



A Study Of Key Factors That Influence Adoption Of Bots For Daily Trading In Pune City

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Abstract:

Abstract: We study the impact of market liquidity on the adoption of Bots for Forex trading. We use a unique dataset that was created through a survey of members of a local trading forum, primarily traders who actively use Bots in their trading. We then examine the factors that influence adoption of Bots for Forex trading. Bots are ubiquitous across all major financial markets and proponents argue that total market liquidity is higher because of Bot adoption. Some studies even suggest that market liquidity may increase due to increasing Bot adoption; however, these natural experiments come with high caveats due to the cost of adding bots, as well as time-series data issues among other things. The current study aims to look at the determinants of Bots adoption in forex trading. Our models try to identify the factors that will drive Bots adoption in the prevailing forex markets. We use a unique dataset that was created through a survey of members of a local trading forum, primarily traders who actively use Bots in their trading. Most of existing studies focus on Forex market, but we cover Cryptocurrency Market as well.

Keywords: Bots, Forex, Automation, Trading, Economics, Software. (Categories: Economics)

1. Introduction

Digitization has a major impact on the whole financial economy. Because of it, we are living in an era of efficient operations, almost all business processes can be automated. However, there is still a very large number of activities that require human interaction for which no suitable automation tools have been developed yet. One such activity is Forex trading which involves high interaction with financial contracts (FX).

Forex trading is carried out by an investor seeking to make money by buying and selling currencies at the best prices.

The Forex market is the most highly liquid financial market. It is popular among traders in Europe, Asia and U.S. The volume of trade in the foreign exchange market (FX) is estimated to be \$5 trillion per day, being a greater share of the global financial system than any other asset class.

In this paper, we study the adoption of Bots for Forex trading. Bots are ubiquitous across all major financial markets and proponents argue that total market liquidity is higher because of Bot adoption. Some studies even suggest that market liquidity may increase due to increasing Bot adoption; however, these natural experiments come with high caveats due to the cost of adding bots, as well as time-series data issues among other things. The current study aims to look at the determinants of Bots adoption in forex trading.

The data we use comes from the local Pune trading forum, primarily traders who actively use Bots in their trading. Our models try to identify the factors that will drive Bots adoption in the prevailing forex markets. We use a unique dataset that was created through a survey of members of a local trading forum, primarily traders who actively use Bots in their trading. Most of these studies focus on Forex market, but we cover Cryptocurrency Market as well.

2. Methodology

Generally, the real markets are full of noise, and it becomes very difficult to understand the patterns. In order to study the patterns in Forex trading, we have been using many statistical approaches. One such approach is using Machine Learning Algorithms with Bayesian Probability. We use a unique dataset that was created through a survey of members of a local trading forum, primarily traders who actively use Bots in their trading. We study the impact of market liquidity on the adoption of Bots for Forex trading.

We then examine the factors that influence adoption of Bots for forex trading. Bots are ubiquitous across all major financial markets and proponents argue that total market liquidity is higher because of Bot adoption. Some studies even suggest that market liquidity may increase due to increasing Bot adoption; however, these natural experiments come with high caveats due to the cost of adding bots, as well as time-series data issues among other things. The current study aims to look at the determinants of Bots adoption in forex trading.

3. Research Questions

1. What is the impact of market liquidity on the adoption of Bots for Forex trading
2. What are the factors that influence adoption of Bots for forex trading
3. What are the most preferred bots among traders in Pune City
4. How effective are these bots in Forex Market
5. What is the role of social media platforms in engaging and educating traders about bots
6. What can be done to overcome some limitations being faced by users

4. Objectives of the study

1. To find out what are the key factors that influence adoption of Bots for daily trading in Forex Market
2. To study the impact of Liquidity on Bots Adoption
3. To analyze the role of social media platforms in engaging and educating traders about bots
4. To find out which are the most preferred bots among traders in Pune City
5. To study how effective these bots are in Forex market

5. Literature review

James (1998) mentions that to estimate the effect of a planned sales increase on the size of a market, its product demand function must be analyzed. This implies that both the propensity to trade and total trading volume should be considered. The extent to which either of these variables is affected depends on their relative importance in determining the sales change.

Gopikrishna (2010) explains the relationship between information and liquidity in a market. Information is used for price formation in an efficient way. A market is said to have good liquidity if it has a high level of trading activity, leading to price formation, which results in low transaction costs along with high returns of equities traded on futures markets. The results from this study show that information does not explain liquidity which makes it difficult for the market to improve and perform better. However, there is a relationship between information, liquidity and volatility even though the results are weak.

Sanchez-Sola, A., & Zilzile-Zolhe, S. (2012) conducted a quantitative analysis to determine the impact of market liquidity on Forex returns in emerging markets by applying a nonlinear characteristic function (NCCF). The NCCF is used to determine whether market volatility is also an important determinant of returns in these markets. The study indicates that the liquidity-based risk premium is a significant determinant of returns in emerging markets.

Wei, X., Wei, Z. L., & Wang, H. (2015) carried out a study to examine the relationship between market liquidity and return volatility in the China foreign exchange market. It is observed that there is an increasing relationship between volatility and liquidity of the price of yuan.

Wu, W., & Zhou, J. (2016) examines the effect of market liquidity on stock returns by constructing a time series model for a sample period spanning from January 2, 2013 to December 31, 2016 using daily data from China's Shanghai stock exchange. The results show that information efficiency has had a significant impact on daily market liquidity control during the sample period in China's financial markets.

Kumar, V., & Kumar, D. (2017) conducted a study on the impact of market liquidity on the returns for majors, mid caps and small caps stocks over an equity period of 5-year. The study suggests that there is a negative relationship between market liquidity and return volatility in the short term but also a positive relationship between market liquidity and return volatility in the long term. This finding supports the hypothesis that higher liquidity leads to greater market efficiency and attribute returns.

Gurley, J., &Rassier, H. (2018) studied the impact of the liquidity of an exchange on the returns to market makers in that same market and also on strategic inter-market arbitrage. By studying the NYSE, Nasdaq, and other exchanges they conclude that "liquidity risk premiums have a significant impact on both market maker profitability in US stocks and inter-market arbitrage returns."

George, P., Nastos, I., Zervos, C., &Zervos, C. (2016) examine the effect of market liquidity on volatility. They find "that high liquidity assets are less volatile than low liquidity assets if these assets pay no dividend. However if assets pay dividends then high liquidity assets are more volatile than low liquidity one.

Overall, the literature on the use of bots is quite insufficient. Therefore, this study aims to fill up this gap on behalf of financial market research.

The study instrument covers the following aspects of the use of bots in forex trading: adoption, factors that influence adoption and most preferred bot. However, we have also taken into consideration Social media platforms like Facebook. Some studies have shown that Forex traders used to share information about forex trading on social media platforms like Facebook. Some other studies have also shown that there are some negative effects of fraudulent activities on these platforms. In light of these facts the role of social media platforms in engaging and educating traders about bots was also studied in this study.

6. Hypotheses

H1: Financial background is strongly significant for the user adoption of software programs

H2: Educational background is strongly significant to the user adoption of software programs

H3: Age-Education level is highly significant to the user adoption of software programs

H4: Gender is specifically important to the user adoption of software applications (No. of Male/Female)

7. Data Collection

1. The data for this study was collected using a questionnaire. The questionnaire consists of 7 sections that are designed to collect the essential data on forex traders in Pune.

2. A total of 300 questionnaires were used in this study.

3. The questionnaire was designed and coded in E-prime v1.1 software and then the content validity was done by three experts from Pune city.

8. Results

8.1. Demographic profile:

a. Age- Distribution:

The mean age of the traders who participated in this study was 35.2 years

69% of the traders were found to be between 28 and 45 years of age, while 31% of the traders were found to be between 46 and 60 years old.

b. Gender- Percentage distribution:

The percentage distribution of gender was found to be 48% males, 52% females. This does not indicate that more males trade than females. The number of males is higher because it is a sample size survey and more males took part in the study than females do not indicate that it means more women are not trading cryptocurrency, rather it shows that women are less engaged with cryptocurrency market than men .

c . Education level-Frequency distribution:

The mean education level of traders was found to be 12.6 years

Education level is an important factor to decide the adoption of technology in any market and hence it is an important factor to consider while analyzing bots usage in any market.

d. Annual Income-Frequency distribution:

The annual income of the traders was found to be in the range of minimum Rs 300000 and maximum Rs 15,00000

8.2. Factors that have an impact on bot adoption

a. Education:

The more educated the trader the more inclined to use robots. It is an important factor to consider while studying the adoption of bots in any market. The traders with high education level were found to be preferring better robots and hence they were found adopting those bots which are relatively expensive. Hence this fact has an impact on the adoption of robots in any market.

b. Gender:

The female gender has an impact on bot usage in any market, as most of the trading happens in Forex markets where females are more inclined to do Forex trading than males. This factor has an impact on the adoption of bots in any market.

c . Age:

The older the trader is the more inclined he/she is to use bots. This is because as we get old our speed of trades reduces and hence we become slower forex traders and hence robot usage might be required in such cases.

d. Experience:

The more experienced the trader is the more inclined he/she will be to use bot for trading, which shows that experience has an impact on bot usage in any market.

e . Annual income:

The higher the annual income the more likely a trader will be to use bots for trading. This shows that income has an impact on bot usage in any market.

f. Trust in technology:

It is understood that a trader with low trust in the technology is more likely to use bots. This shows that trust in technology has an impact on bot usage in any market.

g . Social media platforms:

The level of knowledge regarding social media platforms such as Facebook and Twitter have an impact on bot usage. This shows that social media platforms are important to consider while studying the adoption of bots in any market.

h . Liquidity:

High liquidity for forex trading has an impact on forex traders' decision to use robots for trading. This shows that liquidity has an impact on bot usage in any market.

i. Trust:

The level of trust in Forex trading, with reference to the current market scenario has an impact on bot usage. This shows that trust has an impact on bot usage in any market.

j. Trends:

The trend of long term trading and short term trading have an impact on bot usage. This shows that trend has an impact on bot usage in any market.

3. Methods used by traders to purchase Bots:

a. Credit card

The majority of the traders in Pune city use their credit cards to purchase Bots . This shows that we can also use credit cards to purchase bots.

b. Bank account details:

The majority of the traders in Pune city use their bank accounts to purchase bots due to high liquidity available on bots such as Forex market, where they can sell the same immediately. This shows that bank account details are important while studying bot usage and hence it should be considered when analyzing this market.

c. Payment methods

Different payment methods were used by traders to purchase bots, such as physical payment, bank transfer, and digital currencies such as bitcoin. This shows that different methods were used by traders to purchase bots in any market .

d. Location of the trader

Traders from Pune city are found using a combination of credit card and traditional forex platforms to purchase their bot . This shows that we can use both credit cards and traditional forex platforms to buy bots .

e . Currency used: Traders in Pune city are found using different currency types for purchasing their bot, such as the Indian Rupee, British Pound and US Dollar.

8.3. The role of social media platforms

a. Facebook: Fb has been found to be one of the most used social media platform among the traders in Pune. It was found that more than 55% of the trader are using facebook for sharing information about their trading, while 13% of them have their own facebook marketing page and hence it shows that fb is an important tool for sharing information about stocks and other financial instruments ..The activity level as we found is high among traders who are engaged in cryptocurrencies ,with almost all traders having accounts on fb, which means that fb does play a big role in educating potential users about bots, who can then adopt it for their trading activities.

b. Twitter : Tweeting has been found to be one of the most used social media platform among the traders in Pune. It was found that more than 50% of the traders are using twitter for sharing information about their trading, while 8% of them have their own twitter marketing page and hence it shows that tweeting is an important tool for sharing information about stocks and other financial instruments.

c. News websites: We have found that traders are also using news websites to learn about bots, such as the daily forex, daily currency and daily tax. This shows that news websites are also important tools for sharing information about cryptocurrencies and hence should be considered along with social media platforms when studying bots usage in any market.

9. Conclusions

1. Bot usage in any market is not influenced by the exchange where traders trade, as the traders use different payment methods. This shows that bots are just like any other currency and hence exchange is not a significant factor for bot usage in any market. H1 was rejected as the average age of traders were found to be more than 35.2 years. H2 was rejected as the average education level of traders were found to be more than 12.6 years. H3 was accepted as the mean age of traders and mean education were found to be significant at $P \text{ value} < 0.05$. H4 was accepted as the mean number of male traders and mean number of female trader was found to be significant at $p\text{-value} < 0.05$
2. Bots are becoming a popular tool among experienced traders, but there is a lack of bot trading activity among beginners and this can be due to lack of knowledge about their uses. This can be used to develop bots for beginners who are interested in trading , and also educating them about its usage .
3. Bot usage in any market is influenced by the social media platforms that traders use, because they share information about their trades . The role of social media platforms is significant while studying bots usage in any market . It was found that news websites play an important role as well .
- 4 . In the future when bot usage is escalated, it will have a huge impact on any financial market , since it will increase the liquidity and hence volatility at all times.
5. There was a general picture about this, which formed at a later stage of time and hence no influence on bot usage in any market.
6. The traders who participated in this study were found to be technically unskilled in cryptocurrency and hence there is no indication of their knowledge about technology, which could be an influencing factor on bot usage in any market .
7. Experience has a less impact on bot usage in any market .

10. Suggestions

1. We need to create bots which are specially designed for beginners. We can call these the "beginners bot" to guide and inform them about bot usage.
8. We can also make an effort to educate experienced people about the benefits of using bots, since they are found not using them in this study .

11. Limitations of the Study

- a. The sample size is low and hence there is a possibility of the study not being generalizable.
- b. The geographical area of the study was limited to Pune city in India, hence there might be variations in bot usage in cases of other cities.

c .There are many bots available for all types of financial instruments, which might confuse people who are unaware about their uses . We can educate them about this by providing education materials on bots usage.

d. The usage of bots in any market might be influenced by the industry it belongs to, as well as the profession of the trader .We can further analyze to find out factors like industry, profession and location .

e. We need to include another factor which is important for understanding bot usage in any market , which is the experience level of traders and there methods used for buying bots . We can use different sources of information like professional blogs and forums to compare traders' levels of experience in their trading activities. If discovered that experienced traders are more active than beginners, then we can use information on trade volume at these platforms to understand how much they are using bots, while beginners are less active.

12. Further research

We need to study the same thing in other cities of India, as Pune has just been studied, due to lack of time. Future research may include studying different exchange markets, but that will require more resources and time.

Final Words

The technology behind the cryptocurrency to ensure the security of transactions is getting better, but we have to remember that there is a human tech support behind it, operating and maintaining the IT system. The technology will work only as long as it is in the hands of humans. We are not robots, but we can operate like one, only because of the technology we use. Robots make work easier, they help us do our jobs better and they allow us to get more things done, which is why it has got a mention in this text. It all started with the industrial revolution and then came to a halt after World War II due to lack of resources. But now, the world is using robots worldwide for various reasons- for their production and services.

Today, robots are vastly used in all industries for manufacturing goods or doing any job that needs high precision and less human involvement in it . Financial literacy has a new dimension and that is the usage of robots. We have seen it in binary options, forex and cryptocurrency markets. The rise of robots in these markets has given rise to a new type of human being: the robot trader.

The growth of bots usage has been very slow, as there is a lack of proper information about their usefulness and their usage . People who trade normally use bots for facilitating their trading activities, as they are less time consuming and are more convenient than conventional methods. But the more familiar we become with technology, the more we get comfortable with it . The field of financial literacy will grow even in the binary options market because people now know about it and therefore there is an impact on bot usage in any market.

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