A Study on the Factors that Influence Trading Success among Individual Equity Derivative Traders in Bengaluru City

Deepika[*] and Sudhamathi[†]

Abstract

Derivative trading triggers extensive public attention because it is time and again considered an easy way to make money. This study aims at identifying the variables that influence trading success in the equity F & O market by thoroughly reviewing the literature and then condensing these variables into a few factors or components using Principle Component Analysis. Using PCA, 39 variables were grouped into components such as knowledge, trading behaviour, risk management skills, emotional intelligence, tech-savviness, personal habits and social interaction. These seven components explained 71.747 % of the total variance.

Keywords: Behavioural Finance, Equity Derivatives, Trading Success, F & O Trading, Equity F & O

1. Introduction

Derivative contracts are a probabilistic gamble on forthcoming events. Derivatives can be used to hedge risk, but they also offer attractive means for speculation that is extremely risky. The societal concern of derivatives trading mainly depends on whether the market is controlled by hedgers or speculators. The usage and popularity of equity derivatives are gaining huge momentum in

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[*] Department of Business and Management, CHRIST (Deemed to be University), Bangalore; deepika.sr@christuniversity.in

[†] Department of Management, GRGSMS, PSGR Krishnammal College for Women, Peelamedu, Coimbatore, Tamilnadu; sudhamathi@grgsms.ac.in

the Indian market. Economic Times (Jan 21, 2021) reported that the National Stock Exchange (NSE) of India had been ranked No. 1 in the world in terms of total contracts traded (volume) for the past two consecutive years beating the CME group Inc. of the USA and the Korean exchange.

Burugula P. (2018) reported that the individual investor's participation in the equity derivatives market sored very high. The average daily turnover of individual investors had nearly doubled from Rs 4.7 lakh crore to Rs 9 lakh crore during the year 2017. The market regulator SEBI is concerned about the increasing popularity of derivatives among individual traders. The regulator is alarmed that innocent traders are being falsely sold these derivatives products by intermediaries and thus exposing them to capital risk. SEBI is afraid that innocent investors are experimenting their hands in highly risky financial instruments, unaware of the adverse financial consequences. In fact, it is not easy to make consistent profits in the long run and be a successful derivatives trader. It is rare for the brokerage industry to publish the failure rates of their clients as they are concerned that the truth will hinder them from getting new clients. In reality, unofficial estimates suggest that 90% of the day traders fail. However, no research paper exists that validates this number. There are hardly any empirical studies in the Indian market that explore the characteristics of the winning traders. Tharp, V. K. (2021, P. 22) stated that "*As an NLP devotee, I've always believed that if someone can do something well, that skill can be taught to anyone else*". Therefore, it is important to study the factors that drive successful trading in the Indian equity F & O market so that other traders in the market who are looking out to be successful can emulate the characteristics of the prosperous traders.

2. Review of Literature

Buffett, W., Graham, B. (1985), Warren Buffett, in his preface to the fourth edition of the book "Intelligent Investor", have mentioned that to be a successful investor over a lifetime one does not require unusual IQ, good business acumen or inside information. All that is required is intelligence for making appropriate decisions and emotional control. Sperandeo, V. (1998) stated that change is the only constant in the market. It requires discipline, research,

attention to detail, and continuous study to be a successful trader. Thomas Oberlechner (2004) studied the perception of forex professionals about the important characteristics of successful traders. The study reported that out of 23 characteristics, the ability to react quickly followed by trading discipline, experience in the market, attentiveness and emotional control was rated highly important, whereas social skills, computer skills and organisational skills were not considered to be important for a successful trader.

Hamzei, F. (2010) stated that successful traders get to the top by identifying the strategy that best suits them; none of the traders agree that they know the equity market completely. Even master traders who have moved on to greater levels of sophistication understand the need to conquer the basics and grow beyond them. Setting achievable goals, strong emotional control, adaptability to varying market situations, accepting responsibility, staying away from revenge trading, developing a trading plan, guarding the capital, weighing probabilities, and being an ardent learner of the market are the skills that enable a person to be a leading trader.

Schwager, J. D. (2012) interviewed successful traders in America; one among them was Dr. Van K. Tharp, who studied the psychology of winning in-depth. Recent interest in Dr. Tharp's research has been on questioning and analysing prosperous traders and coming up with a model for success. His theory is that it is possible to improve the trading performance of less successful traders by coaching them with traits that successful traders possess. In 1982, he developed a test called "investment psychology inventory" to measure the winning and losing traits of traders in the market. Thousands of investors and speculators, including the author of the book "the market wizards", had taken the test. His test encompassed eleven areas of measure grouped into three categories that include: the psychological factor, the management and discipline factor and the decision-making factor. The psychological factor consists of five areas that include well-rounded personal life, an optimistic attitude, the drive to make money, the absence of conflict, and accountability for outcomes. His study results reveal that trading success is not highly correlated with the traders drive to make money. The management factor includes management of risk, endurance and instinct. The decision-

making factor includes a thorough understanding of technical aspects of the market, ability to think independently and make informed decisions. Based on the results of the test, it was found that the understanding of technical aspects of the market has only very little relationship to trading success. It is also found that traders with poor risk management skills and emotional intelligence tend to be unsuccessful in the market.

Schwager, J. D. (2012), unlike others the most popular trader, Ed Seykota's desk is not flanked by an array of quote screens, or, for that matter, even a single screen. His trading is largely confined to the few minutes it takes to run his computer program that generates signals for the next day.

Jago investor (2014) pointed out that knowledge and trading strategy only influences a person to be successful in trading by 10 - 15%. Other factors such as emotional intelligence and money management skills play a crucial role in the trading success of a person. Marshall F. (2014) Richard Wyckoff's recipe for competence that would eventually enable a trader to be successful includes information, trading plan, experience and analysis. A trader who misses any of these competencies will be ineffective. He also stated that trading is an independent endeavour. It is good to be a member of a trading community, but the trading decisions should be established on one's own thinking, which in turn is based on facts. He also mentioned that trading is much easier when the main motive is not to make money. Money making should not be the immediate goal but the outcome of good trading. A trader should not be concerned about profit-making; he should rather focus on doing the right thing.

Ammann & Schaub (2016) documented that traders with good historical performance are most likely to talk about their executed strategies in social trading platforms. The study also exhibited strong proof that the investment/trading decisions of the members in social trading platforms are influenced by key traders' communication about the market. It is mostly the individual retail traders who rely on social interactions while making investment decisions.

Braz (2018) studied the characteristics of self-perceived successful traders. The study reported that the characteristics such as risk acceptance, emotional intelligence and being proactive are positively associated with the successful performance of a trader.

Thus, from the above literature Buffett, W., Graham, B. (1985), Thomas Oberlechner (2004), Hamzei, F. (2010), Schwager, J. D. (2012), Marshall F. (2014), Jagoinvestor (2014) and Braz (2018), it can be inferred that factors such as risk management skills, emotional intelligence, well-rounded personal life, trading behaviour and knowledge (research and continuous learning), tech-savviness and social interaction influence trading success.

3. Objective of the study

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

3.1. Methodology

Bengaluru city is attributed to its highly educated workforce with investible surplus making it a suitable destination for conducting the survey. For this study, Primary data was collected using a self – administered questionnaire between August 2019 and February 2020 from 420 active equity derivative traders in the city. 38 responses were rejected because of insufficient information. Finally, the analysis was carried out using the data disclosed by 382 respondents. The questionnaire had 57 questions, out of which the first 14 questions are categorical regarding the demographic details of the respondents and certain basic questions to understand the profile of the trader like their no. of years of trading experience, whether they are full time or swing trader, etc. The rest are ordinal 5-point Likert scale questions covering all the independent factors such as personal habits and lifestyle, trading behaviour, knowledge, risk management skills, emotional factors, technology and social factors. The last part includes questions related to variables measuring the dependent factor, i.e.,trading success.

3.2. Tool used for Data Analysis: 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 terms, PCA is a method of summarising data.

3.3. 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: The sample size is adequate to yield a dependable result.

3.4. 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 1: 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 1

Kaiser - Meyer – Olkin measure is an index that 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:

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 2: Total Variance Explained by the components

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	2.24	5.763	59.776	4.025	10.319	49.951

				8					
5	1.949	4.996	64.773	1.9499	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	10.94	2.806	71.747	1.0094	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	.464	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

3 5	.092	.236	99.23 5							
3 6	.087	.216	99.45 1							
3 7	.078	.199	99.65 0							
3 8	.074	.190	99.83 9							
3 9 .	.063	.161	100.0 00							

Interpretation of Table 2

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 of 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 1: Scree Plot

Scree Plot

INFLECTION POINT

(Chart: Scree Plot showing Eigenvalue on the Y-axis (0 to 20) against Component Number on the X-axis (1 to 39). An arrow points to the inflection point around component 11.)
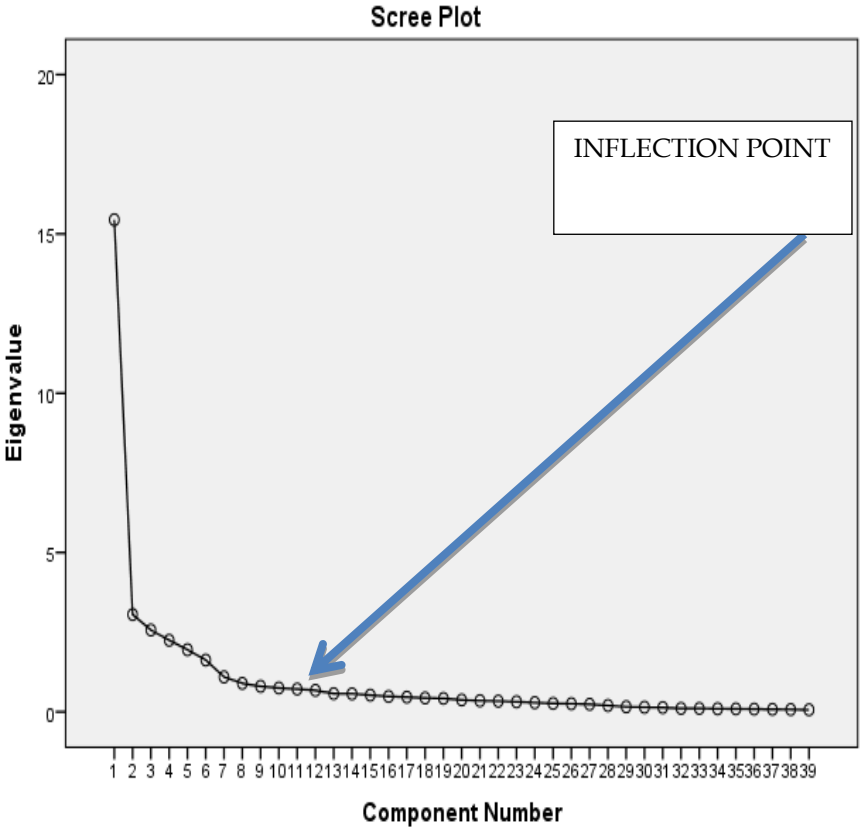
Interpretation: The above is a scree plot of the total variance explained by each component (its "eigenvalue") against its respective component. It shows the components on the X-axis and the corresponding Eigenvalues on the Y-axis. As there are as many components as the variables, there are 39 components in the scree plot. Those components before the (last) inflection point in the graph (see above) are to be retained. Guggi notes (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 an eigenvalue, which is >1, are considered for further rotation.

Table 3: 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		
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 3

- 39 variables used to measure the trading success in equity derivatives are reduced and grouped into seven factors/components, which include – knowledge, trading behaviour, risk management skills, emotional intelligence, tech-savviness, personal habits and social interaction. The Seven-component solution explained 71.747% of the total variance.

- Component "Knowledge" explains the total variance of 39.59%. And the highest significant loading is on the variable - Trader's quantitative skills (0.801), followed by the trader's ability to ignore the apparent signals in the market and stay ahead of the crowd (0.794), systematic updation of a trading plan to include new notions and eliminate the bad ones (0.792), trader's aptitude for building his own trading strategy and not depending on the tips from brokers (0.784), good knowledge about technical and fundamental analysis (0.78), well-researched stock-picking strategy (0.771), tracking the foreign markets (0.756) and the last is being motivated to learn more about the market each day (0.75).

- Component "Trading Behaviour" explains the total variance of 7.832%. The highest significant loading is on the variable - trading objective (0.824) followed by treating F & O trades like any other serious business (0.815), efficient planning (0.797), maintenance of a trading journal (0.794), discipline

(0.791), having a simple strategy (0.778) and the last is an exit strategy in place for all the trades (0.762).

- Component "Risk Management" explains the total variance of 6.58%. The highest significant loading is on the variable – not trading on borrowed money (0.769) followed by capital protection (0.752), risk-reward ratio (0.751), good risk management strategy (0.742), diversification (0.729) and the last is risking what is affordable to lose (0.729).

- Component "Personal Habits" explains the total variance of 6.58%. It has a very high significant loading on all the grouped variables that includes being a morning person (0.832) followed by having a balanced diet (0.83), enough sleep (0.827), physical fitness (0.799), and the last is spending quality time with loved ones (0.762).

- Component "Emotional Intelligence" explains the total variance of 5%. The highest significant loading is on the variable emotional control (0.751) followed by no revenge trading (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 (0.686), and the last is accepting responsibility (0.625).

- The component "Tech Savviness" explains the total variance of 4.17%. 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) ad last using computer algorithms to automate the trading process (0.732).

- The component "Social Interaction" explains the total variance of 2.81% variance. The highest significant loading is on the variable – following 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).

Conclusion

The study aimed at condensing the variables that influence trading success in equity derivatives into a few components. 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: knowledge, trading behaviour, risk management skills, emotional intelligence, tech-savviness, personal habits and social interaction 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 also indicated that SEVEN components should be retained (Cattell, 1966). The Seven-component solution explained 71.747% of the total variance.

Based on the findings of the study, an equity F & O trader is suggested to never be in the market to gamble or for the thrill that it offers. Equity F & O trading should be treated like any other serious business, and a lot of time should be devoted to learning and refining the required skills. Traders should never rely on their gut feelings, news, tips, views or rumours; instead, they should develop and follow their own trading system while keeping risk management in mind. Working on one's emotional control and following the trading plan with rigorous discipline is the only way to make consistent returns in the market.

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