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Impact of mobile applications on participation of retail investors in Indian stock market

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Abstract
Over the last few years, Stock markets around the world has witnessed major changes in terms of participation of retail investors. One of the key factors behind these changes is the availability of investing opportunities via online and mobile trading. With reduced transaction cost and ease of access, stock markets have become almost within a reach of hand, especially for retail investors. We find that financial technology has enabled more small investors to enter into the stock market than the large investors because of low cost and ease of access.

Keywords: FinTech, mobile apps, retail investors, Robo advisors

Introduction

Market entry has been an interesting area of research in finance literature especially in stock markets. Being one of the major pillars of an economy, stock markets channelize savings of households to meet the financial needs of various sectors increasing productivity and growth in an economy. Indian stock market holds 1.5% market share of total world equity market value (Statista, 2022). With a total market capitalization of $3.21 Trillion, India's equity market has entered the top five clubs(Business Standard, 2022). With the rising presence of Indian investors in the global stock markets, it becomes crucial to understand what drives these investors to enter this market in the first place in an era of fast developing technological innovation.

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As on march 2022, retail participation in companies listed on NSE has reached an all time high to 7.42% from 7.33% on December 31, 2021. This increase can partly be attributed to new investor registration corroborated with the opening of 221 lakh new individual demat accounts in April-November 2021(Economic Survey,2021). With the evolution of technology, financial behaviors of individual investors as well as financial institutions have seen new attributes.

Mobile apps have become a dominating force controlling our everyday lives. Usage of mobile trading apps in stock markets has seen a sharp uptick following the increasing participation of institutional as well as retail investors. In India, smartphone penetration rate reached 54% in 2020 and is estimated to cross 90% by 2040(Statista,2022). By 2026 , India will have almost 1 billion smartphone users(Deloitte) coupled with internet penetration of 40% (World bank, 2019) has fueled the adoption rate of mobile trading apps. Investing activity and stock trading on mobile phones has surged up to 45% during the pandemic induced lockdown in 2020 from 24% in the previous year (Rukhaiyar, 2020). Stock broking apps like Upstox and Zerodha have witnessed 20% increase in new investor registrations mainly below the age of 30 years (Mookerjee et al., 2020).

The idea of robo-advisors has also been gaining attention of retail investors. Although being in nascent stages, robo-advisory services are becoming attractive for entry level or small investors (Economic Times). Artificial Intelligence and Machine Learning has changed the mode and cost of delivery of information, especially to those who are relatively new to the markets.

This paper aims to study the impact of technological advancement like mobile applications on retail investor's participation and trading activities in stock markets. It complements existing research that considers financialization from a technology development perspective. Viewing mobile trading apps and robo-advisors as social technologies, the paper explores the realm of automated delivery of financial advice and how it helps people with relatively less investment knowledge and impact their participation rate.

We start with analyzing the various FinTech solutions available to the investors in India and how these solutions are impacting the financial decision making process of the retail investors. We then move on to list the factors that affects adoption of these technological innovations by investors. Our next part focuses on understanding the role of behavioral biases when investors execute their trade.

Literature Review

This section focuses on analyzing financial technologies used by Indian retail investors in present times. Starting with the definition of retail investor applicable in India, we move on to

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assess the features, benefits and limitations of various FinTech solutions, particularly mobile trading apps and robo advising.

Retail investors

The Indian stock market has evolved over time and so is the definition of the retail investors. As per SEBI(Disclosure and Investor Protection), 2000 (DIP Guidelines) until August 2003, Retail investor was an individual who applies for allotment of 10 or less marketable lots in a case of fixed price issue or up to 1000 units in a book built issue. But there is no differentiation between various investors in this definition e.g. an investor who applies for 1000 shares of Rs 540/- each and an investor who applies for the same amount of share for Rs 10/- each. These guidelines were amended in August 2003 from the basis of quantum of shares applied for to the amount of shares applied. The definition then provided that an investor who applies or bids for securities of or for a value of not more than Rs 50,000 will be a retail investor. This limit of 50,000 was considered low mainly in case of book built issues of large size with resulting high transaction cost. In March 2005, this limit was upgraded from Rs 50,000 to 1,00,000. This guideline was later reintroduced in the SEBI(Issue of Capital and Disclosure Requirements) Regulations, 2009. This limit was again upgraded to 2,00,000 to adjust to inflation in 2010. In December 2021, SEBI increased the limit for investment to Rs 5,00,000 through UPI mechanism.

United Payment Interface (UPI) makes it easy for investor to invest in stock market through its free of cost, instant and secure transfer.

Financial Technologies

Financial Technology (FinTech) solutions have been classified into seven groups: Mobile transactions, Robo advising, Internet of Things, Data Analytics, Peer to Peer, Blockchain and Cyber security (Chen,Wu, Yang). Some of these categories are quite broad and are widely used in financial sectors while others like robo-advising are relatively a niche sector.

Smartphones allow instant access to trading without any geographical barriers. Trading apps like Zerodha have become popular for opening investing avenues for less wealthy investors as they allow opening of account with no minimum amount requirement and zero commission trading. These apps not only allow novice traders to invest in riskier securities like options and cryptocurrencies but also to adopt strategies like “short squeezing” which are relatively risky (chaudhry and kulkarni, 2021). Design, features and structures of trading apps also induce specific investing behaviors (chaudhry and kulkarni, 2021). Investors can choose from various portfolio suggestions by the brokerage firm through the app based on meticulous research and also offer automatic investment features. It has been found that investors tend to use technology more in after-hours (Kalda, Loos, Previtero, Hackethal, 2021). But these apps also have their

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share of limitations like restricted access to currency products, derivative products and data on international stock indices. They are also prone to system error and internet connectivity issues.

The effect of smartphones on investment decisions of retail investors is long lived and is not transitory in nature(Kalda, Loos, Previtero, Hackethal, 2021). Investors shows tendency to make instinctual decisions when using mobile apps. But with this convenience also come some side effects (Kalda, Loos, Previtero, Hackethal, 2021). Research has shown that investors experience greater inclination towards trend chasing, gambling and more risk taking. Previous studies have concluded that these type of behaviors decrease portfolio performance and efficiency.

Robo-advisors are virtual financial advisors that provide algorithm-driven financial services. Launched after the Great financial Crisis of 2008, robo-advisors optimize and manage passive indexing strategies or buy and hold investments through simple online platforms based on some variant of modern portfolio theory. They utilize rebalancing bands to maintain weightings of optimal asset classes following the movement of the stock market. Rebalancing of this type has been frowned upon in the past because of high transaction cost and time consumption but robo-advisors have removed that hurdle by automating the process. This can be seen in tax loss harvesting which tries to limit the identification of short term gains. Tax loss harvesting focuses on selling securities at loss to limit capital gain tax liability(investopedia).

While using financial advisors investors typically various factors, including (a) Annual management fees, (b) Tax services, (c) Investment products and asset allocation, (d) Goal based planning, (e) Automation, (f) Minimum initial investment amount (Ludwig, 2018; Phoon & Koh, 2017).

Some factors, however, are preventing people from utilizing robo advisors. As per a research poll conducted by LendEDU, more than 75.7% of the targeted users (millennials) of robo advisors are reported to have no experience of working on these apps. The biggest reason behind this figure was the non familiarity with the word robo, followed by the belief that human advisors are more efficient in preventing financial losses as compared to robo-advisors. In another report of LendEDU, it documented that millennial investors expected(42.25%) robo-advisors to outperform the market (Hamory,2018).

Factors affecting technology adoption

The availability and ease of accessing information plays an important role in adoption of Fintech, especially mobile apps. Availability of a wide variety of financial data like price and volume analysis, charting tools, real time price quotes etc, affects adoption ability of an app (A digital blogger, 2020). A major proportion of the investors have been found sensitive to historical data especially price trends (Kumar and Dhar)

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- In stock markets, time is money where information delayed for a mere seconds can cost a fortune to an investor (Welch,2020). App speed has a positive impact on adoption of financial technologies (Davis,1989; Lu et al.,2003).

- Security concerns make the users susceptible to e-trading apps(Kindberg, Sellen and Geelhoed, 2004). One of the major causes behind non-adoption or app deletion is the poor security features(Balapour et al., 2020; Levenson, 2016).

- Tech savvy investors are more prone to like mobile trading apps with better user interface experience especially in the first time use (Welch,2020).
- Easy to use features as found by Venkatesh (2000) makes an app more acceptable and favorable.

Behavioral bias

Even with the widespread adoption of modern financial discipline, it remains difficult to explain scientifically the reason behind irrational behaviour of investors particularly when money is concerned (Adrian Mitroi, 2014). The behavioral approach tries to explain financial market's behavior in conflict with the efficient market hypothesis. Whereas in Classical finance it was believed that the information available in the market is always projected in the security prices (Fama, 1970), in behavioral finance the irrational behavior of Efficiency was thought to have deviated the prices of stocks and securities. With increasing investor engagement, Behavioral finance gave more relevance to investor behaviour and their decision making process while making an investment (Liu, 2015). We all have deep-seated prejudices that reside deep in our psyche. They are useful in our daily lives, but they can have the opposite effect when investing. (Lin, 2015)

The investment decision process is considered an important decision for all investors. Investing in stocks in particular is risky and returns are uncertain. Forty attributes have been identified that influence an investor's buying decision-making process when choosing a particular stock to invest in. The most influential attributes were identified and ranked according to the frequency of their most important evaluations by investors. After applying factor analysis, all 40 attributes were correlated with the following 10 factors: personal eccentricity, wealth maximization, risk minimization, brand awareness, social responsibility, financial expectations, and accounting information. , government and media, economic expectations, and lawyer recommendation factors. (Dr. Syed Tabassum Sultana, 2012)

One such bias is Local bias, wherein investors tend to show an inclination towards the stocks with which they have some extent of physical or psychological proximity like their favourite

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apparel brand or chain restaurant, local construction companies or the industry they are employed in (chaudhry, kulkarni, 2021).

Today, Behavioral finance has become the very core of the decision making process. Behavioral finance helps investors make better investment options and can help in avoiding mistakes in the near future. Investors can improve performance by identifying biases and misconceptions. (Verma, 2016)

The field of behavioral finance was born to overcome the difficulties faced by the traditional field of finance. In essence, behavioral finance explains that investment decisions are not always influenced by rationality. (Singh, 2019)

Methodology

This study utilizes secondary sources of data collected from journals, research papers, magazines, newspapers and research websites etc.

CONCLUSION

Mobile phones have become one of the most widely used technologies in the world and the same is used for different types of activities online, investing in stock markets being one of them. A new generation of investors is embracing mobile stock trading with renewed enthusiasm, largely due to social changes after the Covid-19 pandemic outbreak. By reviewing various researches on the impact of mobile apps and retail investor trading we document that these apps have become one of the frequently used investment tools and are benefiting both the investors and markets by eliminating multiple intermediaries and by cutting down the cost of investing to almost zero. Robo-advisors have removed that hurdle by automating the process. The availability and ease of accessing information plays an important role in adoption of Fintech, especially mobile apps. The behavioral intention of the investors also impacts the investing decision and adoption of mobile apps for investing. SEBI Investor Survey 2015 shows that about more than 40% of the Indian investors depend on themselves for making investment decisions. This demonstrates self-confidence bias indication, a much- documented phenomenon found in behavioral finance. It can be one of the reasons that more and more people are moving towards using mobile apps for investing. Access to the Internet and the introduction of new and affordable technologies have led to a steady increase in retail investor participation in the stock market.

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