



# A STUDY ON THE IMPACT OF USER INTERFACE OF TRADING APPS ON INVESTMENT BEHAVIOR

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*Abstract:* With the development of technology, we are now witnessing online platforms succeeding in the financial sector. Access to the stock market has significantly increased due to website portals and mobile trading applications. Nearly every month, a brand-new mobile trading app is released, and numerous new traders and investors have entered the market. Now that trading is possible on cell phones, both institutional and retail clients have increased.

The different features available in the trading app makes the investors take decisions quickly, that is, it makes them an active learner. Therefore this research has attempted to understand whether the features of the trading app makes the inventors take decisions quickly, that is whether the mobile trading app makes the investor an active learner or a reflective learner. This study is used to analyze the effect of different features of trading app UI in investor's decision making. For this purpose three different mobile trading apps like Zerodha, Upstock, Groww were selected and three different sets of Questionnaires were prepared in-order to analyze which trading app is perceived as the best among them by the users.

*Key Words* - User Interface (UI), User Experience (UX), Investor Behavior, Trading App

## I. INTRODUCTION

The stock market is one industry where the use of mobile apps has increased. Since the last couple of years, many consumers have started using the mobile trading apps of stock broking companies. However, the lockdown has resulted in a significant increase in stock trading and investment activity on mobile phones, reaching 45% in May 2020 as opposed to 24% in the same month previous year.

Stock brokerage apps like Zerodha and Upstox have seen a 20% increase in first-time investors, mostly under the age of 30, with 1.2 million new accounts opening at CDSL in March and April (Mookerjee, 2020). Many others jumped on this increase, believing that there is a justified valuation of stock prices post March lows. Investors and users of mobile trading apps now have more time at their disposal to focus on stock prices in a more focused manner because of the two-month lockdown and the flexibility of working from home (Anand, 2020). This study also makes an attempt to analyze how color used in the UI makes a prominent impact on investor decision making.

## II. Theoretical framework

Standard economic theory is based on the belief that all available information is incorporated into the investment process as well as individuals behave in a rational manner. This assumption is known as RAT, which is rational actor theory (Pareto, 2022). This is the core of the efficient market hypothesis (EMH). The RAT assumption has been questioned by the researches, who have found evidence that the rational behaviour is in fact not as prevalent as mainstream economics might have us believe. The goal of behaviour finance is to comprehend and clarify how emotions affect financial and investment decision-making.

Most investors do not even beat fixed deposit rates and this has been proved by Dalbar in his report titled "Quantitative analysis of investor behaviour" (Dalbar, 2015). The study found that typical investors continuously fall short of generating returns that surpass or even match the broader market indices. It was also discovered that the average equity mutual fund investor underperformed the S&P 500.

The stock market has recently changed from being a place that was only accessible to institutional and wealthy investors to one that is now open to less privileged people thanks to smartphone-based trading apps (Ojha, 2022). These applications don't have a minimum investment requirement like traditional brokerage businesses do. Furthermore, while newer apps don't charge commissions for the majority of securities, older brokerages charged investors every time they bought or sold an investment.

Smartphone apps such as Robinhood and Public are promising to democratize investing. Some studies have also proposed design guidelines for app UI (SayanChaudhry, 2021). Some of them are:

1. Findings from finance and economics literature on healthy investment practices,
2. The dual process theory bodies from behavioural science.
3. Design metaphors used in interfaces with uncertain rewards.

This UX (user experience) due to an enhanced UI power by AI based algorithms create visible changes in user behaviour or in this case investor behaviour.

Using smartphones increases the purchase of riskier and lottery-type assets as well as pursuing prior gains when comparing trades made by the same investor in the same month on various platforms (A Kalada, 2021) It has also been determined that the cognitive and affective processes that drive the investment process interact to promote rational conduct (Milan Iovnic, 2018).

Multiple factors have a stronger impact on the behaviour of commodity market investors in India (Elankumaran, 2010). Information asymmetry, objectivity, high sector, and low risk are the primary contributory factors. The risk appetite may also differ based on the gender of the investor (AjmiJy., 2008). Men are less risk-averse than women, investors with less education are less likely to take risks and age factor is also the role in risk tolerance, and the investors with higher money also exhibit greater risk tolerance.

Investor behavior is also influenced by factors such as anticipated corporate profitability, getting rich quick schemes, the marketability of the company's stocks, government ownership, and the development of organised financial markets (Tamimi, 2006). Perceived behavioral control (Thaler, 1980) plays a major role in investor behaviour when it comes to examining individual stock market investments as it is connected to risk tolerance of the investor.

#### *Impact of Color*

Several studies over time have established that colors used in the UI design have a certain degree of impact on user behavior (Bazley et al., 2021). This specifically true with respect to the colour red which was the main focus in the study cited above. Some colors like red carry a universal meaning of danger or stop barring some countries like China where the color red symbolizes prosperity (Bazley et al., 2017). In the stock market however the color red is not something people like to see (Burns, 2023) and which in turn decreases the investors eagerness to purchase stocks. Stock trading apps have two colors in prominence; red and green. The human mind has long been influenced by color and this has been well documented in various studies (Elliot & Maier, 2014).

A descriptive research design was adopted for this paper as it was deemed fit to use such a framework to describe the current situation at hand. This design facilitated an accurate portrayal of the observations made during the course of the study. of Data, study's variables and analytical framework. The details are as follows;

### **3.1 Population and Sample**

There are a lot of users of mobile based trading applications in Kochi. A small sample of this total population was collected and tests were run on the data collected. The total users of trading apps specifically from Zerodha, Upstock and Groww in Kochi were considered as the population of the study. This enabled a proportionate selection of samples from the three sets of users.

A total of 150 samples comprising 50 each from three different trading app (Zerodha, Upstock and Groww) users were selected using the convenience sampling method.

### **3.2 Data and Sources of Data**

This study used a mix of both primary and secondary data. The primary data was collected using a questionnaire which was administered to a group of respondents who were using the aforementioned apps. Furthermore a detailed study of secondary was conducted in order to review literature for the study.

Variables used:

Investment and analysis Information  
 Apps performance and speed feature  
 Privacy and security concern  
 Color Combination  
 Decision Making

Here Decision Making was kept as dependent variable for the study.

### **3.4 Statistical tools and econometric models**

The data collected from the respondents are tabulated into SPSS in order to run an Automatic Linear Regression on the variables to ascertain the effects of the independent variables on the dependent variable. Furthermore a perceptual map was created using Microsoft Excel in understand the perception of the respondents with regard to the apps that they are using.

## **IV. RESULTS AND DISCUSSION**

In order to better understand the relationship and the impact of various variables on each other, Automatic Linear Modeling (ALM) embedded in SPSS was used. This was used to establish the relationship between decision making and the various variables affecting it. Using this model a diagram was created which depicted the various predictors in the order of their importance.

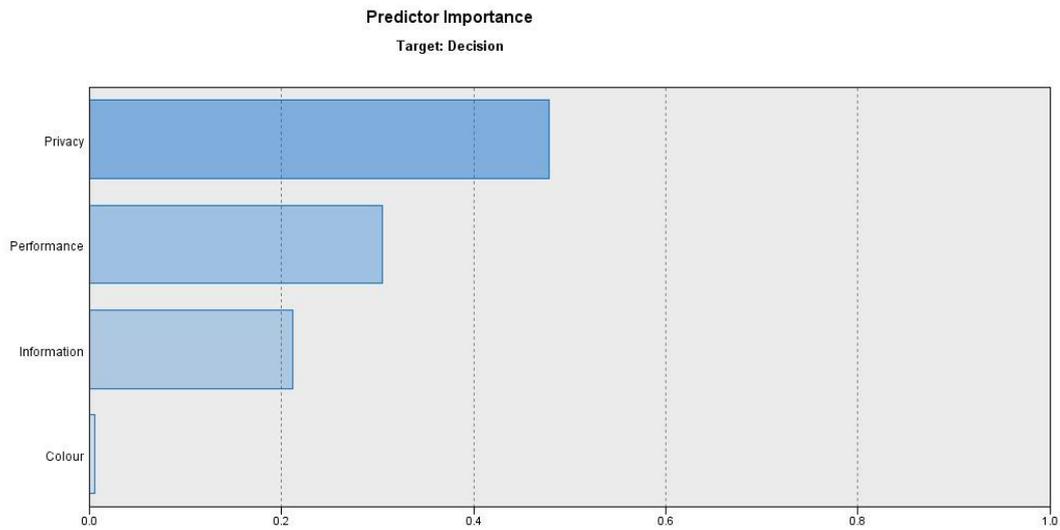


Figure 1

As seen in figure 1 the most important predictor is ‘Privacy’ (48%) followed by ‘App Performance’ (30%) and ‘Information Analysis’ (21%). Around 48% effect is due to the variable ‘Privacy & Security’ and 30% is due to the variable ‘App Performance’. This clearly indicates that the respondents gave a high degree of priority to the privacy and security features provided by the application which has a bearing on how people analyze and perceive the information that they receive from the application.

Another Outcome of the ALM was the creation of an effects chart which uses the thickness of the connecting lines to show the effect of the variables shown below on information analysis.

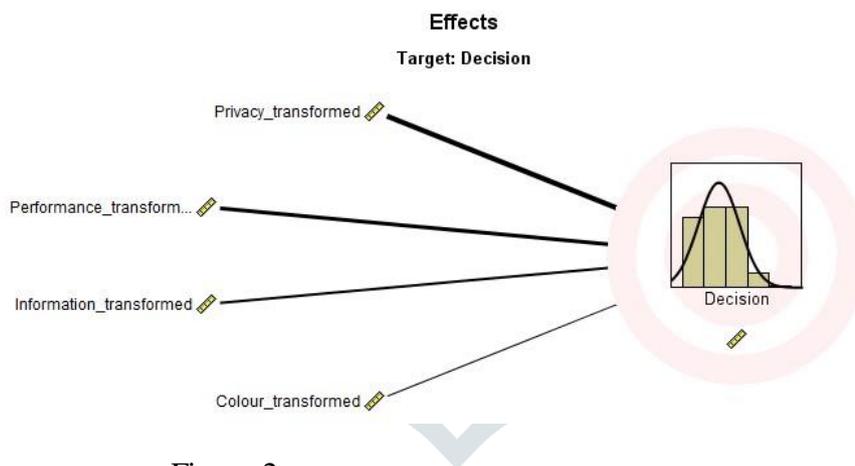


Figure 2

This graphical representation in Figure 2 shows that the line formed by ‘Privacy’ is the thickest followed by ‘App Performance’ and ‘Information Analysis’. This may be due to the fact that people vary the amount of data collected by the app and how it is used by the app providers. Colors form an important part of visual aids which trigger heuristics used by human beings for quick decision making (Blumenthal-Barby, 2021) but in our study the level of significance attached to the colors seen in the app was comparatively low.

### Perceptual diagram

A perceptual diagram was also created to better understand how investors perceive the different applications on the basis of color combinations, investment and analysis information, privacy and security concerns, app performance and speed.

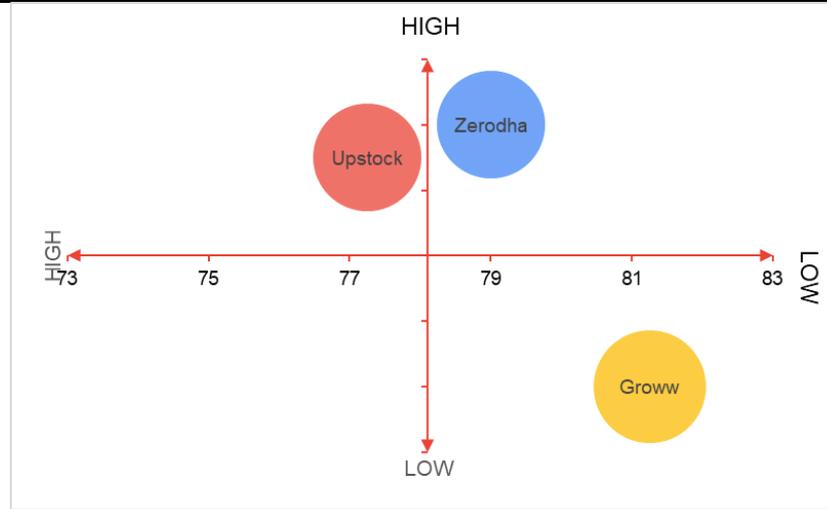


Figure 3

As it can be seen in Figure 3 the user interface of Upstock has been ranked in the High - High Quadrant which means that they find the UI of the aforementioned app most appealing based on the criteria given to them. The user interface of Zerodha is second on the list as it falls in the High- Low Quadrant. This means that people have certain concerns about the UI of Zerodha with respect to the parameters under discussion. The respondents found the UI of Groww though great in the onset has lost a bit of an edge to the new age investment apps. This feeling is also reflected in the huge popularity of Zerodha which has spurred the growth of new and young investors.

## Conclusion

This research was an attempt to better understand how investor behavior is influenced by user interfaces. There are clear indications that people tend to behave differently when they are exposed to well-designed interactive interfaces in their mobile devices than what they may normally do. Further research may reinforce the conclusions that have been drawn from this study. With the advent of AI based technologies and machine learning it is imperative that the effects of these new age tech on human behavior are studied with increased vigor.

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