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Post-Covid Stock Market Participation in India: Behavioural Shifts, Digital Transformation, and Policy Gaps

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Abstract
The COVID-19 pandemic triggered unprecedented changes in investor behaviour, with India witnessing a rapid surge in stock market participation via digital platforms. This paper investigates the behavioural economics underlying this shift, evaluating the role of fintech platforms in altering individual investment decisions. It further examines the psychological motivations of retail investors, such as risk tolerance, herd behaviour, and financial anxiety. The study suggests that post-COVID digital adoption must be complemented by behavioural financial literacy initiatives to sustain inclusive financial participation.

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Introduction

Today India shelters the world's largest population with 1.4 billion, but not financially literate as many of the emerging market economies. India is financially literate at 27 % (RBI & NCFE, 2024) as against its BRICS members Brazil, Russia & South Africa, 35%, 38%, &42% respectively (OECD, 2024). However, of late the number of investors in the Indian stock markets has been growing increasingly. As the National Stock Exchange (NSE) states that the number of unique direct investors (going by PAN) reached 80 Million for the first time, numbering to 50 Million unique households or nearly 17% of total Indian households. As of September 2023, India recorded around 129.7 Million demat accounts, primarily due to attractive equity returns and the ease of opening such accounts.

According to RBI India introduced online trading in February 2002, during the same period only 8% of Indian households chose to use online platform to invest in shares and mutual funds. But the recent trend on the usage of online platform shows huge spike. The Stock market experts confirm that the urge is due to increased internet and smartphone adoption, growing digital literacy and, most importantly, the rising popularity of online stock trading platforms among retail investors in the wake of the COVID-19 pandemic (PwC India,2023). The number of internet users accounting to 510 Million with the value of digital transactions increased by 58% between 2022 and 2023. The retail holding in NSE-listed companies grew 8.57% by September 2023, up from 1.85% 2020 (NSE, 2023). Similarly, the number of shares held by retail investors surged from 91.5 Lakh in September 2020 to an impressive 4.33 Crore by December 7, 2023 (SEBI, 2023).

In early 2000s to late 2010 the NSE & BSE began to digitize its operations. In 2001 they opened the gateway for online retail investors. This helped the investors to trade from anywhere. During the same period digitally enabled retail brokerage firms mushroomed in the market such as ICICI direct (2000), Sharekhan (2000), HDFC Securities, and Zerodha (founded in 2010), AnandRathi, Geojit, Indiabulls, Religare, Kotak Securities, Motilal Oswal, Reliance Money, India Infoline, and IDBI Paisabuilder. They enabled investors to access real time market data. Till 2010 the apps were operated on desktop. Seldom mobile apps were prevalent.

Post 2010 there was a new era of discount brokers, smartphone entry and many mobile platforms, Zerodha became one of the prominent mobile apps because of its low-cost and no-frills approach to trading, followed by this many other apps such as Upstox (2012), Paytm Money, 5Paisa (2016) and Groww (2016) emerged in the market. Over the period of time these discounted brokerages apps became more attractive due to their zero/low cost, techno friendly, with cutting-edge analytics, quick performance.

A positive growth on number of subscribers took place during the pandemic when businesses closed and millions unemployed, staying at home, the small investors opted to dozens of low-cost digital trading platforms for passive income generation. According to SEBI, a monthly average of 26 Lakh demat accounts were opened in 2022 compared to an average of 4 lakh in 2020. The new retail investors entering the stock market between 2015 to 2020, were young, mobile-savvy and often hailed from non-metros. Going by NSE data, Groww had 6.63 million active investors by September 2023 end, followed by Zerodha with 6.48 Million users, while the total number of active traders in India stood at 32.56 Million at the time. Groww's market share stood at 20.35%, closely followed by Zerodha at 19.9%. These two firms were followed by AngelOne, Upstox and ICICIdirect (part of ICICI Securities) (NSE,2023).

From the available text on stock trading apps and financial literacy, learning indicates that as much as the trading apps grew in India since 2010 the financial literacy has not grown or the growth has been slow. There are records of financial literacy initiated by several bodies such as RBI, NSFE, and PMJDY. Hence the question being raised is that whether the stock market participation by individual investors is more propelled by stock market trading related apps or financial literacy. At the same time pointers also indicate that Covid 19 related lockdown enabled individuals to learn on their own about stock trading through several social media platforms. In order to investigate this doubt, this paper tries to study the concerned parameters and their influence on the increase in the individual investors number which is expressed by the demat accounts.

Literature Review

The evolution of financial technology and its impact on retail investor participation in India has been widely studied. Gochhwal (2017) [7] examines the introduction of the Unified Payment Interface (UPI), a mobile-based, real-time interbank payment system in India, emphasizing its transformative potential in digital payments. The study underscores UPI's role in increasing user adoption and enhancing financial inclusion by simplifying peer-to-peer and merchant transactions.

Kuriakose and Sajoy (2022) [9] highlight the growing influence of technology-driven mobile investment platforms and digital payment systems in attracting retail investors to the Indian equity markets. Although India's retail participation remains relatively lower than in developed economies, the ongoing digital transformation is fostering increased competition and enabling real-time trading opportunities for a broader investor base.

Building on this, Vivek and Kumar (2024) [12] observe a post-pandemic acceleration in retail stock market engagement, particularly among younger, tech-savvy investors. The proliferation of mobile trading applications, combined with falling data costs and rising smartphone penetration, has allowed retail investors to manage portfolios from home. Additionally, Aadhaar-based e-KYC processes have simplified demat account creation, significantly reducing onboarding friction.

Staykova and Damsgaard (2016) [11] provide a conceptual framework for understanding mobile payment ecosystems. They argue that the success of such platforms hinges on their ability to evolve from one-sided models (focusing on either users or providers) to two-sided platforms that balance user reach with service functionality. Their model offers valuable insights into the scalability of fintech platforms in emerging markets.

Arenas *et al*. (2024) [1] investigate the case of BIZUM, a real-time digital payment solution introduced by Spanish banks. Their findings suggest that the adoption of BIZUM significantly reduced the stock price volatility of incumbent banks, implying strong investor confidence in innovative, tech-driven strategies that enhance financial services.

In the Indian context, Arumugam and Mahalakshmi (2021) [2] analyze investor behavior among demat account holders in Bengaluru. Their study found that approximately 75% of demat accounts were inactive as of March 2020. The primary reasons cited include diminished investor interest and a lack of financial knowledge, often resulting in substantial losses. These findings underscore the necessity for continuous investor education and engagement strategies to sustain retail participation in the equity markets.

Objectives of the study

1. Examine behavioural shifts in investment patterns during and after the COVID-19 pandemic.
2. Analyze the psychological impact of fintech apps on investment decisions.
3. Identify gaps in policy and financial education in promoting responsible investing.

Data & Methodology

Using a time-series regression model on financial inclusion and digital adoption various variables like the number of demat accounts, internet penetration, smartphone usage, digital payment, bank account numbers, formal banking share, GDP per capita, number of financial apps and financial literacy have been used from 2015–2024, Behavioral implications are inferred using secondary survey data and empirical patterns. The interaction between COVID-19 and trading behavior is studied via a difference-in-differences model.

For the simplicity our outcome variable is number of demat account in millions and the independent variable, number of trading apps & financial literacy.

$$Y_t = \beta_0 + \beta_1 postt + \beta_2 covidsurge + \beta_3(post_t X\ covidsurge) + \gamma X_t + \varepsilon_t$$

Where:

Y_t *number of demat accounts in millions*, β_0*intercept*, $post_t$ *a binary variable* $= 1$ *for years after* 2019, *other wise* $0 (2015 - 2019)$

Covid surge: A binary variable equal to 1 if the time period corresponds to a post-pandemic surge and 0 otherwise.

$post_t\ X\ covidsurge$ *Interaction term capturing the difference – in –differences effect.*

X_t = *Control variables such as Internet Penetration, Smartphone Usage, Digital Payment Platform Usage, GDP per Capita, etc*

γ = *coefficient for the control variable*

ε = *is the error term in the model.*

Data analysis and interpretation

From the analysis the usage of digital payment platforms saw the most significant increase, registering a Compound Annual Growth Rate (CAGR) of 41.90%. This sharp rise underscores the rapid embrace of cashless transactions by Indian consumers and the widespread adoption of digital financial services. In parallel, demat accounts and trading apps also exhibited notable growth, with CAGRs of 25.78% and 31.80% respectively, pointing to a strong uptrend in retail stock market participation through digital means. These developments signify a major transformation in India's financial landscape, largely fueled by growing internet access, increased smartphone penetration, and improvements in digital infrastructure. However, the comparatively modest growth in financial literacy suggests a need for greater emphasis on educational efforts to ensure the long-term success and inclusivity of this digital shift.

Table 1: Matrix of correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Number of Demat Accounts	1.000								
(2) Internet Penetration	0.976	1.000							
(3) Smart phone Usage	0.946	0.989	1.000						
(4) Number of Digital Payment Platform	0.979	0.994	0.989	1.000					
(5) Number of Bank Accounts	0.962	0.989	0.994	0.997	1.000				
(6) Formal Banking Share	0.931	0.977	0.995	0.985	0.994	1.000			
(7) GDP Per Capita USD	0.927	0.975	0.980	0.970	0.971	0.974	1.000		
(8) Number of Trading Apps	0.990	0.992	0.980	0.996	0.989	0.972	0.960	1.000	
(9) Financial Literacy	0.920	0.925	0.932	0.951	0.957	0.946	0.926	0.944	1.000

Table 2: Linear Regression, Robust

Number of demat accounts	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
Without COVID-19 Number of Trading Apps	.352	.115	3.05	.038	.032	.673	**
Without COVID-19 Financial Literacy	-.258	1.133	-0.23	.831	-3.403	2.887	
With COVID-19 vs financial literacy	5.935	1.863	3.19	.033	.762	11.107	**
With COVID-19 vs Trading apps	.534	.118	4.53	.011	.207	.862	**
Constant	17.563	22.489	0.78	.478	-44.876	80.003	
Mean dependent var		53.250	SD dependent var			41.421	
R-squared		98.976	Number of obs			10	
F-test		2645.287	Prob > F			0.000	
Akaike crit. (AIC)		32.761	Bayesian crit. (BIC)			34.577	
**** p<.01, ** p<.05, * p<.1*							

Discussion

1. The correlation matrix from the table-1 shows a strong The correlation analysis from Table 1 highlights a robust positive association between digital access, financial inclusion, and economic progress in India over the period from 2015 to 2024. The number of demat accounts exhibits a strong correlation with internet penetration (r = 0.976), smartphone usage (r = 0.946), and digital payment platform usage (r = 0.979). These relationships suggest that enhanced digital connectivity and the increasing adoption of smartphones and cashless payment systems have significantly contributed to greater participation in capital markets.
2. Moreover, the number of bank accounts (r = 0.962) and the formal banking share (r = 0.931) also show a strong correlation with demat account growth, emphasizing the critical role of access to formal financial services in enabling stock market participation. The exceptionally high correlation with the number of trading apps (r = 0.990) further indicates how technological innovations have democratized access to financial markets and reduced entry barriers. Economic growth, as measured by GDP per capita, is also positively linked with these financial inclusion indicators, indicating that rising income levels are associated with greater use of technology and financial services. Although financial literacy shows slightly lower correlations (ranging from 0.920 to 0.957), it remains an important factor in facilitating the effective use of financial tools and services.

Regression Results and Discussion

Table 2 presents the regression analysis results, offering key insights into the determinants of demat account growth in India, particularly during the COVID-19 pandemic. The model demonstrates a high explanatory power, with an R-squared value of 98.976%, indicating that the selected variables account for nearly all the variation in demat account numbers.

1. In the pre-COVID period, the number of trading apps shows a positive and statistically significant impact on demat account growth (coefficient = 0.352, p = 0.038). This suggests that each additional trading app was associated with an increase of approximately 0.352 million demat accounts, underscoring the crucial role of fintech in enhancing retail investor access. This finding

is consistent with global trends, where platforms such as Robinhood in the U.S. facilitated broader market access by simplifying trading and lowering costs (Cookson *et al*., 2021) [4].

2. By contrast, financial literacy in the pre-COVID period did not significantly influence demat account growth (coefficient = -0.258, p = 0.831). This indicates that before the pandemic, limited financial knowledge was not a major constraint—perhaps due to other more pressing barriers like lack of digital access or awareness. Similar patterns have been documented in other emerging economies, including Brazil (Gomes & Machado, 2020) [8], where fintech adoption outpaced improvements in financial literacy.
3. However, the role of financial literacy changed substantially during the pandemic. The interaction effect between COVID-19 and financial literacy is both statistically significant and positive (coefficient = 5.935, p = 0.033), suggesting that enhanced financial education during the pandemic contributed to an increase of nearly 6 million demat accounts. This aligns with global experiences, such as in Indonesia, where digital financial education gained momentum amid lockdowns (Sari & Nugroho, 2021) [10].
4. Similarly, the interaction between COVID-19 and the number of trading apps shows a significant and positive effect (coefficient = 0.534, p = 0.011), indicating that trading app availability had an amplified impact on account creation during the pandemic. This finding mirrors patterns in the Eurozone and North America, where lockdowns accelerated the use of mobile trading platforms (ECB, 2021).
5. Overall, the regression model is highly robust, as evidenced by an F-test statistic of 2645.287 (p < 0.001) and low values for both the Akaike Information Criterion (AIC = 32.761) and the Bayesian Information Criterion (BIC = 34.577), indicating a well-specified model with minimal information loss.

Conclusion

The analysis reveals that the proliferation of fintech platforms has played a pivotal role in enhancing retail investor participation in India by significantly reducing entry barriers and democratizing access to financial markets. The COVID-19 pandemic served as a critical inflection point, accelerating the adoption of digital trading tools and catalyzing improvements in financial literacy. Empirical evidence suggests that, prior to the pandemic, the expansion of trading applications was the dominant factor influencing stock market participation, while the impact of financial literacy remained limited. However, the post-pandemic period marked a notable shift, wherein financial education emerged as a significant determinant of investor engagement. This transition reflects a broader behavioral transformation among investors—from opportunistic trading to more informed and autonomous financial decision-making. These findings align with global trends, underscoring the synergistic role of digital technology and financial education as twin drivers of inclusive financial participation in the evolving market ecosystem.

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