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### Indian Derivative Market: Investors' Risk Perspective

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#### ABSTRACT

Indian derivatives market has revolutionized with innovative financial products become high net worth market over the years, earned well deserved and efficient platform for the investors to invest from across the world. It is believed that the investors are highly influenced by various factors invest in derivatives market depending upon their risk aptitude. Hence, this present study is an attempt to understand the investors' perception, attitude and behaviour in Indian derivatives market. The results indicate that the investors have good perception and aware of risks associated with derivatives market, are highly influenced by factors like experience (past performance), level of knowledge, risk tolerance level and satisfactory returns behave rationally in the market expect huge profits with irrespective of risks (high).

**JEL Classification Code:** G1, G02, G14.

**Keywords:** Perception, attitude, risk tolerance, exposure.

#### 1. INTRODUCTION

Investors who have money more than their expenses will invest in securities or in any other assets like metals, real estate or bank deposits etc. This kind of investing activity becomes interest and attracts investors from different life style irrespective of their demographic background. They invest their money as an investment based on their discretion with an expectation of good return and full security of principal amount within certain time period. They need to find out the best avenue from the variety of investment avenues that meet their preference of return and risk, where all the investments are involved some kind of risk (uncertainty of expected returns) and depends on the investor's attitude towards risk and investment horizon they need to decide in which avenue to invest. Over the past two decades the globalization of financial market provides wide variety of market and investment options which has been increasing the investors' community investing in financial market.

The financial market exists to facilitate sale and purchase of financial instruments for investors, marked by a high degree of volatility comprises certain risk. In order to manage such risks, financial instruments have been developed in the financial markets, which are universally meant as financial derivatives at all national and international financial markets. Derivative products are of 'financial engineering' provide risk management, helps investors to transfer their risk from the one who wish to evade it; to the one who willing to accept it effectively. An increasingly large number of organizations and investors consider derivatives as a vital role in implementing their financial decisions. The prime use of derivative is hedging (risk shifting) transfer the market risk which occurs due to unfavourable price changes in the market. But their role is not limited to hedging, and provides various purposes, namely price discovery, profit enhancement, speculation and arbitrage.

Within a short span of three decades of introduction, derivatives market has gained significance role and indispensable in day-to-day business activities worldly. Derivatives have become an integral part of Indian Capital market was introduced in June 2000 initially started with index futures and subsequently traded with index options and stock options. However, risk management is still being a major concern among participants in the financial market. Even though there are various products, tools and techniques are made available in the market to manage the risk, still there is a need for more sophisticated instruments. Of course, derivative instruments are developed as sophisticated and management tools to handle risk, the participants are still not so familiar with the concepts and unaware of its full potential perceives it as risky trading.

By nature investing in derivative markets engage certain risks like market risk, liquidity risk, credit risk, hedging risk etc, where the investors should handle with full heed. Indeed, they feel feared about derivatives due to lack of knowledge about them and their use. So, this study aims to discover that how these risks are perceived by the investors and what they actually expect from the market irrespective of its risks. Hence, this study is intended to examine the investors' perception towards risks in Indian Derivatives Market and factors, investing characteristics that affect investors trading processes. The study also look over the investor's objective and preferred instrument for investment, investor's opinion on derivatives market.

### **1.1. Conceptual framework of Derivatives**

A Financial Derivative has value dependent on the underlying asset and not has its own value. The underlying asset could be shares, stock indices, commodities, foreign currencies, and interest rates etc, evolved to hedge the risk. As per the Section 2(ac) of Securities Contract Regulation Act (SCRA), 1996 Financial Derivative can be defined as;

- "A security derived from a debt instrument, share, loan whether secured or unsecured, risk instrument or contract for differences or any other form of security"
- "A contract which derives its value from the prices, or index of prices, of underlying securities" (SEBI. gov, n.d.).

Derivatives are a class of financial instruments includes forward, futures, options and swaps designed to provide security to participants in financial markets against adverse price movements of the underlying assets. Standardized derivative contracts like Futures and Options are traded in organized exchanges known as exchange-traded derivatives. Other derivative contracts (forwards) that are privately negotiated between

two parties are known as Over-the-counter derivatives, are not transacted on organised exchanges. Forward contract is an agreement between two parties calling for delivery of, and payment for a specified quantity and quality of a commodity at a specified future date and pre-agreed price. It is like a commitment to buy or sell an asset at predetermined price and at a specified future time.

Future contracts are standardized contracts or agreements trade in exchanges, specific types of goods, in predetermined price and at specific future delivery or maturity dates. Future contracts are modern and innovative have various financial and non-financial assets, flexible delivery terms, price and exposure limits, transacted in an organised exchange, margin system, structured settlement and clearing house, long and short positions available for investors. Stocks, indices, commodities, foreign currencies, bonds etc, are the underlying assets for future contracts.

Options are also contracts that give the right but not obligation to buy or sell assets, where the investors usually use these contracts when they do not want to take a position (buy or sell) of an asset outright, but want to increase their exposure by trading in high level of price movements of underlying asset. There are two types of options: call options and put options. A call option provides the right to buy underlying asset at a specified price (strike price or exercise price) in a period of time. A put option gives an investor the right to sell the underlying asset at strike price before the expiry date.

Swaps are also derivative instruments where two parties exchange cash flows or other variables related with different investments. For example one party has an advantage of borrowing funds under floating interest rates, while another party can borrow more as fixed rate. The underlying variables of swaps can be interest rates, commodities, and currencies. A swaption gives the owner the right but not obligation to exchange the cash flows of fixed rate for a floating rate loan, loan payments of one currency for another currency, and based on the price of underlying commodity.

## **1.2. Participants in Derivatives Market**

The derivatives are traded by retail investors, financial institutions and non-financial institutions. Retail investors occupied more than 60 percent of equity derivatives market and also dominate the markets for commodity derivatives as per NSE; whereas financial institutions do not participate to a large extent due to define limits imported by regulatory bodies for using derivatives only to hedge the existing positions or to stabilize the existing portfolios (Sarkar, A, 2006).

There are three main types of investors in Derivatives Market (Vashishtha and Kumar, 2010):

- *Hedgers*: They are risk-averse investors who invest in derivatives market to eliminate the risks associated with the price of an asset. In India, most of the participants use derivatives for hedging purpose (Fitch Ratings, 2004).
- *Speculators*: Speculators are risk-takers transact derivatives in order to get profit, wish to get extra leverage in betting on the future price movements of underlying asset. Speculators are high risk takers, influenced by high liquidity, high leverage, low transaction cost, and default risk behaviour, either gain or lose highly in the derivatives market.
- *Arbitragers*: Arbitragers are mostly risk-averse take advantage of differences in the prices of similar assets in different market to earn riskless profits by buying in one market (long) and

simultaneously selling (short) in another whichever market is forward. All the three participants, hedger, speculators and arbitragers must exist in derivatives market for healthy functioning and increasing liquidity. Hedgers provide economic essence to the market, speculators provide depth and liquidity and the arbitragers provide price discovery and consistency in prices.

### **1.3. Derivatives Market: Indian Context**

Derivatives market has been in existence for long period of time in Indian in different forms. In 1875 Bombay Cotton Trade Association started commodity futures trading and by early 1990s India had become one largest in the world's futures industry. In 1952, derivatives trading transferred to informal forward markets when the Indian Government banned option trading and cash settlement for commodities. In 1990s, government policy has changed and allowed the role for market-based pricing and less suspicion of derivatives trading. In the later stage the ban on commodities future trading was elevated and National Electronic Commodity Exchanges were formed. A traditional forwards trading called "Badla" system led to number of adverse practices and was banned by Securities Exchange Board of India (SEBI) in 2001. The stock market between 1993 and 1996 undergone series of reforms lead for the development of equity derivatives in India.

The stock market was improvised the efficiency and transparency for listing exchange traded derivatives by offering automated screen-based trading system. On the recommendation of L. C. Gupta Committee, set up by SEBI; derivatives trading were commenced in India in June 2000 for index future contracts namely, S&P CNX Nifty, Sensex of NSE and BSE. Later, index option trading (June 2001) option and futures on individual securities in July 2001 and November 2001 were also permitted for trading. All these derivative contracts are settled y cash payment and do not involve physical delivery of the underlying assets.

Derivatives on stock indices and individual stocks have grown rapidly, become popular and has highest volume globally. NSE has launched interest rate futures in June 2003, where market participant preferred to trade in OTC markets had flawed contract specifications, ensuing in underlying interest rate differing erratically from the suggested rate. Currency futures contract on US Dollar-Rupee were introduced in 2008 to hedge the foreign currency risk exposure. Exchange traded commodity derivatives have been trading from 2000 with 8 eligible commodities and value of trading has almost increased for many times.

### **1.4. Objectives of the Study**

- To identify investors perception about Indian Derivative Market and risks associated with derivatives market
- To analyze investors profile, investing characteristics and concerns in derivatives market.
- To study investors attitude and behaviour towards derivatives market.

## **2. REVIEW OF LITERATURE**

Avadhani (2000) stated that derivative emerged as an innovative financial instrument to protect the unwanted risks arising out of asset price fluctuations. Bose and Suchismita (2006) examined derivative products, found it as risk management tool and provide significant economic benefits like risk management and

price discovery, liquidity and efficient allocation of capital. It helps to redistribute the risk from risk-averse investors to investors who are willing to bear risk.

Srivastava, Yadav and P K Jain (2008) found that future contracts have favour with Indian investors, option contracts are in a nascent stage, where option writers charging a proportionately higher option premium, making this segment unattractive for option buyers because of their complex valuation mechanism. Derivatives were perceived to be beneficial primarily for risk adjustment, return enhancement and price discovery. High volatility in underlying stocks and difficulty in measuring the impact of derivative securities on cash market exposure due to illiquidity, were the major concerns raised by the brokers. It is found 80 percent of respondents mentioned speculation as one of main objectives for which their clients use derivative securities.

Ravichandran (2008) examined investor's preferences among various investment avenues in Indian Capital Market with reference to derivatives. The study shows that investing in stock market is a major challenge for professionals use derivatives as a risk management tool to reduce the involved in the stock market and most of the participants aware of risk associated with it.

Vasantavalli (2010) examined the relationship of acceptable risk levels and expected rate of return of investors by creating a hypothetical situation, where 5 options given to respondents have different levels of risk and reward. The urban investors are well informed, significantly influenced by the growth prospects of a stock. Investors who were risk-averse before were willing to take higher level of risk for high reward and convinced about the potential of an investment.

Shaik Abdul Majeed Pasha (2013) examined the retail investors perception towards financial derivatives, myths and realities related to financial derivatives. It is found that investors believing 10 myths (misconceptions), just one or two of them could lead to advocate legislative and regulatory measures to restrict the use of derivatives. The derivatives players were confused and still not familiar with concepts, feared for the complexity of financial derivatives and its accompanying risks. Investors are strongly believes the myths and not the realities of derivatives take unnecessary risks and found most of investors felt derivatives are new, complex and high-tech products, not familiar with the concepts and uses of derivatives. Majority of investors viewed derivatives as speculative and highly leveraged instruments.

Kamlesh Gakhar and Meetu (2013) studied the development of Indian Derivative Market, trading mechanism in its various products and the future prospects. Indian derivative market has achieved tremendous growth over the years and has seen series of reforms. Based on the secondary data, the study found that derivative products have emerged over the time to meet the various needs of the different types of investors and some issues like lack of economies of scale, tax and legal bottlenecks, increased off-balance sheet exposure of Indian banks etc., which need to be immediately resolved to enhance the investors' confidence in the Indian derivatives market.

Bhatt and Apurva (2014) studied perception of investors towards derivatives as an investment avenue and factors influence their decision of 100 investors. The results found that investors consider some factors like financial advisors guidance, broker's recommendation, risk control, financial knowledge and high volatility while making investment decisions in derivatives market; found that most of the investors preferred futures and option stock indices to invest in derivatives market. Supriya (2014) addressed the inherent and distinctive issues of derivatives market in India, and discussed about most common option

types like long call, short call, long put and short put that an investor can employ, the origin of derivatives in Indian context, development of Indian derivatives market and derivatives instrument traded in India.

Tripathi (2014) empirically investigated investor's perception towards Derivative trading and found Indian investors preferred to invest their money in real estates and insurance policies believed that they offer high returns with less risk. The study found the majority (75%) of investors aware of derivative instruments and preferred investing in it. Derivatives market is dominated by male investors than female investors.

Ramanjaneyallu (2015) investigated the investor's attitude toward financial derivatives and risk management with a presumption of investors on the capital market are risk averse. The hypotheses were tested with Z-test Statistics and found majority of investors are not believed the myths like Because of the Risks Associated with Derivatives, Regulators Should Ban Their Use, which supports for rejecting main null hypothesis. 50 percent of the respondents believed in eight out of ten myths and not understanding the realities of derivatives market and it is accepted that more number of investors believed in myths on derivatives.

Sarathkumar and Dhandhayuthapani (2016) investigated the attitude of 200 investors and analysed the key factors that influence their attitude in Trichy derivatives market. The study found the majority of the investors are male (82%) ready to take risks while investing in derivatives market and age have significant association with the awareness of derivatives market.

### 3. DATA AND METHODOLOGY

A structured questionnaire was developed to find out the complete information of investors investing in Indian Stock Market. The questionnaire was designed to obtain information about demographics, investment characteristics, attitude, behaviour and perception of risks in derivatives market. Convenient random sampling technique was used to gather the information from the respondents. The survey was conducted in February 2016 in Vellore district, Tamil Nadu; covered 250 retail investors investing in stock market and the results were analysed using SPSS package with various analytical tools.

### 4. ANALYSIS AND FINDINGS

Based on the information provided by the investors through questionnaire, the data has been analysed using various analytical tools. Descriptive statistics was used to know about the investor's demographic background like age, gender, education, occupation and monthly income.

**Table 1**  
**Demographic Characteristic of Investors**

	<i>Personal Characteristics</i>	<i>No. of Respondents</i>	<i>% of total</i>
Gender	Male	196	78.4
	Female	54	21.6
Age Group	Less than 30 years	143	57.2
	30 – 45 years	99	39.6
	45 – 60 years	7	2.8
	More than 60 years	1	0.4



<i>Personal Characteristics</i>		<i>No. of Respondents</i>	<i>% of total</i>
Education	High school level	43	17.2
	Graduate	154	61.6
	Post-graduate	45	18
	Others	8	3.2
Profession	Employed	161	64.4
	Self-employed	86	34.4
	Others	3	1.2
Marital Status	Married	160	64
	Unmarried/Single	87	34.8
	Widowed	3	1.2
Monthly Income	Less than 25,000	154	61.6
	25,000 to 40,000	74	29.6
	40,000 to 55,000	14	5.6
	More than 55,000	8	3.2

The profile of investors is reported in Table.1, shows, 78.4 percent of respondent were male actively dominating and 21.6 percent were female in the market. The majority of them were young under the age of 30 years (57.2%), and 39.6 percent are under the age group of 30 – 45 years. Regarding their education level, 61.6 percent were graduates, 18 percent were post graduates and 17.2 percent of the respondents had high school education, shows majority of investors are educated. Almost 65 percent of investors were employed and 34.4% of investors were self-employed and (1.2%) others include housewives. Majority of the investors were married (64%) and 34.8 percent were single and 1.2 percent were widowed. Finally, 61.6 percent of the investors have less than 25,000 as their income, 29.6 percent of investors have the income in between 25000 to 40000 respectively.

#### 4.1. Investment Strategies

The following table explains about the investing characteristics of investors who invest in stock market including derivatives market.

**Table 2**  
**Investors' Investment Characteristics**

<i>Investing Characteristics</i>		<i>No. of Respondents</i>	<i>% of total</i>
Percentage of income	Less than 20%	50	20
	20% -35%	164	65.6
	36% - 50%	36	14.4
Experience	Less than 2 years	47	18.8
	2 – 5 years	125	50.8
	6 – 10 years	65	26
	More than 10 years	11	4.4
Average return earned	Loss	6	2.4
	Less than 10%	31	12.4
	10% - 30%	176	70.4
	30% 50%	34	13.6
	More than 50%	3	1.2

<i>Investing Characteristics</i>		<i>No. of Respondents</i>	<i>% of total</i>
Satisfaction level	Very much satisfied	17	6.8
	Satisfied	188	75.2
	Neutral	11	4.4
	Not satisfied	26	10.4
	Not at all satisfied	8	3.2
Level of knowledge	None	11	4.4
	Limited	42	16.8
	Good	182	72.8
	Extensive	15	6
Preferable policy	Stop loss	70	28
	Maximum profit	166	66.4
	Target price	12	4.8
	Wait and see	2	0.8
Aware of risks	Credit risk	16	6.4
	Market risk	203	81.2
	Selection risk	13	5.2
	Operation risk	18	7.2
Level of risk tolerance	High	196	78.4
	Moderate	47	18.8
	Low	7	2.8

The descriptive analysis shows that, 65.6 percent of investors invest their 20 to 35 percent of income in the stock market and 14.4 percent of investors invest 35 -50 percent of their income in the stock market. Around 51 percent of the respondents had minimum 2 -5 years experience of investing, and 26 percent of investors had 6 -10 years experience of investing in the stock market. Regarding average return earned from the market, only 2.4 percent of investors faced loss and majority of the investors (70.4%) earned at least 10 to 30 percent of average returns. About their satisfaction level of returns from their investment, 82 percent of investors were feeling satisfied with the returns, 13.6 percent of the investors are not satisfied with the returns, 4.4 percent of investors were either satisfied nor unsatisfied.

Regarding their level of knowledge, 72.8 percent of the investors believe that they have good knowledge and understanding of derivatives market and 16.8 percent of investors have limited knowledge and 6% of investors have extensive knowledge of derivatives market. About their preferable investment policy, majority of the investors (66.4%) wants maximum profit from their investment and 4.8 percent of investors want to attain their target price, 28 percent of investors have stop loss policy and only 0.8 percent of investors are willing to watch and wait till the market recover. Regarding the risk tolerance level, most of the investors (78.4%) have high tolerance level of risk, 18.8 percent of investors have moderate level of risk tolerance and only 2.8 percent of investors have low level of risk tolerance.

**4.2. Perception of Derivatives Market**

It is very important to know how the investors perceive about risks, benefits of derivatives market and study the preferences and concerns of investors trading in derivatives market.



**Table 3**  
**Benefits of using Derivatives Market**

<i>Benefits</i>	<i>Sum</i>	<i>% of total</i>	<i>Mean</i>	<i>Rank</i>
Price discovery	35.00	14	2.1400	VI
Improving liquidity	193.00	77.2	2.7720	I
Returns enhancement	48.00	19.2	2.1920	V
Risk adjustment	54.00	21.6	2.2160	IV
Leverage	158.00	63.2	2.6320	II
Margin Amount	58.00	23.2	2.2320	III

The above table depicts the benefits of using derivatives market for investors and based on the mean value it is found that majority of investors (77.2%) feel derivatives enhance liquidity where investors can buy and sell the instruments more frequently. Leverage, margin amount and risk adjustment are also consider as benefits of derivatives market by most of the investors. Majority of investors concern for exposure limits in derivatives market, want to expose themselves more than the limit. Investors realized the importance of derivatives market features and not fear/worry for using the derivatives in their investment.

**Table 4**  
**Investors concern towards Indian Derivatives market**

<i>Concerns</i>	<i>Not at all</i>	<i>Low</i>	<i>Moderate</i>	<i>High</i>	<i>Mean</i>	<i>Rank</i>
Short-term profit	92	122	26	10	1.8160	IX
Pricing and valuing derivatives	55	133	44	18	2.1000	V
Liquidity in derivatives market	60	114	56	20	2.1440	III
Margin amount	48	161	34	7	1.9880	VII
Leverage	64	136	35	15	2.0040	VI
Price fluctuations	76	89	63	22	2.1080	IV
Measuring the impact of derivatives on underlying exposure	51	114	57	28	2.2360	II
Counterparty credit risk	85	128	27	10	1.8480	VIII
Exposure limits	55	40	25	131	2.9240	I

**Table 5**  
**Investors attitude towards derivatives market**

<i>Attitudes</i>	<i>No. of Investors</i>	<i>% of total</i>	
Reason for not using derivatives	Heavy lot size	12	4.8
	Negative perception	115	46
	Difficult in pricing and valuing	71	28.4
	Lack of understanding	28	11.2
	Huge amount of risk	24	9.6
Objective of trading	Speculation	7	2.8
	Hedging/risk adjustment	37	14.8
	Arbitrage	2	0.8
	Profit making	204	81.6

	<i>Attitudes</i>	<i>No. of Investors</i>	<i>% of total</i>
Preferable asset	Equities	31	12.4
	Commodities	165	66
	Currencies	50	20
	Interest rates	4	1.6
Speciality of trading	High returns	90	36
	Price hedging	131	52.4
	Regulated market	25	10
	Products quality	4	1.6
Most important risk factor	Mark-to-mark margin	7	2.8
	High price fluctuations	224	89.6
	Heavy lot size	9	3.6
	Less time period to hold	10	4
Exposure of risk	Low risk	9	3.6
	Moderate risk	64	25.6
	High risk	152	60.8
	Risk averse	25	10
Instrument with less risk	Equities	18	7.2
	Commodities	227	90.8
	Currencies	5	2

The above table illustrates about the investors attitude towards derivatives market; 46 percent of the investors feel negative perception of derivatives could be the reason for not using the derivatives in their investment, 28.4 percent of investors are not using the derivatives because of difficulty in pricing and valuing derivatives. 81.6 percent of investors' trade derivatives for the objective of making profit and 14.8 percent of investors use derivatives with the objective of hedging the risks in their investment.

Regarding the preferable underlying assets, 66 percent of investors prefer to trade commodities and believe (90.8 %) investing in commodities is less risky. And 20 percent of investors prefer to trade currencies and 12.4 percent of investors wish to trade equity derivatives. 52.4 percent of investors believe that hedging the price risk is the core speciality of derivatives and 36 percent of investor considers possibility of high returns as speciality of derivatives. Many investors (89.6%) think derivatives are influenced by high price fluctuations consider it as a main risk factor, willing to take high level of risk exposure (60.8%) and moderate level of risk exposure (25.6%).

### 4.3. Hypothesis

To study the risk behaviour of investors in Indian Derivatives Market following hypothesis were framed and tested statistically.

**H01:** There had been no significant difference between experiences of the investors trading in derivatives market with their exposure of risk.

**H02:** There is no significant difference between risk tolerance levels of investors with their performance in the market.

**H03:** There is no significant correlation among investors risk tolerance level, experience of trading in derivatives market, level of risk exposure, level of knowledge and satisfaction level.

**4.4. Cross-tabulation and Chi-Square Tests**

**H01:** There had been no significant difference between experiences of the investors trading in derivatives market with their exposure of risk.

**Table 6**  
**(a) Cross-tabulation**

<i>How you could increase the return by increasing level of risk * Experience of trading in derivatives market</i>				
<i>How you could increase the return by increasing level of risk</i>	<i>Experience of trading in derivatives market</i>			<i>Total</i>
	<i>Faced losses</i>	<i>Earned profits</i>	<i>No profits/ no losses</i>	
Take a lot more risk with all of my money	0	2	1	3
Take a lot more risk with some of my money	0	13	0	13
Take a little risk with all of my money	2	74	2	78
Take a little risk with some of my money	1	113	0	114
Not increase my risk at all	2	40	0	42
Total	5	242	3	250

**Table 6**  
**(b) Chi-square test**

<i>Chi-square</i>	<i>Value</i>	<i>Df</i>	<i>Asymp. Sig. (2-sided)</i>
Pearson Chi-Square	32.215 <sup>a</sup>	8	.000
Likelihood Ratio	12.935	8	.114
Linear-by-Linear Association	5.407	1	.020
N of Valid Cases	250		

<sup>a</sup>11 cells (73.3%) have expected count less than 5. The minimum expected count is .04.

Table 6 shows that majority of the investors had good experience earned profits from the derivatives market by taking little risk with their money. The investors believe that with more risk they can earn more profits from their investment using derivatives. It is also proved that investors experience of trading in derivatives market have significant association with their level of risk exposure. Since the calculated value  $X^2(8) = 32.215, p \leq 0.05$  (significance level), the null hypothesis was rejected.

**H02:** There is no significant difference between risk tolerance levels of investors with their performance in the market.

Table 7 shows that majority of the investors have high level of risk tolerance in derivatives market are willing to bear any possible returns (high or low). The investors behave rationally according to market situation and aware of risks (losses) and returns (profits) from derivatives. It is also proved that investors performance in derivatives market have significant association with their level of risk tolerance, higher the tolerance level higher the exposure of risk. Since the calculated value  $X^2(6) = 12.871, p \leq 0.05$  (significance level), the null hypothesis was rejected.

**Table 7a**  
**Cross-tabulation**

<i>Large potential gains with the risk of large losses * Level of risk tolerance</i>				
<i>Large potential gains with the risk of large losses</i>	<i>Level of risk tolerance</i>			<i>Total</i>
	<i>High</i>	<i>Medium</i>	<i>Low</i>	
Comfortable	31	3	2	36
Quite uneasy	54	10	1	65
Accepting possible highs and lows of returns	107	34	3	144
Excited by the potential for gain	4	0	1	5
Total	196	47	7	250

**Table 7**  
**(b) Chi-Square test**

<i>Chi-Square test</i>	<i>Value</i>	<i>Df</i>	<i>Asymp. Sig. (2-sided)</i>
Pearson Chi-Square	12.871 <sup>a</sup>	6	.045
Likelihood Ratio	11.062	6	.086
Linear-by-Linear Association	1.934	1	.164
N of Valid Cases	250		

<sup>a</sup>6 cells (50.0%) have expected count less than 5. The minimum expected count is .14

\*\* Correlation is significant at the 0.01 level (2-tailed).

**H03:** There is no significant correlation among investors risk tolerance level, experience of trading, level of risk exposure, level of knowledge and satisfaction level in derivatives market.

**Table 8**  
**Pearson Correlation sig. (2-tailed) for 250 investors**

<i>Particulars</i>	<i>Experience of trading in derivatives market</i>	<i>Level of knowledge on derivatives market</i>	<i>Satisfactory level of returns from investments</i>
Level of risk tolerance	-.206**	-.297**	.237**
Experience of trading in derivatives market	1	.060	-.324**
Level of knowledge on derivatives market	.060	1	.657**
Satisfactory level of returns from investments	-.324**	.657**	1

\*\* Correlation is significant at the 0.01 level (2-tailed).

From the above table, all the factors are related with some association; firstly, the level of risk tolerance is significantly correlated with experience of trading (-0.206), level of knowledge (-0.297), and satisfaction level of returns (0.237) at the significance of 0.01 level. It means level of risk tolerance is negatively correlated with the experience and knowledge of investors and positively correlated with satisfaction level of investors. If the experience and the knowledge of investors increase, leads to decrease in the level of risk tolerance (have inverse relation).

And satisfactory levels of return have direct relation with risk tolerance level, i.e. if the level of risk tolerance is high then the satisfaction level of returns would be high. Secondly, experience of trading in derivatives market (-0.324) and levels of knowledge (0.657) are significantly correlated with the satisfaction

level of investors at the significance of 0.01 level. An increase in the level of knowledge would increase the level of satisfaction of returns from the market. But in case of experience of trading, the level of satisfaction is negatively correlated, because the experience is based on the performance of the investment, whether the investors faced any losses, or earned profits from the investment. So, as the investors experience frequent losses will leads to decrease in their satisfaction level of returns.

## 5. SUMMARY AND CONCLUSION

Based on the analysis, it is found that Indian Derivatives Market is mainly dominated by male investors and was mostly in young age (less than 30 years). Most of the investors are educated and employed with minimum monthly income of ₹25,000. It can be clearly seen that the investors are little mature, aware of derivatives nature and risks, were satisfied with the returns. Investors expect maximum profits from the derivatives and have high level of risk tolerance. Most of the investors use derivatives in their investment to enhance maximum profits with limited amount of risk.

Investors are highly influenced by factors like past performance, level of knowledge, satisfactory levels of returns and level of risk tolerance, which makes investors more confident, behave rationally in the market and also helps them evolve as strong risk takers. Due to heavy price fluctuations, negative perception of derivatives market and lack of understanding, investor's behave irrationally in the market, experience huge losses. Warren Buffet stated that individuals should invest only in what they understand, and it is imperative that investors must understand the role of derivatives and can invest into it.

From the study, it can be inferred that majority of the investors use derivatives market to earn huge profits irrespective of risks. In recent years, retail investors have been very much aware of risks in their investment, actively participating with the motive of maximize the profits and expose themselves to high level of risks. As the investors' attitude is keeps changing according to their expectations, depending on various factors, it is very difficult to understand about investors thoroughly. Hence, it is very important for the governing bodies to regulate the market and educate the investors periodically in order to achieve market efficiency.

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