Level of Knowledge of Equity Derivative Traders in Kerala

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Abstract:

The level of knowledge of derivative traders about various aspects of the derivative market has been examined in this study using 15 variables and it is found that derivative traders have a high level of knowledge of almost all aspects of the derivative market. The knowledge level of derivative traders has been compared with demographic variables and it is found that age, education level, trading experience, and trading capital significantly influence the knowledge level of derivative traders.

Keywords: Equity Derivatives, Trading Knowledge, Derivatives Market, Futures and Options

1. Introduction

Futures and options are actively traded on many exchanges throughout the world. Different types of forward contracts, swaps, options and other derivatives are entered into by individuals and financial institutions (Hull & Basu, 2017). It is widely believed in the financial world that the most significant milestone in financial innovation is achieved with the issuance and trading of derivatives. In India, the emergence and growth of the derivatives market is relatively a recent phenomenon. The derivatives market received a great deal of attraction nowadays and a lot of people are attracted to derivative trading which motivates the present study. Many skills are required for trading successfully in the derivatives market like trading knowledge, strategies, trading psychology, etc. This study examines the trading knowledge of equity derivative traders in Kerala.

2. Statement of the research problem

In the aftermath of the COVID-19 pandemic, the equity market, particularly the derivatives market, received a great deal of attention (Khan et al., 2020). People mostly participate in the derivatives market for hedging and speculation. Hedgers employ financial derivatives to safeguard their investment portfolio from market risk; to achieve this they must adopt the right hedging

tactics. To obtain complete hedge investors should have expertise in selecting the appropriate derivative instrument. Most investors are unaware of the ways of using derivatives to protect their investment portfolio. Speculators on the other hand enter the market for earning speculative profit through various trading strategies. A thorough knowledge of market and trading strategies are essential for earning consistent speculative profit. In this background, it is very relevant to study the level of knowledge of equity derivative traders in Kerala.

3. Literature Review

Luong & Ha, (2011) conducted a study to investigate the behavioural aspects affecting individual investors' decisions at the Ho Chi Minh Stock Exchange. The findings reveal that five behavioural factors influence individual investors' investing decisions at the Ho Chi Minh Stock Exchange: herding, market, prospect, overconfidence-fallacy, gamble's and anchoring-ability bias. .Nuruzzaman, (2011) tries to ascertain the awareness level and attitude of retail investors in futures trading. One of the major findings of this study is that behavioural biases are observed in the investor's trading behaviour. Raghavendra, (2013) evaluated the amount of awareness of retail investors regarding derivatives, as well as their impression of derivatives as an investment opportunity. According to the survey results, the majority of respondents believe that trading in derivatives is riskier than trading in the equities market. Aravind, (2013) discovered that the majority of

investors learned about derivatives through broking businesses, indicating that broking firms in south Kerala are taking an active interest and making efforts to promote financial derivatives. Santhini, (2013) found that the majority of capital market investors invest more than half of their overall investment in the derivative market. Thamotharan & Prabakaran, (2013) suggests that appropriate governmental actions will assist investors in perceiving derivative investments and making sound decisions. Tripathi, (2014) discovered that education, profession, and gender have little effect on derivative trading behaviour, but income has a considerable effect on derivative investing. According to Manrai, (2015) there has been an increase in knowledge of derivatives trading among ordinary investors in India. This was owing to an increase in the number of trading agents or organizations in the market that allow regular investors to trade derivatives on exchanges such as MCX and NCDEX. Ansari et al., (2015) found that gender, age, income and education do not have a significant effect on the perception of derivatives products. Jacob,(2016) assessed stock market investors' perceptions and experiences with derivatives. According to the study's findings, small investors do not view derivatives as a risk-hedging instrument. Anu, (2018) discovered that the introduction of stock futures and options has a considerable impact on stock market volatility. Vattoli, (2018) highlighted individual investors' illogical trading preferences and practices, which resulted in large losses.

After reviewing the literature, it is found that studies relating to the trading knowledge of equity derivative traders are very rare and there is a scope for conducting new research. This research is being carried out to explain the level of knowledge of Equity Derivative traders in Kerala.

4. Research Methodology

This research is conducted based on a quantitative research strategy. In order to achieve the valid results, the reliable and adequate sample size is chosen through the questionnaire. Primary data were collected from a sample of 300 equity derivative traders in Kerala by using self-completion questionnaire send through Google forms. The responses collected were automatically stored as Excel (CSV) file in Google forms which is exported to SPSS Version 22 for further coding. The 5-point Likert scale item responses are accordingly coded as values 5 for Strongly Agree, 4 for Agree, 3 for Neutral, 2 for Disagree and 1 for Strongly Disagree. Descriptive statistics including frequencies, mean and standard deviation are used to identify the pattern of responses apart from the basic profile of the respondent. Since the distributions found normal parametric tests (ANOVA, t-test, etc) were used for data analysis.

5. Results and Discussions

Derivatives are complex by their very nature. As Warren Buffet, the world-famous investment guru once quoted, "Derivatives are financial weapons of mass destruction", they are very dangerous tools in the hands of irrational traders. So, a thorough understanding of the derivative market is essentially a prerequisite for successful trading. Here in this section efforts are made to measure the level of knowledge of Derivative traders about various aspects of the derivative market. The knowledge of the derivative is assessed in two groups such as knowledge of basics of the derivative market and knowledge of trading strategies.

The derivatives market is a vast market with huge potential risks, a variety of products and strict regulations. Different products offer different risk-return characteristics. Proper knowledge about the basics of these instruments and their usage will help Investors to trade successfully in the market. The level of knowledge about the basics of the derivative market is measured using seven variables on a five-point scale and analyzed using one sample t-test. The results are summarized in Table 1.

Table 1Level of Knowledge about the Basics of Derivative Market (n=300)

Sl. No.	Variables		Frequency	Per cent	Mean ± SD	t*	p-value
		Very Poor	6	2.0			
		Poor	17	5.7			
1	Basic Concepts of Derivatives	Average	86	28.7	3.85 ± 0.99	14.841	<.01***
	or Berryadives	High	98	32.7			
		Very High	93	31.0			
		Very Poor	4	1.3			
	Derivative	Poor	22	7.3			
2	products trading	Average	93	31.0	3.76 ± 0.96	13.707	<.01***
	in India	High	103	34.3			
		Very High	78	26.0			
	SEBI	Very Poor	9	3.0			
	Regulations and guidelines relating to	Poor	50	16.7			
3		Average	92	30.7	3.46 ± 1.07	7.444	<.01***
	derivative	High	92	30.7			
	trading	Very High	57	19.0			
		Very Poor	16	5.3			
	Leverage Risks	Poor	25	8.3			
4	in Futures and	Average	51	17.0	3.85 ± 1.14	12.825	<.01***
	Options Trading	High	105	35.0			
		Very High	103	34.3			
	Man	Very Poor	21	7.0			
	NSEs new Margin	Poor	28	9.3			
5	requirements for	Average	59	19.7	3.72 ± 1.20	10.393	<.01***
	Futures and Options trading	High	98	32.7			
	Options trading	Very High	94	31.3			
		Very Poor	9	3.0			
	Brokerage and other charges	Poor	26	8.7			
6	relating to	Average	40	13.3	4.01 ± 1.08	16.27	<.01***
	Futures and Options trade	High	102	34.0			
	———	Very High	123	41.0			
7		Very Poor	32	10.7	3.52 ± 1.30	6.917	<.01***

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Sl. No.	Variables		Frequency	Per cent	Mean ± SD	t*	p-value
	Knowledge	Poor	34	11.3			
	about Tax treatment of derivatives	Average	66	22.0			
		High	82	27.3			
	trading gain or loss	Very High	86	28.7			

Source: Primary data *** Difference is significant at 1% level *One sample t-test, Average=3

Above table Indicates that derivative traders in Kerala have a high level of knowledge on all seven aspects of the basics of the derivative market. Level of knowledge on brokerage and other charges is having highest mean score and knowledge on SEBI regulations and guidelines is having lowest mean score. Mean scores of all variables are significantly above the mean score of the response scale i.e., 3 with t values showing significance at 5 per cent level. The one-sample t-test shows that there was a statistically significant difference between means (p < .01). Therefore, the alternative hypothesis is accepted and conclude that the mean level of knowledge on the basics of the derivative market is high.

The overall level of Knowledge of basics of derivative market is analyzed by combing all the seven variables and analyzed using one sample t-test with a test value of 2. The result of one sample t-test is summarised in Table 2 below.

Table 2

Overall Level of Knowledge about Basics of Derivative Market

Level Knowledge	of	Frequency	Per cent	Mean ± SD	T (One sample, Mean = 2)	p-value
Low		28	9.3			<.01***
Medium		82	27.3	2.54 ± 0.661	14.156	
High		190	63.4	2.34 ± 0.001		<.01
Total		300	100.0			

Source: Primary data

Table 2 shows that out of 300 sample derivative traders 28 (9.3%) have low level of knowledge on the basics of derivative market, 822 (27.3%) traders have a medium level of knowledge and 190 (63.4%) have high level of knowledge on basics of derivative market. The mean score obtained for measuring the level of knowledge on the basics of derivative market is 2.54, which is above the mean score of the response scale i.e., 2. The one-sample t-test shows that the mean score is statistically significantly higher than the population average score, t (299) = 14.156, p =.000. Hence, it can be concluded that the derivative traders have high level of knowledge on the basics of derivative market.

Proper knowledge about trading strategies will help traders to trade successfully in the market. Various strategies are available for derivative traders based on the type of instrument and payoff structure. Futures among derivative products have linear payoffs, meaning they have unlimited potential for both profit and loss, whereas options have non-linear payoffs, meaning they have limitless profit potential but restricted loss potential. One can create complicated payoffs that lead to a variety of trading strategies by fusing futures and options. Traders' knowledge of derivative trading strategies is measured in terms of eight variables on a five-point scale and analyzed using one sample t-test and results were summarized in Table 3.

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^{***}Difference is significant at 1% level

Table 3

Level of Knowledge about F&O Trading Strategies (n=300)

Sl. No.	Variables		Frequency	Per cent	Mean ± SD	t*	p-value
		Very Poor	6	2.0			
	Basic future and	Poor	21	7.0			
1	option trading	Average	74	24.7	3.87 ± 1.00	14.996	<.01***
	strategies	High	104	34.7			
		Very High	95	31.7			
		Very Poor	53	17.7			
	Option Greeks	Poor	41	13.7			
2	and their impact on the option	Average	79	26.3	3.1 ± 1.33	1.305	0.193
	position	High	77	25.7			
		Very High	50	16.7			
		Very Poor	28	9.3			
	Technical	Poor	30	10.0			
3	charts-based	Average	91	30.3	3.45 ± 1.22	6.473	<.01***
	strategy	High	79	26.3			
		Very High	72	24.0			
		Very Poor	66	22.0			
		Poor	74	24.7			
4	Delta neutral trading strategy	Average	76	25.3	2.72 ± 1.30	-3.762	<.01***
	trading strategy	High	47	15.7			
		Very High	37	12.3			
		Very Poor	83	27.7			
	Option strategy	Poor	55	18.3			
5	builder software	Average	64	21.3	2.74 ± 1.42	-3.130	<.01***
	and its uses	High	52	17.3			
		Very High	46	15.3			
		Very Poor	98	32.7			
	Algo trading	Poor	73	24.3			
6	strategy and its	Average	43	14.3	2.48 ± 1.36	-6.569	<.01***
	benefits	High	58	19.3			
		Very High	28	9.3			
	Pair Trading	Very Poor	88	29.3			steedeed
7	Strategy	Poor	62	20.7	2.57 ± 1.33	-5.543	<.01***
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Sl. No.	Variables		Frequency	Per cent	Mean ± SD	t*	p-value
		Average	71	23.7			
		High	48	16.0			
		Very High	31	10.3			
		Very Poor	53	17.7			
	Options trading	Poor	40	13.3			
8	strategies like straddle, strange,	Average	65	21.7	3.19 ± 1.38	2.392	.017**
	etc.	High	81	27.0			
		Very High	61	20.3			

Source: Primary data ***, ** Difference is significant at 1% & 5% level respectively

From the above table, it can be seen that the sample derivative traders have a high level of knowledge on only three F&O trading strategies namely basic futures and options strategies, chart-based trading strategies and strategies like straddle, strangle, etc. At the same time, they have reported a low level of knowledge on delta neutral trading strategy, options strategy builder, algo trading and pair trading strategy. Among the eight variables considered, basic futures and options strategy seems to be the most familiar among traders with a mean score of 3.87 which is significantly higher than the mean of the response scale as the significance level of one sample t-test is less than 0.05.

The mean scores of three variables are significantly above the mean score of the response scale i.e., 3 with t values showing significance at 5 per cent level, namely basic F&O strategy, chart-based trading strategy and strategy like straddle strangle, etc. The mean score of only one variable (i.e., knowledge on Option Greeks and its impact) is equal to the mean of the response scale with the t value showing no significance at 5 per cent level. The mean score of all other variables such as knowledge on delta neutral trading strategy, strategy builder software, algo trading and pair trading are less than the mean score of the response scale of 3. The one-sample t-test shows that on one variable there is no statistically significant difference between means (p > .05). Therefore, the null hypothesis is accepted in the case of knowledge on option Greeks and in all other cases rejected the null hypothesis.

The overall level of knowledge of futures and options trading strategy is analyzed by combing all the eight variables using one sample t-test and the result is summarised in Table 4 below.

Table 4Overall Level of Knowledge about F&O trading strategies

Level of Knowledge	Frequency	Per cent	Mean ± SD	t*	p-value
Low	99	33.0		-0.071	0.943
Medium	103	34.3	1 007 - 0 012		
High	98	32.7	1.997 ± 0.812		
Total	300	100.0			

Source: Primary data

*One sample t-test, Average=2

Table 4 shows that out of 300 sample derivative traders 99 (33%) have a low knowledge level on trading strategies, 103 (34.3%) traders have medium knowledge and 98 (32.7%) have high knowledge level on F&O

^{*}One sample t-test, Average=3

trading strategies. The one-sample t-test shows that the difference between means is statistically not significant because of the p-value of 0.943 (p>.05). Therefore, accept the null hypothesis and conclude that the derivative traders in Kerala have a medium level of knowledge about futures and options trading strategies.

The level of knowledge of derivative traders about the derivative market is examined by combining all the fifteen variables used to measure the knowledge level about basics of derivatives and derivative trading strategies. The Level of knowledge of equity derivative traders is compared concerning six demographic variables such as Area, gender, education level, age, trading experience and trading capital. The analysis shows that there is no significant difference in the level of knowledge among traders of urban and rural area. The result found that there is no significant difference in the level of knowledge among male and female equity derivative traders in Kerala. The age-wise analysis reveals that there is a statistically significant difference in the mean score of knowledge level between different age groups. The education-wise analysis found that there is a difference in the mean score of knowledge level between traders with different educational qualifications. The traders with post-graduation are having the highest mean score (51.85) of knowledge level and traders with SSLC is having lowest mean score (36.15) of knowledge level about derivative market. The ANOVA is applied to test the significance of differences among the mean knowledge level of different educational qualification groups and the result is summarised in Table 5 below.

Table 5Result of One-way ANOVA: Education-wise analysis of knowledge level

Sum of Squares	df	Mean Square	\mathbf{F}	p-value
2840.129	4	710.032		
41922.067	295	142.109	4.996	<.01***
44762.197	299			
	2840.129 41922.067	2840.129 4 41922.067 295	2840.129 4 710.032 41922.067 295 142.109	2840.129 4 710.032 41922.067 295 142.109 4.996

Source: Primary data *** The mean difference is significant at the 1% level

The one-way ANOVA reveals that there is a statistically significant difference in the mean score of knowledge level between traders of at least two educational qualification groups (F (4, 295) = [4.996], p = .001). the result of the Tukey HSD test for multiple comparisons and it is found that the mean value of knowledge level is significantly different between traders possessing educational qualification of **SSLC and Higher secondary** (p = .032, 95% C.I. = [-28.3088, -.7835]), **SSLC and Graduate** (p = .001, 95% C.I. = [-22.7793, -3.7438]), **SSLC and Postgraduate** (p = .000, 95% C.I. = [-25.3888, -5.9992]), and finally **SSLC and Professional** (p = .002, 95% C.I. = [-24.0821, -3.9012]). There was no statistically significant difference in mean knowledge scores between traders of higher secondary and above qualifications. That means there is no significant difference in knowledge level between traders having qualifications of Higher Secondary, Graduation, Post Graduation and Professional degree.

The sample selected for this study includes equity derivative traders with varying years of trading experience. The number of years of trading experience of equity derivative traders may affect their knowledge level about derivative market. To test the same, descriptive analysis has been done which gives the following results.

Table 6Descriptive statistics of trading experience -wise analysis of knowledge about derivative market

Test Variable	Trading experience	N	Mean ± SD
	2 years and below	161	47.25 ± 12.18
	3-5 years	81	51.07 ± 11.63
Knowledge Level about derivative market	5-10 years	32	55.50 ± 10.95
market	Above 10 years	26	54.19 ± 12.32
	Total	300	49.76 ± 12.24

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Source: Primary data

From table 6, it is found that there is a difference in the mean score of knowledge level between traders with different years of trading experience. Traders with 5-10 years of trading experience is having the highest knowledge level with a mean score of 55.50 and traders with below 2 years of experience is having the lowest knowledge level about the derivative market with a mean score of 47.25. The ANOVA is applied to test the significance of differences in the mean knowledge level among traders with different years of experience and the result is summarised in table 7.

Table 7Result of One-way ANOVA: Trading experience - wise analysis of knowledge level about derivative market

	Sum of Squares	df	Mean Square	F	p-value
Between Groups	2712.908	3	904.303		
Within Groups	42049.289	296	142.058	6.366	<.01***
Total	44762.197	299			

Source: Primary data

*** The difference is significant at the 1% level

The one-way ANOVA reveals that there is a statistically significant difference in the mean score of knowledge level between traders of at least two groups with different years of trading experience (F (3,296) = [6.366], p = 0.000). To know the exact significant difference in knowledge level between different groups of trading experience HSD test has been performed and the result shows that the mean value of knowledge level is significantly different between traders with a trading experience of **2 years & below** and **5-10 years** (p = .002, 95% C.I. = [-14.2056, -2.2851]) and **2 years & below** and **above 10 years** (p = 0.032, 95% C.I. = [-13.446, -.4290]). There was no statistically significant difference in mean knowledge scores between traders of **2 years & below** and **3-5 years**, **3-5 years** and **5-10 years**, **3-5 years** and **above 10 years** and **5-10 years** and **above 10 years**.

The sample selected under this study includes equity derivative traders with different amounts of trading capital. The amount of trading capital may affect the level of knowledge of traders about the derivative market. To find out the statistical significance of the difference in mean score One-way Analysis of Variance (ANOVA) is performed and the result of the descriptive analysis is summarized in table 8.

Table 8Descriptive statistics of trading capital-wise analysis of knowledge about the derivative market

Test Variable	Trading capital	N	Mean ± SD
	Below 1 lakh	74	47.01 ± 11.63
	1-5 lakhs	136	49.33 ± 11.92
Vicerale des I evel els est desirective mentest	5-10 lakhs	29	50.45 ± 12.32
Knowledge Level about derivative market	10-20 lakhs	24	55.92 ± 11.36
	Above 20 lakhs	37	52.32 ± 13.69
	Total	300	49.76 ± 12.24

Source: Primary data

From table 8, it is found that there is a difference in the mean score of knowledge level between traders with different amounts of trading capital. Traders with a trading capital of **10-20 lakhs** is having the highest knowledge level with a mean score of 55.92 and traders with a trading capital of **below 1 lakh** is having the lowest knowledge level about derivative market with a mean score of 47.01. From the above data, it can be

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concluded that the knowledge level about derivative market is increasing with a corresponding increase in the trading capital of derivative traders. The ANOVA is performed to test the significance of differences in the mean knowledge level among traders with different amounts of trading capital and the result is summarised in Table 9

Table 9Result of One-way ANOVA: Trading capital - wise analysis of knowledge level about derivative market

	Sum of Squares	df	Mean Square	F	p-value
Between Groups	1749.986	4	437.497		
Within Groups	43012.211	295	145.804	3.001	.019**
Total	44762.197	299			

Source: Primary data

The one-way ANOVA reveals that there is a statistically significant difference in the mean score of knowledge level between traders of at least two groups with different trading capital (F (4,295) = [3.001], p = 0.019). The result of Tukey HSD test for multiple comparisons found that the mean value of knowledge level is significantly different between traders with trading capital of **below1 lakh** and **10-20lakhs** (group1 and group 4) (p = 0.016, 95% C.I. = [-16.6885, -1.1179. There was no statistically significant difference in mean knowledge scores between traders of all other groups such as group 1 and 2, group 1 and 3, group 1 and 5, group 2 and 3, group 2 and 4, group 2 and 5, group 3 and 4, group 3 and 5 and finally between group 4 and 5.

The equity derivative traders included in this study are classified into three groups based on the score of knowledge level about the derivative market and is done by combing all the fifteen variables used for examining the knowledge level and Category 1 represents traders with very little knowledge about derivative market. The category 2 represents traders with moderate knowledge about derivative market, and the category 3 represents traders with a high level of knowledge about derivative market. A descriptive analysis has been done which shows the mean score of knowledge level of these three categories of traders. To find out the statistical significance of the difference in the mean score one sample t-test is also applied and the result is summarised in table 10.

Table 10

Classification of traders based on Level of knowledge about derivative market

Level Knowledge	of	Category	Frequency	Per cent	Mean	Std. Deviation	t*	p-value
Low		1	52	17.30				.4340
Medium		2	101	33.70	2.22	0.7516	7.29	
High		3	147	49.00	2.32	0.7516		
Total			300	100.0	_			

Source: Primary data

*One sample t-test, Average=2

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Table 10 shows that out of 300 sample derivative traders 52 (17.3%) have a low level of knowledge about the derivative market, 101 (33.7%) traders have a medium level of knowledge about derivative market and 147 (49%) have high level of knowledge about derivative market. The mean score obtained for measuring the knowledge level of derivative traders is 2.32, which is above the mean score of the scale used for categorisation i.e., 2. The result of one sample t-test shows that the mean score is not significantly different from the mean of the response scale (population average score), t (299) = 7.29, p = .4340. Since the p>.05,

^{**} The difference is significant at the 5% level

the null hypothesis is accepted and it can be concluded that the level of knowledge of derivative traders about the derivative market is moderate.

6. Conclusion

In this study the knowledge of derivatives traders is assessed in two groups; knowledge about the basics of the derivatives market and knowledge about trading strategies. Descriptive statistical analysis, one-sample t-test, independent sample t-test and one-way ANOVA were applied to arrive at the findings. This study found that derivative traders in Kerala have a high level of knowledge of all aspects of the derivatives market. The traders with post-graduation are having the highest mean score (51.85) of knowledge level and traders with SSLC is having the lowest mean score (36.15) of knowledge level about the derivative market

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