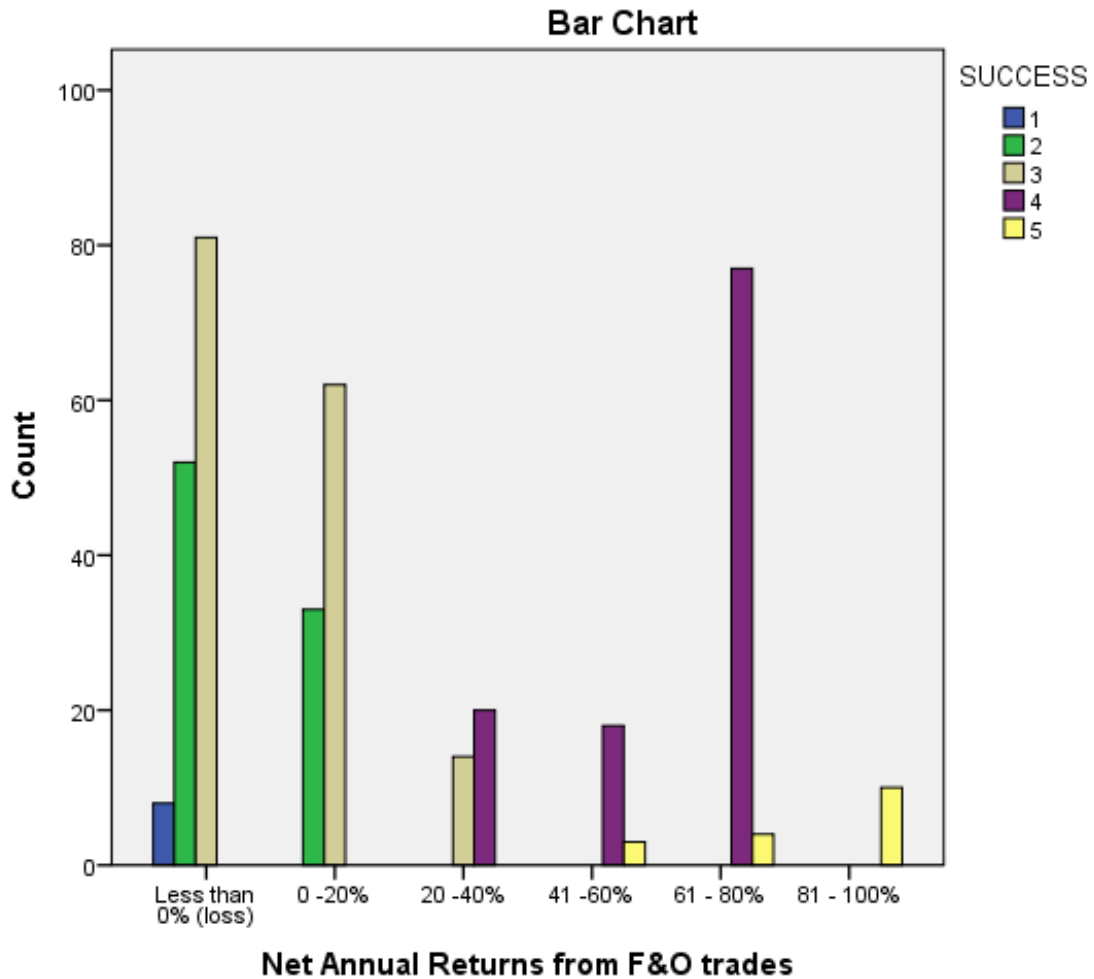
Interpretation: The Table and Figure 4.4.16 indicate that the respondents who reported higher net annual income on F&O trades have also strongly agreed that they are able to consistently make profits in the long-run, they are efficient enough to cut their losses early and let their profits run, their winning trades are bigger than their losing trades and eventually they are happy with their trading performance.

Table 4.4.17: Chi-Square between Net Annual Returns from F&O Trades and Trading Success

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	575.318[a]	20	.000
Likelihood Ratio	521.144	20	.000
Linear-by-Linear Association	249.169	1	.000
N of Valid Cases	382		

Interpretation: From the table 4.4.17 it can be inferred that the relation between these variables was significant, $x^2(20) = 575.318$, p = 0.000 which is lesser than 0.05. Thus the net annual Income in F&O trades generated by a trader has an effect on his trading success in equity derivatives.

Table 4.4.18: Correlation between Net Annual Returns from F&O Trades and Trading Success

		Value	Approx. Sig.
Nominal by Nominal	Phi	1.227	.000
	Cramer's V	.614	.000
N of Valid Cases		382	

Interpretation: The association shows a high level of correlation between the two attributes Net annual income from F&O trades and trading success, Cohen (1988), Cramer's V = .614, p <0.05. The correlation is statistically significant.

Summary: From the cross tabulation, chi-square and Cramer's V analysis, it can be concluded that the demographic variables of a trader such as his age, educational qualification and occupation has an effect on his trading success whereas his gender has no effect. Variables such as the trader's experience in the market, the type of products that he trades and his trading style and strategy has no effect on his trading success whereas the No. of stocks tracked/traded has an impact.

4.5 VARIABLES INFLUENCING TRADING SUCCESS IN EQUITY DERIVATIVES

Objective: To identify and condense the variables that influence trading success in equity derivatives into few components or factors.

Principal Component Analysis (PCA):

Jaadi Z (2021) "Principal Component Analysis, is often used to reduce the dimensionality of large data sets, by transforming a large set of variables that are correlated with each other into smaller components or factors that still preserve as much information as possible. This makes it easier to further build a regression model". In layman's terms PCA is a method of summarising data.

Assumptions:

Assumption #1: The study has many variables that are captured at the continuous level

Assumption #2: There is a linear relationship between all the variables in the study

Assumption #3: There are no outliers in the dataset

Assumption #4: Sample size is adequate to yield a dependable result.

Testing the Assumptions:

- The analysis consists of 39 variables and is free of outliers.

- Linearity between all variables, is assessed using a correlation matrix; and

- Sampling adequacy is detected using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy for the overall data set.

Table 4.5.1: Correlation Matrix of all the Variables that Influence Trading Success

Correlation Matrix

Correlation		Morning person	Balanced Diet	Enough Sleep	Physical Activity	Family Time	Efficient planning	Defined Trading objective	Exit strategy	Serious business	Disciplined Trader	Simple trading strategy	Maintain trading journal	Research	Fund&Tech Analysis	Quants	Foreign Mkt	Continuous Learning	Update Trad Plan	Avoid Obvious	Own Trad Str	Risk Reward RT	Risk Mgmt	No borrowed Money	Capital Protect	Safety	10% inv	Algo Trade	High Speed Int	Back Test	Phone or Tab Td	Stop Loss	Emotions Ctrl	Confidence	No Overconfidence	No OverTrade	Accept Responsibility	Interaction	Experiences	Seminars
Correlation	Morning person	1.000	.752	.775	.732	.703	.424	.296	.371	.344	.245	.308	.244	.390	.372	.362	.258	.282	.343	.277	.351	.282	.299	.338	.377	.382	.375	.363	.355	.257	.293	.339	.331	.394	.363	.310	.244	.265	.307	.394
	Balanced Diet	.752	1.000	.765	.725	.686	.355	.340	.375	.342	.277	.268	.268	.273	.272	.296	.244	.382	.264	.314	.346	.270	.297	.373	.285	.331	.254	.248	.368	.297	.302	.316	.381	.391	.247	.365	.281	.267	.314	.360
	Enough Sleep	.775	.765	1.000	.773	.734	.422	.316	.376	.406	.251	.392	.236	.400	.366	.339	.405	.407	.274	.385	.419	.288	.362	.380	.427	.327	.409	.381	.368	.373	.371	.395	.412	.384	.279	.347	.312	.289	.334	.403
	Physical Activity	.732	.725	.773	1.000	.689	.412	.355	.308	.400	.318	.377	.290	.391	.395	.370	.289	.347	.320	.363	.385	.358	.361	.390	.323	.329	.314	.294	.362	.331	.281	.335	.271	.329	.272	.280	.286	.357	.267	.371
	Family Time	.703	.686	.734	.689	1.000	.391	.304	.311	.361	.332	.315	.290	.307	.371	.350	.350	.363	.267	.313	.310	.328	.379	.374	.380	.281	.315	.313	.335	.334	.419	.291	.410	.381	.386	.297	.230	.359	.366	.398
	Efficient planning	.424	.355	.422	.412	.391	1.000	.723	.719	.715	.725	.699	.699	.372	.360	.341	.394	.282	.406	.312	.296	.307	.426	.370	.369	.403	.352	.288	.366	.333	.347	.367	.310	.373	.286	.307	.384	.317	.273	.403
	Defined Trading objective	.296	.340	.316	.355	.304	.723	1.000	.723	.726	.716	.710	.687	.350	.260	.294	.350	.271	.362	.291	.242	.307	.323	.308	.260	.371	.294	.232	.368	.391	.327	.319	.361	.340	.408	.366	.268	.411		
	Exit strategy	.371	.375	.376	.308	.311	.719	.723	1.000	.683	.700	.693	.642	.302	.349	.307	.258	.314	.322	.362	.347	.328	.323	.250	.334	.405	.379	.247	.367	.373	.414	.395	.362	.418	.393	.319	.370	.248	.402	.376
	Serious business	.344	.342	.406	.400	.361	.715	.726	.683	1.000	.711	.731	.684	.370	.292	.397	.309	.288	.365	.263	.247	.331	.302	.277	.273	.406	.299	.235	.276	.343	.340	.382	.371	.405	.315	.308	.441	.314	.229	.415
	Disciplined Trader	.245	.277	.251	.318	.332	.725	.716	.700	.711	1.000	.652	.636	.306	.313	.376	.370	.292	.395	.311	.255	.347	.373	.285	.306	.357	.359	.251	.398	.380	.331	.303	.279	.401	.323	.363	.438	.411	.263	.323
	Simple trading strategy	.308	.266	.392	.377	.315	.699	.710	.693	.731	.652	1.000	.714	.398	.333	.413	.346	.395	.351	.276	.388	.371	.393	.308	.398	.315	.382	.338	.267	.305	.306	.347	.342	.423	.339	.358	.408	.292	.234	.397
	Maintain trading journal	.244	.268	.236	.290	.290	.699	.687	.642	.684	.636	.714	1.000	.328	.314	.383	.277	.305	.286	.242	.264	.276	.406	.352	.312	.321	.311	.305	.273	.305	.339	.329	.275	.300	.270	.265	.377	.355	.209	.403
	Research	.390	.273	.400	.391	.301	.372	.350	.302	.370	.306	.398	.328	1.000	.647	.703	.656	.603	.688	.669	.684	.393	.413	.391	.350	.359	.379	.262	.239	.254	.272	.301	.355	.293	.349	.348	.321	.375	.227	.422
	Fund&Tech Analysis	.372	.272	.366	.395	.307	.360	.260	.349	.292	.313	.333	.314	.647	1.000	.673	.633	.669	.665	.688	.686	.288	.305	.263	.373	.329	.391	.254	.321	.236	.264	.323	.395	.295	.354	.377	.347	.396		
	Quants	.362	.296	.339	.370	.371	.341	.294	.307	.397	.376	.413	.383	.703	.673	1.000	.676	.684	.698	.705	.694	.367	.316	.337	.391	.373	.310	.331	.327	.267	.323	.278	.421	.329	.440	.354	.404	.293	.300	.346
	Foreign Mkt	.258	.244	.405	.289	.350	.394	.350	.258	.309	.370	.346	.277	.656	.633	.676	1.000	.653	.662	.666	.655	.307	.411	.374	.366	.323	.334	.395	.315	.300	.405	.282	.349	.240	.335	.305	.346	.409	.349	.359
	Continuous Learning	.282	.382	.407	.347	.363	.282	.271	.314	.288	.292	.395	.305	.603	.669	.684	.653	1.000	.686	.678	.663	.272	.406	.336	.414	.348	.389	.272	.400	.354	.337	.381	.410	.309	.264	.367	.336	.363	.365	.346
	Update Trad Plan	.343	.264	.274	.320	.267	.406	.362	.322	.365	.395	.351	.286	.688	.665	.698	.662	.686	1.000	.698	.673	.326	.386	.302	.289	.415	.296	.289	.390	.334	.283	.357	.340	.333	.416	.364	.371	.386	.242	.451
	Avoid Obvious	.277	.314	.365	.383	.313	.312	.291	.362	.263	.311	.276	.242	.669	.688	.705	.666	.678	.698	1.000	.695	.392	.372	.328	.308	.369	.306	.260	.335	.409	.390	.368	.351	.307	.345	.398	.261	.341	.376	.299
	Own Trad Str	.351	.346	.419	.385	.310	.296	.242	.347	.247	.255	.388	.264	.684	.686	.694	.655	.663	.673	.695	1.000	.386	.395	.307	.428	.296	.351	.343	.299	.282	.348	.309	.374	.350	.368	.306	.402	.298	.328	.433
	Risk Reward RT	.282	.270	.288	.358	.328	.307	.307	.328	.331	.347	.371	.276	.393	.288	.397	.307	.272	.326	.392	.386	1.000	.637	.650	.608	.628	.619	.327	.260	.444	.348	.268	.404	.408	.339	.445	.335	.359	.262	.295
	Risk Mgmt	.299	.297	.362	.361	.379	.426	.323	.323	.302	.373	.393	.406	.413	.305	.316	.411	.406	.386	.372	.395	.637	1.000	.678	.640	.633	.640	.323	.348	.470	.409	.409	.344	.375	.314	.365	.412	.439	.309	.376
	No borrowed Money	.338	.373	.380	.390	.374	.370	.308	.250	.277	.285	.308	.352	.391	.263	.337	.374	.336	.302	.328	.307	.650	.678	1.000	.636	.604	.625	.372	.291	.365	.321	.445	.316	.369	.310	.356	.270	.327	.332	.363
	Capital Protect	.377	.285	.427	.323	.360	.369	.260	.334	.273	.306	.398	.312	.350	.373	.381	.366	.414	.289	.308	.428	.608	.640	.636	1.000	.609	.670	.275	.259	.305	.331	.407	.316	.439	.271	.268	.399	.292	.370	.377
	Safety	.382	.331	.327	.329	.261	.403	.371	.405	.406	.357	.315	.321	.359	.329	.373	.323	.369	.296	.369	.296	.628	.633	.604	.609	1.000	.630	.329	.333	.437	.304	.291	.261	.257	.262	.246	.314	.273	.335	.359
	10% inv	.375	.254	.409	.314	.315	.352	.294	.379	.299	.359	.382	.311	.379	.391	.310	.334	.389	.296	.351	.351	.616	.640	.625	.670	.630	1.000	.388	.375	.345	.386	.375	.345	.310	.316	.404	.336	.366	.370	.418
	Algo Trade	.363	.248	.381	.294	.313	.288	.232	.247	.235	.251	.339	.305	.262	.254	.331	.395	.272	.289	.260	.343	.327	.323	.372	.275	.329	.388	1.000	.544	.589	.609	.252	.274	.292	.365	.387	.244	.296	.237	.370
	High Speed Int	.355	.368	.368	.362	.335	.366	.369	.367	.276	.398	.267	.273	.239	.321	.327	.315	.400	.390	.335	.298	.260	.348	.251	.259	.333	.375	.544	1.000	.604	.604	.334	.341	.270	.277	.430	.397	.304	.281	.401
	Back Test	.257	.297	.373	.331	.334	.333	.291	.373	.343	.380	.305	.305	.254	.236	.287	.300	.354	.334	.409	.262	.444	.470	.365	.305	.437	.345	.589	.604	1.000	.596	.340	.328	.269	.268	.382	.378	.391	.276	.306
	Phone or Tab Td	.293	.302	.371	.281	.419	.347	.366	.414	.340	.331	.306	.339	.272	.342	.323	.405	.337	.283	.390	.348	.346	.409	.321	.331	.304	.386	.609	.604	.596	1.000	.310	.320	.319	.438	.381	.303	.302	.418	.320
	Stop Loss	.339	.316	.395	.335	.291	.387	.391	.395	.382	.303	.347	.329	.301	.285	.278	.292	.381	.357	.368	.309	.268	.409	.445	.407	.291	.375	.252	.334	.340	.310	1.000	.582	.552	.533	.599	.521	.315	.408	.369
	Emotions Ctrl	.331	.381	.412	.271	.410	.310	.327	.362	.371	.279	.342	.275	.355	.264	.421	.346	.410	.340	.351	.374	.404	.344	.316	.316	.261	.345	.274	.341	.328	.320	.582	1.000	.583	.599	.596	.575	.376	.342	.433
	Confidence	.394	.391	.384	.329	.361	.373	.319	.418	.405	.401	.423	.300	.293	.323	.329	.240	.309	.333	.307	.350	.408	.375	.369	.439	.257	.310	.292	.270	.369	.319	.552	.583	1.000	.559	.545	.554	.370	.363	.302
	No Overconfidence	.363	.247	.279	.272	.386	.296	.361	.393	.315	.323	.339	.270	.349	.395	.440	.335	.264	.416	.345	.368	.339	.314	.316	.271	.262	.316	.316	.277	.268	.438	.533	.599	.559	1.000	.564	.480	.277	.412	.423
	No OverTrade	.310	.365	.347	.280	.297	.307	.340	.319	.308	.363	.359	.265	.348	.295	.354	.305	.367	.364	.398	.306	.445	.365	.356	.268	.246	.404	.387	.341	.320	.319	.599	.596	.545	.564	1.000	.507	.310	.378	.327
	Accept Responsibility	.244	.281	.312	.286	.230	.384	.408	.370	.441	.438	.406	.377	.321	.354	.404	.346	.136	.371	.261	.402	.335	.412	.270	.399	.314	.336	.244	.397	.378	.303	.521	.575	.554	.480	.507	1.000	.417	.261	.419
	Interaction	.265	.267	.289	.357	.359	.317	.366	.248	.314	.411	.292	.355	.375	.377	.293	.409	.393	.186	.341	.296	.359	.439	.327	.292	.273	.396	.296	.304	.391	.302	.315	.376	.370	.277	.310	.417	1.000	.497	.507
	Experiences	.307	.314	.334	.267	.366	.273	.268	.402	.229	.263	.234	.209	.227	.347	.300	.349	.365	.242	.376	.328	.262	.309	.332	.370	.335	.370	.237	.281	.276	.418	.406	.342	.363	.412	.378	.261	.497	1.000	.500
	Seminars	.394	.360	.403	.371	.398	.403	.411	.376	.415	.323	.397	.403	.422	.396	.346	.359	.346	.451	.299	.433	.295	.376	.363	.377	.359	.418	.370	.401	.306	.320	.369	.433	.302	.423	.327	.419	.507	.500	1.000

Interpretation of Table 4.5.1

The level of correlation considered commendable of a variable's inclusion is generally r ≥ 0.3. Thus, we examine the correlation matrix for any variable that does not have at least one correlation with another variable where r ≥ 0.3. The assumption of Linearity is satisfied as all the variables have at least one correlation with another variable greater than the 0.3 cut-off.

*Refer annexure for better readability of the table 4.5.1

Table 4.5.2 Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.877
Bartlett's Test of Sphericity	Approx. Chi-Square	13313.311
	Df	741
	Sig.	.000

Interpretation of Table 4.5.2

Kaiser- Meyer –Olkin measure is an index which defines sampling adequacy. The KMO measure is 0.877, which is very good; or "Meritorious" on Kaiser's (1974) classification of measure values, as shown in the table below:

KMO Measure	Meaning
KMO ≥ 9	Marvelous
0.8 ≤ KMO < 0.9	Meritorious
0.7 ≤ KMO < 0.8	Middling
0.6 ≤ KMO < 0.7	Mediocre
0.5 ≤ KMO < 0.6	Miserable
KMO < 0.5	Unacceptable

Bartlett's test of sphericity helps a researcher to decide, whether the results of factor analysis are worth considering and whether we should continue analysing the research work. The value in the above table is statistically significant ($p < .0001$), indicating that there is a high level of correlation between the variables, thus making it adequate to apply factor analysis.

Table 4.5.3: The KMO Measure for Each Individual Variable

Anti-image Matrices

a. Measures of Sampling Adequacy(MSA)

Interpretation of Table 4.5.3

KMO measures in the Anti – Image correlation should be as close to 1 as possible, with values above 0.5 an absolute minimum and greater than 0.8 considered good. Variables with low KMO measure (KMO < .5), should be considered eliminating from the analysis. In the above table it was found that all the KMO measure values in the Anti-Image correlation matrix are greater than 0.5. Hence sampling adequacy is met. The split of the correlation table for better clarity is included in the appendix.

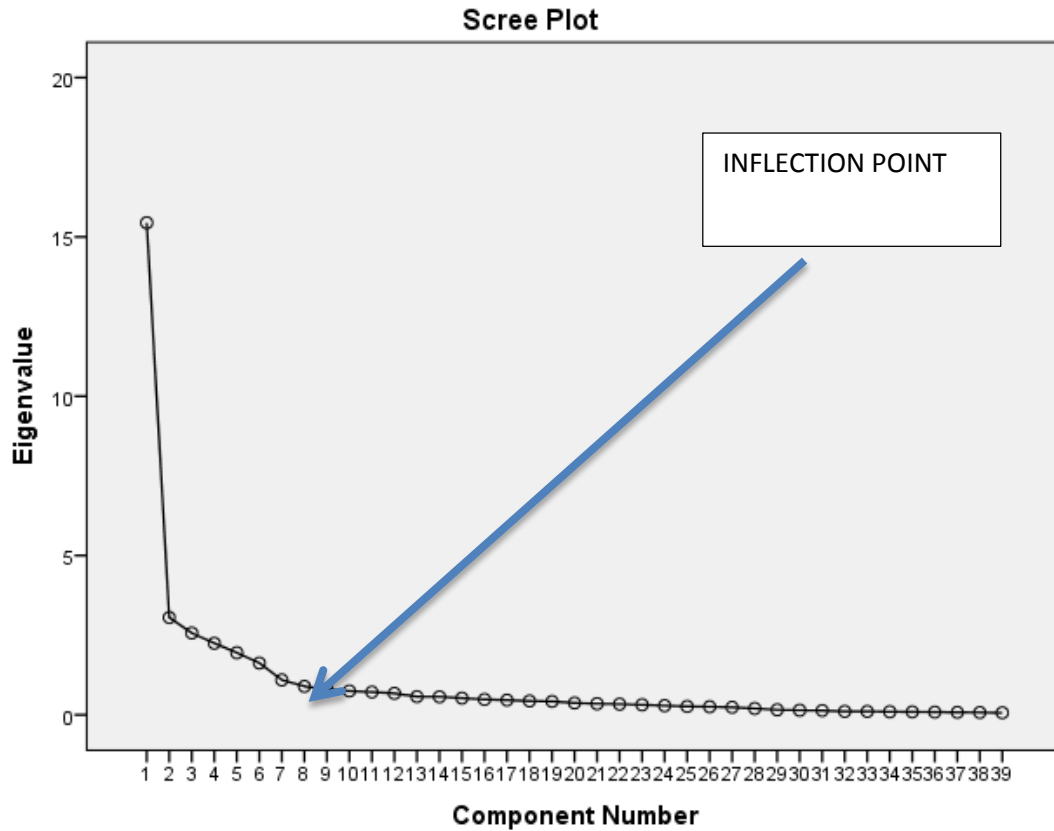## Table 4.5.4: Total Variance Explained by the Components

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	15.443	39.598	39.598	15.443	39.598	39.598	5.855	15.014	15.014
2	3.055	7.832	47.431	3.055	7.832	47.431	5.392	13.825	28.839
3	2.567	6.583	54.013	2.567	6.583	54.013	4.209	10.792	39.631
4	2.248	5.763	59.776	2.248	5.763	59.776	4.025	10.319	49.951
5	1.949	4.996	64.773	1.949	4.996	64.773	3.828	9.815	59.766
6	1.626	4.168	68.941	1.626	4.168	68.941	2.837	7.274	67.040
7	1.094	2.806	71.747	1.094	2.806	71.747	1.836	4.707	71.747
8	.894	2.292	74.039						
9	.799	2.049	76.088						
10	.747	1.916	78.003						
11	.713	1.828	79.831						
12	.672	1.723	81.554						
13	.569	1.460	83.014						
14	.566	1.452	84.465						
15	.524	1.345	85.810						
16	.482	1.235	87.045						
17	.462	1.185	88.231						
18	.435	1.116	89.347						
19	.418	1.073	90.420						
20	.371	.951	91.371						
21	.349	.896	92.266						
22	.334	.857	93.124						
23	.315	.808	93.931						
24	.287	.736	94.667						
25	.262	.671	95.338						
26	.252	.646	95.984						
27	.236	.604	96.588						
28	.199	.509	97.098						
29	.158	.405	97.503						
30	.143	.366	97.869						
31	.134	.345	98.214						
32	.106	.272	98.486						
33	.105	.269	98.755						
34	.095	.244	98.998						
35	.092	.236	99.235						
36	.084	.216	99.451						
37	.078	.199	99.650						
38	.074	.190	99.839						
39	.063	.161	100.000						

Extraction Method: Principal Component Analysis.

Interpretation of Table 4.5.4

The Eigenvalue of a given component measures the variance in all the variables which is accounted for by the component. From the above table it is clear that there are a total seven distinct components that have Eigenvalues greater than 1 from the given set of 39 variables. The first component explains 15.443 eigenvalues of variance (the "Total" column), which is 15.443/39 x 100 = 39.598% of the total variance, as reported in the "% of Variance" column. The second component explains 3.055 eigenvalues of variance (the "Total" column), which = 7.832% of the total variance. Likewise, there are SEVEN components that explain 71.747% of the total variance.

Figure 4.5.4: Scree Plot

Interpretation: The above is a scree plot of the total variance explained by each component (its "eigenvalue") against its respective component. It shows the components on the X axis and the corresponding Eigenvalues on the Y axis. As there are as many components as the variables, there are 39 components in the scree plot. Those components before the (last) inflection point in the graph (see above) are to be retained. Gugginotes (2013) the inflection point is meant to represent the point where the graph begins to level out and subsequent components add little to the total variance. From the above Figure seven components are considered for the study. The variables with eigenvalue which is >1 are considered for rotation further.

Table 4.5.5: Rotated Component Matrix

	Component						
	1	2	3	4	5	6	7
Quantitative ability	.801						
Avoid Obvious	.794						
Update Trading Plan	.792						
Own Trading Strategy not relying on tips	.784						
Use Fund &Tech Analysis	.780						
Well-researched strategy for stock picking	.771						
Track foreign market	.756						
Continuous Learning	.750						
Defined Trading objective		.824					
Serious business		.815					
Efficient planning		.797					
Maintain trading journal		.794					
Disciplined Trader		.791					
Simple trading strategy		.778					
Exit strategy		.762					
Not trading on borrowed Money			.769				
Capital Protection			.752				
Risk Reward Ratio			.751				
Risk management			.742				
Diversification			.729				
Risk only what is affordable to lose			.729				
Morning person				.832			
Balanced Diet				.830			
Enough Sleep				.827			
Physical Activity				.799			
Family Time				.759			
Emotional control					.751		
No Revenge trading					.717		
Not losing Confidence					.713		

	Component						
	1	**2**	**3**	**4**	**5**	**6**	**7**
No Overconfidence					.693		
Stop Loss					.686		
Accept Responsibility					.625		
Back Tested strategy						.746	
Phone /Tab /P.C. to trade						.733	
High Speed Internet						.732	
Algo Trade						.730	
Follow others Experiences							.717
Interaction with like-minded people							.675
Attend Seminars/workshop							.615

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

 a. Rotation converged in 6 iterations.

Interpretation of Table 4.5.5

A principal components analysis (PCA) was run on 39 variables. The suitability of PCA was assessed prior to analysis. Inspection of the correlation matrix showed that all the variables have at least one correlation coefficient greater than 0.3. The overall Kaiser-Meyer-Olkin (KMO) measure was 0.877 with individual KMO measures all greater than 0.7, classifications of 'Marvellous' according to Kaiser (1974). Bartlett's test of sphericity was statistically significant ($p < .0005$), indicating that the data was likely factorable.

PCA revealed seven components that had eigenvalues greater than one and which explained 39.598 %, 7.832%, 6.583%, 5.763%, 4.996%, 4.168% and 2.806% of the total variance, respectively.

Visual inspection of the screen plot indicated that SEVEN components should be retained (Cattell, 1966). The Seven-component solution explained 71.747% of the total variance.

The seven components are explained in detail in the following tables:

Table 4.5.6: Rotated Loading of Component 1 – Knowledge

Variables	Variable Description	Rotated Loading	% of Variance	Eigen Value
V_{15}	Quantitative Aptitude	.801		
V_{19}	Avoid Obvious	.794		
V_{18}	Regularly update trading plan	.792		
V_{20}	Build own trading strategy and not rely on tips	.784		
V_{14}	Use technical Figures and fundamentals analysis	.780	39.59%	15.443
V_{13}	Well-researched strategy for stock picking.	.771		
V_{16}	Tracking the foreign markets	.756		
V_{17}	Focused on continuous learning	.750		

Interpretation: The Eigen value of component 1 is 15.443 with 39.59% variance. The eight variables mentioned in the table are all related to knowledge and analytical skills. Factor 1 has very high significant loading on all the grouped variables.

The Highest significant loading is on the variable Trader's quantitative ability (0.801), Followed by the trader's ability to avoid the obvious signals in the market and trying to stay ahead or behind the crowd (0.794), Regular updation of trading plan to include new ideas and eliminate bad ones (0.792), Trader's ability to build his own trading strategy and not relying on brokers tips (0.784), Use of technical Figures, indicators and fundamental analysis to make trading decisions (0.78), Having a well-researched strategy to pick stocks/contracts to trade (0.771), Keeping track of events happening in the foreign markets (0.756) and the last is being focused on learning more about the market each day (0.75).

Table 4.5.7: Rotated Loading of Component 2– Trading Behaviour

Variables	Variable Description	Rotated Loading	% of Variance	Eigen Value
V_7	Defined Trading objective	0.824		
V_9	Trading as a serious business	0.815		
V_6	Efficient planning	0.797		
V_{12}	Maintain trading journal	0.794	7.832%	3.055
V_{10}	Disciplined Trader	0.791		
V_{11}	Simple trading strategy	0.778		
V_8	Exit strategy	0.762		

Interpretation: The Eigen value of component 2 is 3.055 with 7.832% variance. The seven variables mentioned in the table are all related to the trading behaviour. Component 2 has very high significant loading on all the grouped variables.

The Highest significant loading is on the variable trading objective (0.824), Followed by whether the trader treats and manages his F&O trades like any other serious business (0.815), Planning trades efficiently (0.797), Maintenance of a trading journal to introspect his/her trading behaviour (0.794), highly disciplined trader (0.791), keeping the trading strategy simple (0.778) and the last is having a good exit strategy in place for all the trades (0.762).

Table 4.5.8: Rotated Loading of Component 3 – Risk Management

Variables	Variable Description	Rotated Loading	% of Variance	Eigen Value
V_{23}	Do not trade on borrowed Money	0.769	6.583%	2.567
V_{24}	Ensure capital protection	0.752		
V_{21}	Conscious about the Risk Reward Ratio	0.751		
V_{22}	Risk management strategy in place for every trade	0.742		
V_{26}	Diversification	0.729		
V_{25}	Risk only what is affordable to lose	0.729		

Interpretation: The Eigen value of component 3 is 2.567 with 6.583% variance. The six variables mentioned in the table are all related to Risk Management. Component 4 has very high significant loading on all the grouped variables.

The Highest significant loading is on the variable – not trading on borrowed money (0.769) followed by capital protection (0.752), Conscious about the risk reward ratio (0.751), Having a good risk management strategy in place for every trade (0.742), Not investing more than 10% of the capital in single stock (0.729) and the last is risking only what is affordable to lose (0.729).

Table 4.5.9: Rotated Loading of Component 4 – Personal Habits

Variables	Variable Description	Rotated Loading	% of Variance	Eigen Value
V1	Morning person	0.832	5.763%	2.248
V2	Balanced Diet	0.83		
V3	Enough Sleep	0.827		
V4	Physical Activity	0.799		
V5	Family Time	0.759		

Interpretation: The Eigen value of component 4 is 2.248 with 5.763% variance. The five variables mentioned in the table are all related to the personal habits of a trader. Component 4 has very high significant loading on all the grouped variables. The Highest significant loading is on the variable being a morning person (0.832) followed by having a balanced diet (0.83), Enough Sleep (0.827), Physical activity (0.799 and the last is spending quality time with loved ones (0.762).

Table 4.5.10: Rotated Loading of Component 5 – Emotional Intelligence

Variables	Variable Description	Rotated Loading	% of Variance	Eigen Value
V_{32}	Emotional control	0.751		
V_{35}	No Revenge trading	0.717		
V_{33}	Not losing Confidence at times of loss	0.713		
V_{34}	No Overconfidence when booking profits	0.693	5.00%	1.949
V_{31}	Never ignore Stop Loss even in winning trade	0.686		
V_{36}	Accept Responsibility and never blame	0.625		

Interpretation: The Eigen value of component 5 is 1.949 with 5% variance. The six variables mentioned in the table are all related to the Trader's Emotional Intelligence. Component 5 has high significant loading on all the grouped variables.

The Highest significant loading is on the variable Emotional Control (0.751) followed by No revenge trading, i.e.: not trying to make up for a losing trade by trading more. (0.717), Not losing confidence at times of loss (0.713) and moderate loading variables such as -Not becoming overconfident while booking profits (0.693), Never ignore Stop Loss even in winning trade (0.686) and the last is accepting responsibility when something goes wrong and never blaming others (0.625).

Table 4.5.11: Rotated Loading of Component 6 – Tech Savviness

Variables	Variable Description	Rotated Loading	% of Variance	Eigen Value
V_{29}	Back Tested strategy trading strategy	0.746	4.17%	1.626
V_{30}	Phone /Tab /P.C. to trade	0.733		
V_{28}	High Speed Internet	0.732		
V_{27}	Algo Trading	0.73		

Interpretation: The Eigen value of component 6 is 1.626 with 4.17% variance. The four variables mentioned in the table are all related to Tech Savviness of a trader. Component six has high significant loading on all the grouped variables. The Highest significant loading is on the variable – Back-testing of the trading strategy (0.751). Followed by Trading use all types of gadgets and not getting tied down to a trading platform that is desktop only (0.733), Use of High-Speed Internet connection for trading F&O contracts (0.732) and lastly using computer algorithms to automate the trading process (0.732).

Table 4.5.12: Rotated Loading of Component 7 – Social Interaction

Variables	Variable Description	Rotated Loading	% of Variance	Eigen Value
V_{38}	Follow others Experiences	0.717		
V_{37}	Interaction with like-minded people	0.675	2.81%	1.094
V_{39}	Attend Seminars/workshop	0.615		

Interpretation: The Eigen value of component 7 is 1.094 with 2.81% variance. The three variables mentioned in the table are all related to Social Interaction of a trader. Component seven has high to moderate significant loading on all the grouped variables. The Highest significant loading is on the variable –The Highest significant loading is on the variable - following and paying attention to the experiences of successful traders and fund managers (0.717) Moderate loading on the variable - Active interaction and discussion with like-minded people on the subject of F&O (0.675) and also participating in workshops/seminars/symposiums related to F&O trading (0.615).

Summary: From the above analysis 39 variables that are expected to influence trading success in equity derivatives are reduced and grouped into seven components that include Knowledge, Trading Behaviour, Risk Management Skills, Emotional Intelligence, Personal habits, Tech Savviness and Social Interaction.

4.6 MODELLING THE FACTORS INFLUENCING TRADING SUCCESS IN EQUITY DERIVATIVES MARKET

Objective: To test the theoretical model of factors that influence trading success in equity derivatives market

Structural Equation modelling (SEM)

(Joreskog, 1977; Wright, 1934) The purpose of structural equation modelling (SEM) is to define a theoretical causal model consisting of a set of predicted covariances between variables and then test whether it is plausible when compared to the observed data.

Two goals in SEM are:

- To understand the patterns of correlation/covariance among a set of variables

- To explain as much of their variance as possible with the model specified (Kline, 1998).

The hypothesised model can be tested statistically in a simultaneous analysis of the entire system of variables to determine the extent to which it is consistent with the data. Byrne, B. M. (2001) "If the goodness of fit is adequate, the model argues for the plausibility of postulated relations among variables; if it is inadequate, the tenability of such relations is rejected."

The hypothesised model is as given below:

H_0 – Factors such as Knowledge and Analytical skills, Trading Behaviour, Risk Management skills, Psychological factor, Personal Habits, Technology factor and Social factor of a trader have no significant influence in determining his success in trading equity derivatives

H_1 – Trading knowledge and Analytical skills that a person possess has no significant influence in determining his success in trading equity derivatives

H_2 – Trading Behaviour of a person has no significant influence in determining his success in trading equity derivatives

H_3 – Risk management skills of a trader has a significant influence in determining his success in trading equity derivatives

H_4 – Psychological factor of a trader has a significant influence in determining his success in trading equity derivatives

H_5 – Personal habits of a trader has a significant influence in determining his success in trading equity derivatives

H_6 – A Trader's Tech Savviness has a significant influence in determining his success in trading equity derivatives

H_7 – Social factor of a trader has a significant influence in determining his success in trading equity derivatives

Latent vs Observed variables

With regard to the measurement instrument, the variables are classified as latent and observed variables.

Latent variables

Latent variables are not observed directly. They are operationally defined in terms of behaviour believed to represent it. Byrne, B. M. (2010) "Because latent variables are not observed directly, it follows that they cannot be measured directly". Thus, the latent variables of interest are defined in terms of behaviour assumed to represent it.

Observed variables

Pandey, K. N. (2016) "The measured scores (measurements) are termed as observed or manifest variables, and they serve as indicators of the underlying construct which they presume to represent". Hence one latent variable has four or more statements (observed variables) to represent it.

Table 4.6.1: List of Latent and Observed Variables

Observed Variables			Latent Variables
Behaviour01	Risk01	Habits01	Trading Behaviour
Behaviour02	Risk02	Habits02	Knowledge and Analytical Skills
Behaviour03	Risk03	Habits03	Personal Habits
Behaviour04	Risk04	Habits04	Risk Management Skills
Behaviour05	Risk05	Habits05	Psychological factor or Emotional Intelligence
Behaviour06	Risk06	Tech01	Social Factor
Behaviour07	EI01	Tech02	Technology Factor
Knowledge01	EI02	Tech03	Trading Success
Knowledge02	EI03	Tech04	
Knowledge03	EI04	Success01	
Knowledge04	EI05	Success02	
Knowledge05	EI06	Success03	
Knowledge06	Social01	Success04	
Knowledge07	Social02		
Knowledge08	Social03		

Figure 4.6.1: Structural Equation Model – Factors Influencing Trading Success
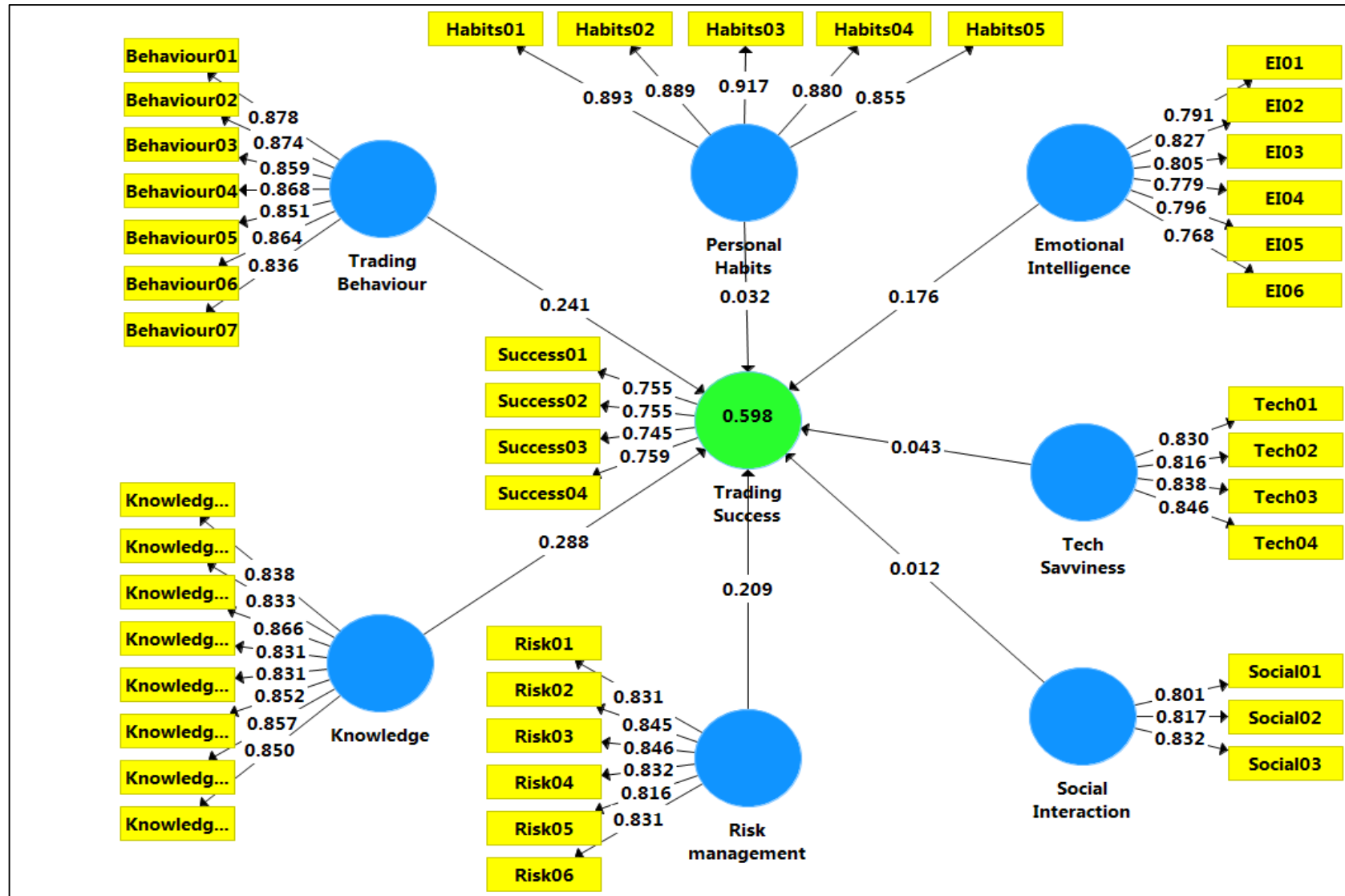
Interpretation of Figure 4.6.1: The above model shows that *Trading Success* is influenced by Trading Behaviour, Knowledge, Tech Savviness, Personal Habits, Risk Management Skills, Social Interaction and Emotional Intelligence (psychological factor) of a trader

The following are explained below in detail:

- Explanation of target endogenous variable variance

- Inner model path coefficient sizes and significance

- Outer model loadings and significance

- Indicator reliability

- Internal consistency reliability

- Convergent validity

- Discriminant validity

In the PLS-SEM diagram, there are two types of numbers:

Numbers in the circle: indicates the variance of the latent variable being explained by the other latent variables.

Numbers on the arrow: "These are called the path coefficients. They explain how strong the effect of one variable is on another variable. The weight of different path coefficients enables us to rank their relative statistical importance" Wong, K. K. (2019).

Explanation of target endogenous variable variance

The coefficient of determination, R^2, is 0.598 for the TRADING SUCCESS endogenous latent variable. This means that the seven components (TRADING BEHAVIOUR, KNOWLEDGE, TECH SAVVINESS, PERSONAL HABITS, RISK MANAGEMENT SKILLS, SOCIAL INTERACTION, and EMOTIONAL INTELLIGENCE) explain 59.8% of the variance in TRADING SUCCESS.

Table 4.6.2: Inner Model Path Coefficient Sizes and Significance

Trading Behaviour	0.241	
Knowledge	0.288	
Tech Savviness	0.043	
Personal Habits	0.032	Trading Success
Risk Management Skills	0.209	
Social Interaction	0.012	
Emotional Intelligence	0.176	

Interpretation

- The inner model suggests that for every 1 unit of change in the trading behaviour there is 0.241 unit of change in his/her trading success in equity F&O market. Trading behaviour includes having a clear trading objective and planning trades efficiently, managing trade like any other serious business, maintaining a trading journal for further introspection, etc.

- For every 1 unit of change in the knowledge of the trader, there is 0.288 unit of change in his/her trading success. Knowledge includes his/her ability to make meaning out of the market movements, continuous learning coupled with his information handling skills like mathematical and analytical ability.

- Similarly for every 1 unit of change in his/her risk management skills and emotional intelligence there is 0.209 units and 0.176 units of change in his/her trading success. Emotional intelligence includes not becoming overconfident while booking profits nor losing confidence while making loss, not succumbing to revenge trading, etc.

- In this era of Algo trading and HFT, every 1 unit if change in the trader's computer literacy or his tech savviness explains only 0.043 units of variance in his/her trading success.

- Every 1 unit of change in his/her personal habits such as waking up early, physical fitness, quality time with family and friends, etc. contribute only 0.032 units of variance in his/her trading success

- Every 1 unit of change in his/her interaction with peers and like-minded people explain only 0.012 units of variance in his/her trading success.

Table 4.6.3: Outer Model Loadings and Indicator Reliability

Latent Variables	Indicator	Outer Loadings	Indicator Reliability	Cronbach's Alpha	Composite Reliability	AVE
Trading Behaviour	Behaviour01	0.878	0.771	0.942	0.953	0.742
	Behaviour02	0.874	0.764			
	Behaviour03	0.859	0.738			
	Behaviour04	0.868	0.753			
	Behaviour05	0.851	0.724			
	Behaviour06	0.864	0.746			
	Behaviour07	0.836	0.699			
Emotional Intelligence	EI01	0.791	0.626	0.883	0.911	0.631
	EI02	0.827	0.684			
	EI03	0.805	0.648			
	EI04	0.779	0.607			
	EI05	0.796	0.634			
	EI06	0.768	0.59			
Personal Habits	Habits01	0.893	0.797	0.932	0.949	0.787
	Habits02	0.889	0.79			
	Habits03	0.917	0.841			
	Habits04	0.88	0.774			
	Habits05	0.855	0.731			
Knowledge	Knowledge01	0.838	0.702	0.943	0.952	0.714
	Knowledge02	0.833	0.694			
	Knowledge03	0.866	0.75			
	Knowledge04	0.831	0.691			
	Knowledge05	0.831	0.691			
	Knowledge06	0.852	0.726			
	Knowledge07	0.857	0.734			
	Knowledge08	0.85	0.723			

Latent Variables	Indicator	Outer Loadings	Indicator Reliability	Cronbach's Alpha	Composite Reliability	AVE
Risk Management	Risk01	0.831	0.691	0.912	0.932	0.695
	Risk02	0.845	0.714			
	Risk03	0.846	0.716			
	Risk04	0.832	0.692			
	Risk05	0.816	0.666			
	Risk06	0.831	0.691			
Social Interaction	Social01	0.801	0.642	0.751	0.857	0.667
	Social02	0.817	0.667			
	Social03	0.832	0.692			
Tech Savviness	Tech01	0.755	0.57	0.852	0.9	0.693
	Tech02	0.755	0.57			
	Tech03	0.745	0.555			
	Tech04	0.759	0.576			
Trading Success	Success01	0.83	0.689	0.747	0.84	0.568
	Success02	0.816	0.666			
	Success03	0.838	0.702			
	Success04	0.846	0.716			

Interpretation of Table 4.6.7: Abusafiya, H. A. M., & Suliman, S. A. M. (2017) "Measurement loadings are the standardized path weights connecting the factors to the indicator variables. As data is standardized automatically in SmartPLS, the loadings vary from 0 to 1. The loadings should be significant. In general, the measurement model is said to be stronger and reliable, if the loading values are larger". From the above table it can be inferred that all the indicators are significant as their values are above 0.7

(Ringle, 2006: 11) The value 0.70 is a criterion for minimum measurement loadings. Another rule of thumb is that an indicator with a measurement loading in the .40 to .70 range should be dropped if dropping it improves composite reliability (Hair et al., 2014: 103)

- **Indicator Reliability**

    Indicator reliability may be interpreted as the square of the measurement loading: thus, .708^2 = .50 reliability (Hair et al., 2014: 103). They may be considered a form of item reliability coefficients for reflective models: the closer the loadings are to 1.0, the more reliable that latent variable. By convention, for a well-fitting reflective model, path loadings should be above 70 (Henseler, Ringle, & Sarstedt, 2012: 269).

The indicator reliability score for all the indicators is above 0.5, which indicates that the above model is a moderately good fitting reflective model.

- **Construct Reliability and Validity**

    Internal Consistency Reliability

Cronbach's Alpha

    Traditionally, "Cronbach's alpha" is used to measure internal consistency reliability in social science research but it tends to provide a conservative measurement in PLS-SEM.

Composite Reliability

    Prior literature has suggested the use of "Composite Reliability" as a replacement (Bagozzi and Yi, 1988; Hair et al., 2013). Composite reliability should be 0.7 or higher. If it is an exploratory research, 0.6 or higher is acceptable. (Bagozzi and Yi, 1988).

    In the table 4.6.7 both Cronbach's Alpha and Composite Reliability are more than 0.7, indicating that all the Constructs have good internal consistency reliability scores.

- **Convergent validity**

    To check convergent validity, each latent variable's Average Variance Extracted (AVE) is evaluated. Again, from the above table, it is found that all of the AVE values are greater than the acceptable threshold of 0.5, so convergent validity is confirmed.

- **Discriminant validity**

Table 4.6.4: Discriminant Validity

	Emotional Intelligence	Knowl edge	Personal Habits	Risk Management	Social Interaction	Tech Savviness	Trading Behaviour	Trading Success
Emotional Intelligence	**0.794**							
Knowledge	0.507	**0.845**						
Personal Habits	0.467	0.45	**0.887**					
Risk Management	0.517	0.5	0.459	**0.834**				
Social Interaction	0.557	0.51	0.466	0.509	**0.817**			
Tech Savviness	0.494	0.451	0.449	0.498	0.49	**0.832**		
Trading Behaviour	0.517	0.448	0.436	0.469	0.47	0.447	**0.862**	
Trading Success	0.597	0.629	0.469	0.599	0.513	0.492	0.598	**0.754**

Fornell and Larcker (1981) suggest that the square root of AVE in each latent variable can be used to establish discriminant validity, if this value is larger than other correlation values among the latent variables.

In SmartPLS output, in the Fornell-Larcker criterion table, the square root of AVE appears in the diagonal cells in bold and correlations appear below it. Therefore, in absolute value terms, if the top number (which is the square root of AVE) in any factor column is higher than the numbers (correlations) below it, there is discriminant validity.

From the above table 4.6.4 we can observe that AVE of each Latent Variable is larger than other correlation values among the latent variable.

Table 4.6.5: Model Hypothesis Testing

Hypothesis Testing	T Statistics	P Values
Emotional Intelligence -> Trading Success	3.734	0.001
Knowledge -> Trading Success	6.056	0.000
Personal Habits -> Trading Success	0.757	0.449
Risk management -> Trading Success	4.186	0.000
Social Interaction -> Trading Success	0.278	0.781
Tech Savviness -> Trading Success	1.121	0.263
Trading Behaviour -> Trading Success	5.165	0.000

Interpretation: From the table 4.6.9 it can be inferred that the above-mentioned alternate Hypothesis H1, H2, H3 and H4 are accepted whereas H5, H6 and H7 are rejected.

Summary: From the SEM analysis it can be summarised that the factors emotional intelligence, trading success, risk management and trading behaviour has a significant influence in determining a trader's success in trading equity derivatives whereas factors such as the traders' personal habits, computer literacy (tech savviness) and his social interaction have an influence but it is not significant enough in determining his/her success in trading.