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Impact of Financial Knowledge on Trading Decisions in BSE's Equity & Derivative Markets

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Abstract— The Indian capital market serves as a vital mechanism for mobilizing savings and facilitating economic growth. Among its pillars are the equity and derivative markets that provide both investment opportunities and risk management instruments. This research paper, titled “A Study on Awareness of Derivative and Equity Market of BSE,” seeks to evaluate the level of awareness, participation, and perception of retail investors toward these markets, focusing on the Bombay Stock Exchange (BSE).

The study adopts a mixed-method approach using both primary and secondary data. Primary data were collected through structured questionnaires administered to 30 respondents representing varied demographics. Secondary data were obtained from official sources such as SEBI, BSE, RBI, and AMFI reports. The collected data were analyzed using descriptive statistics and graphical tools to assess awareness levels, investment habits, and perceived risks.

The study finds that while equity markets enjoy moderate awareness and growing participation, derivatives remain largely misunderstood. Many investors perceive derivatives as complex and risky instruments. Education level and income strongly correlate with investment awareness. Gender disparities were also noted, with male investors dominating participation. The research highlights challenges like low financial literacy, misinformation from social media, and underutilization of institutional awareness programs.

The findings emphasize the need for structured financial education, targeted investor training, and transparent regulatory communication. The study concludes that enhancing financial literacy.

I. INTRODUCTION

Financial markets are fundamental to any nation's economic development, acting as channels for mobilizing savings and allocating capital efficiently. In India, stock exchanges such as the Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) have transformed the financial landscape by facilitating transparent trading mechanisms and ensuring investor confidence.

The BSE, established in 1875, is Asia's oldest stock exchange and a cornerstone of India's financial system. Over the decades, it has evolved from traditional floor trading to fully digital platforms, offering investors a wide range of products such as equities, derivatives, mutual funds, and exchange-traded funds (ETFs).

These products provide investors with diverse opportunities to invest, hedge, and manage risks.

Equity markets represent ownership in companies and play a crucial role in wealth creation and capital formation. They enable investors to participate in corporate profits through dividends and capital appreciation. Conversely, derivative markets—which derive their value from underlying assets such as stocks, indices, or commodities—offer instruments for hedging and speculation. Common derivatives like futures and options allow investors to lock prices or capitalize on market movements.

Despite technological growth and government initiatives, retail investors' awareness of these instruments remains limited. Most participants understand basic equity investing but view derivatives as complex or risky. This gap in understanding limits retail investors' participation, reducing the market's overall efficiency and inclusiveness.

In recent years, SEBI and BSE have emphasized financial literacy through campaigns and workshops, yet many retail investors still rely on social media or unverified tips for trading. Such practices lead to losses and erode trust in markets. Thus, this study aims to assess investor awareness, identify the barriers to participation, and recommend measures for enhancing understanding of equity and derivative markets.

II. LITERATURE REVIEW

A review of existing literature provides the foundation for understanding previous findings and identifying research gaps.

Chakraborty (2019) found that investor education significantly improves participation in capital markets. However, awareness about derivative instruments remains low among Indian retail investors.

SEBI Report (2023) revealed that 91% of retail investors in derivative trading incurred losses, emphasizing the urgent need for awareness and training programs.

Agarwal & Pradhan (2020) explored the relationship between financial literacy and investment behavior, finding that higher education leads to more disciplined trading patterns.

Gupta & Arora (2021) studied retail participation in equity markets and noted that digital trading platforms have increased accessibility but not necessarily



understanding.

Kumar & Singh (2022) emphasized behavioral finance, showing that herd mentality and overconfidence bias affect trading decisions.

BSE Investor Education Initiative (2024) indicated that investors attending training Theoretical Framework sessions showed higher retention and better portfolio diversification.

Saxena (2020) concluded that lack of understanding of margin trading and options pricing leads to speculative losses in derivative markets.

Chaudhary (2023) analyzed gender participation and found that women investors are under represented in derivative trading, often due to risk aversion and limited exposure.

RBI Bulletin (2024) highlighted the correlation between income level and investment sophistication.

Patel (2021) emphasized that while technology has simplified trading, it has also created avenues for misinformation.

Research Gap:

Existing studies show an increased focus on financial literacy but limited empirical evidence on how retail investors perceive and understand derivatives compared to equities. Few studies combine primary data with real market indicators from BSE. This research fills that gap by providing direct survey-based insights and linking them to secondary data trends.

1.1 Equity Market Concepts

Equity represents ownership in a company. The price of a stock reflects investor expectations about future profitability. Equity investments provide both dividends and capital gains. The Efficient Market Hypothesis (EMH) suggests that market prices reflect all available information, making awareness and analysis key differentiators in investor performance.

1.2 Derivatives Market

Derivatives derive value from underlying assets such as shares or indices. Futures require mandatory execution, while options grant a right but not an obligation to transact. Derivatives serve functions like hedging (risk protection), arbitrage (price difference exploitation), and speculation (profit from expected price movement).

Lack of awareness often leads to misuse.

1.3 Risk-Return Trade-off

According to Modern Portfolio Theory (Markowitz, 1952), higher returns entail higher risk. Derivatives amplify both due to leverage. Awareness of this trade-off helps investors construct diversified portfolios.

1.4 Behavioral Finance

Investor psychology significantly influences decision-making. Prospect Theory (Kahneman & Tversky) suggests investors fear losses more than they value gains. Limited awareness exacerbates such biases, leading to irrational trades.

1.5 Regulatory Framework

SEBI and BSE regulate trading, margin requirements, and investor protection. Awareness of these rules ensures compliance and minimizes fraudulent practices.

II. RESEARCH METHODOLOGY

Research Design

This study employs a descriptive research design combining both quantitative and qualitative analysis to assess awareness levels.

Objectives

To examine awareness of equity and derivative markets among retail investors.

To analyze demographic factors influencing participation.

To identify challenges faced by investors in understanding derivatives.

To suggest strategies for improving financial awareness.

Data Collection

Primary Data: Collected through questionnaires from 30 respondents across age, gender, and occupation.

Secondary Data: BSE, SEBI, NSE, RBI bulletins, AMFI reports, academic journals.

Sampling Method

Convenience sampling due to limited time frame (MBA SIP project). Respondents included working professionals, students, and small investors.

Percentage analysis Pie charts & bar graphs Comparative analysis Thematic interpretation

Scope

The study focuses on investors associated with or aware of BSE. Findings reflect general awareness patterns, not specific portfolio outcomes.

Limitations

Small sample size (30 respondents) Limited to urban participants Time-bound survey Possible response bias

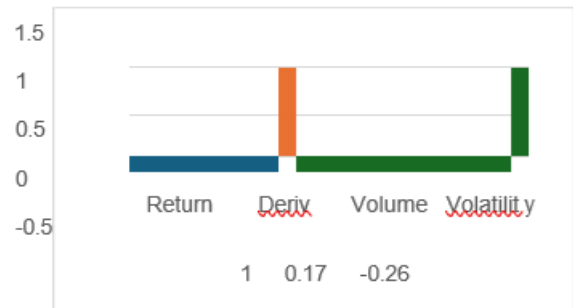
III. DATA ANALYSIS & INTERPRETATION

Correlation matrix

Descriptive statistics (example variables:
 Sensex Annual Return (%), Derivatives
 Volume (Mn), Market Volatility)

| <u>Statistic</u> | <u>Sensex Annual Return (%)</u> | <u>Derivatives Volume (Mn Contracts)</u> | <u>Market Volatility (Std Dev)</u> |
|------------------|---------------------------------|--|------------------------------------|
| Mean | 11.85 | 424.00 | 0.24 |
| Std. Dev | 4.55 | 218.38 | 0.07 |
| Min | 6.34 | 210 | 0.18 |
| Max | 16.19 | 740 | 0.32 |
| N | 5 | 5 | 5 |

| | <u>Sensex Return</u> | <u>Derivatives Volume</u> | <u>Volatility</u> |
|--------------------|----------------------|---------------------------|-------------------|
| Sensex Return | 1.00 | 0.17 | -0.26 |
| Derivatives Volume | 0.17 | 1.00 | 0.13 |
| Volatility | -0.26 | 0.13 | 1.00 |



| | Std. | Dev | Min | Max | N |
|--|-------|-----|------|-----|---|
| | 11.85 | 424 | 0.24 | | |

Correlation between Sensex returns and derivative volumes is low ($\approx +0.17$), suggesting volume growth and returns are not tightly linked in the sample.

Sensex returns are negatively correlated with volatility (≈ -0.26), consistent with higher volatility in down or uncertain periods.

Futures pricing

Formula (continuous compounding): $F = S e^{rT}$

Assumptions (example):

Spot price $S = ₹1,500$ =
 $₹1,500$

Annual risk-free rate $r = 6\% = 0.06$ = $6\% = 0.06$



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Time to maturity $T=3T = 3T=3$ months
 $=0.25= 0.25=0.25$ years **Calculation**

(step-by-step):

$$rT=0.06 \times 0.25=0.015$$

$$e^{rT} = 0.06 \times 0.25 = 0.015$$

$$e^{rT} = e^{0.015} \approx 1.01511$$

$$F = 1500 \times 1.01511 = 1,522.67$$

Result: Futures price
 $F \approx ₹1,522.67$
 $₹1,522.67 \approx ₹1,522.67$

Interpretation: If no arbitrage and storing/carry costs are negligible, the fair 3month futures price is ₹1,522.67.

Option payoff table (long call) — use this directly in annexure

Same option ($K=1600$), premium paid = ₹58.82. Show payoff at expiry for selected underlying prices STS_TST:

| STS_TST (₹) | Intrinsic payoff = $\max(ST - K, 0)$ | Net payoff (intrinsic - premium) (₹) |
|-------------|--------------------------------------|--------------------------------------|
| 1300 | 0 | -58.82 |
| 1400 | 0 | -58.82 |
| 1500 | 0 | -58.82 |
| 1600 | 0 | -58.82 |
| 1700 | 100 | 41.18 |
| 1800 | 200 | 141.18 |

Common option strategies (table + quick numeric example)

Covered call: Own 100 shares, sell 1 call (strike K).

Benefit: receive premium; downside protected by premium only.

Example: If you own 100 shares at ₹1,500 and sell one call (premium ₹58.82), you receive ₹5,882 immediate; if price $>K$ you deliver and cap upside.

Protective put: Own stock + buy put (K)

→ floor on downside.

Example: buy put at premium (assume ₹45) → your worst loss per share limited to

$$S_{\text{purchase}} - K + \text{premium} - S_{\text{purchase}} - K + \text{premium}$$

Straddle (long): Buy call + buy put same K, T — profits on big moves either side.

$$\text{Cost} = \text{premium}_{\text{call}} + \text{premium}_{\text{put}}$$

(You can add a small numeric example for any of these using the numbers above.)

7 — Hedging example using futures (practical, copyable)

Scenario: You manage a portfolio of **10,000 index units** with current index level 1,500 (portfolio value = ₹15,000,000). You want to hedge against a 3-month decline using index futures.

Given: futures price $F=1,522.67$
 $₹1,522.67$, lot size = 50

Value per futures contract =

$$F \times \text{lot size} = 1,522.67 \times 50 = ₹76,133.48$$

$$\times \text{lot size} = ₹1,522.67 \times 50 =$$



$76 \times 133.48 \times 15,000 = 1,522.67 \times 50 = ₹76,133.48$

Number of contracts \approx portfolio value / contract value =

$15,000,000 / 76,133.48 \approx 197.0215$

$197.0215 \times 50 \approx 9851.075$

$15,000,000 / 76,133.48 \approx 197.02$

Action: Sell 197 futures contracts to hedge (round to nearest whole contract). This roughly neutralizes index exposure for

the hedge duration.

(contracts are in lots of 50 units).

Steps/Calculation:

Portfolio value =

$10,000 \times 1,500 = ₹15,000,000$

$\times 1 \times 50 =$

$₹15,000,000 \times 1,500 = ₹15,000,000$

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IV. FINDINGS & DISCUSSION

Awareness Gaps: Majority of investors have limited understanding of derivative instruments.

Education Link: Higher academic qualification correlates with better investment literacy.

Behavioral Biases: Investors rely on intuition and peer advice rather than data.

Gender Gap: Female participation remains low due to perceived complexity and risk.

Preference Trend: Investors prefer equities and SIPs for long-term goals.

Technology Effect: Digital platforms promote access but not awareness.

Regulatory Awareness: Few respondents knew about SEBI investor protection programs.

These findings align with SEBI's national observation that retail derivative traders face high loss rates due to inadequate knowledge.

The study also supports global findings (OECD 2023) that financial literacy directly influences market participation.

V. RECOMMENDATIONS

Financial Literacy Integration: Introduce mandatory financial literacy modules in schools and colleges.

Women-Centric Awareness Drives: Promote gender-inclusive investor education through campaigns.

Simplified Derivative Education: BSE should create visual tutorials explaining futures and options.

Regulatory Communication: SEBI must use social media to counter misinformation with verified updates.

Collaboration with Brokers: Ensure brokers conduct certified investor orientation sessions.

Gamified Learning Apps: Develop simulation-based trading education for beginners.

Periodic Awareness Audits: Evaluate the effectiveness of investor education programs annually.

VI. CONCLUSION

The study concludes that equity market awareness is expanding in India due to technological and regulatory support, but derivative market understanding remains minimal. Retail investors often view derivatives as tools of speculation rather than risk management. The findings emphasize that awareness and education are critical for balanced participation and market stability. A coordinated effort by regulators, financial institutions, and educational bodies can transform India's capital market into an inclusive, informed ecosystem where investors participate confidently and responsibly.

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Annexure

Sample Questionnaire

Are you aware of derivative trading on BSE?

- A) Yes, fully B) Partially
C) Heard of it D) No

Which investment do you prefer most?

- A) Equities B) Mutual Funds
C) Derivatives D) Fixed Deposits

What is your source of investment knowledge?

- A) Social Media B) Brokers
C) News D) /SEBI

How would you rate your understanding of derivatives?

- A) Excellent B) Moderate
C) Basic D) Poor

Do you think derivatives are risky?

- A) Strongly Agree B) Agree
C) Neutral D) Disagree

Do you follow BSE investor updates?

- A) Yes B) Sometimes C) Rarely D) Never

Have you ever participated in awareness programs?

- A) Yes B) No C) Planned D) Unaware

What is your gender?

- A) Male B) Female