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Factors Affecting the Adoption of Robo-Advisory in Investment Decisions: An Indian Study

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Abstract

Technology has affected nearly every sector of our economy, and when it comes to finance, it has brought a major change in the investment world, through robo-advisory. Robo Advisors are automated platforms that offer financial services like investment planning, portfolio management and retirement planning, with the use of algorithms and data driven models. Even with the increase in the use of other digital financial services like internet banking, digital payments, the awareness about robo-advisory remains low, especially in emerging countries like India. This study aims to study the factors that hinder the adoption of robo-advisory and to find out even with consistent technology and accessibility what are other factors like trust, financial literacy or psychological factors that might affect the adoption rate. The study adopts a descriptive and analytical approach. It collected primary data through a questionnaire directed towards young investors. The data collected was analyzed using correlation matrix and Structural Equation Modeling (SEM), along with descriptive statistics, to identify the factors affecting adoption and the possible relation between different factors, like trust, financial literacy and fear. The findings indicated trust to be a significant factor behind adoption, with financial literacy having a positive correlation with adoption but not came out to be the sole predictor of adoption, and fear to have a negative and insignificant relation with adoption. The results suggesting that to increase adoption it's first step is to build trust, using financial literacy to increase it's understanding and promoting transparency and security in it's working to increase adoption.

Keywords:

Fintech; Artificial Intelligence; Financial Advice; Robo-Advisors; Trust; Technology Acceptance

I. INTRODUCTION

Technology has affected nearly every sector of our economy, and when it comes to finance, it has brought a major change in the investment world. Earlier for investment decisions people used to mainly rely on human understanding about the market, their experience, and on professional expertise. Now the era of digitalization and technology has brought with it a major change of Robo Advisory. Robo Advisors are automated platforms that use algorithms and data driven models to provide financial advice, portfolio management and investment recommendations. They are robo financial advisors that collect data to understand the client's financial position typically through a questionnaire and based on the client's responses,

uses algorithm to create a personalized investment strategy. Some of the advantages of robo advisory is that it comes with low fees, works fast and has minimal human involvement.

The first financial robo advisor was launched by Jon Stein in 2008, in United States named Betterment, which made the first step towards the adoption of artificial intelligence in the investment world. This was the first time when robo advisors delivered investment services to individuals without any middlemen. After that a major growth of robo advisors was observed. By the end of 2015, several robo advisors from around the world were managing $60 billion in assets of clients.

The rise of Robo Advisory creates a shift from human advisors to robo advisors which raises a series of questions of trust, awareness, compatibility, psychological and risk factors. While Robo Advisory was becoming popular in developed countries like United Kingdom, Europe and US , the growth was low in developing countries.

Inspired by global trends, robo advisory in India was started through FundsIndia, in 2009. They started provided online investment and wealth management services making in an earlier pioneer in India's digital advisory services. Later on there was growth of several fintech platforms such as Groww, Zerodha, and Kuvera integrating automated investment tools. However despite the growth in these robo advisory platforms, the adoption of robo advisory in India remained low as compared to global markets,(Fatima and Chakraborty,2024) It was observed that factors such as trust, anxiety, tech familiarity, age, financial knowledge played a major role in the adoption of robo advisory in developing countries like, India, where people still trusted humans with their money. While robo advisory was more data driven and technology dependent, it lacks in comprehending the cultural and psychological factors that might hinder it's adoption rate. This creates space to study about the investor attitudes, behavioural patterns, trust levels, cultural mindset , financial knowledge, all that goes behind the adoption of robo advisory. The old-fashioned investing and financial planning that had been largely carried out through face-to-face meetings with human advisors are now being replaced with new, technology-driven solutions. Robo-advisory has become the agent of change in the process next to technology, which positioned it great contemporary relevance in finance.

One of the essential reasons for the ever growing importance of robo advisory is the continuous improvement of artificial intelligence, machine learning, and data analytics. These techniques make it possible that the automated platform can shift vast amounts of financial data, recognize changing market trends within a few moments and provide customized investment suggestions. Therefore, clients can execute their financial decisions timely, informed and efficient without location or time constraint, nor the high cost involved. Robo advisors meet modern financial needs excellently as an individual can get the service at a finger tip even in today's world of tight schedules and immediate access to services.

Another factor most affecting the contemporary relevance of robo-advisory is the investor behaviour change, notably among the younger generations. The young investors are all for mobile apps, digital wallets and online financial tools. Self-guided, transparent and technologically based solutions are among the things they prefer. Robo advisors make the investment path easy, affordable and friendly for such investors despite their due lack of financial knowledge. Financial inclusion promoted in this way by removing the barrier for small investors who could not afford the high advisory fees is a win-win situation for all stakeholders.

Moreover, robo advisory platforms have reached high levels of adoption and trust in the developed markets while they are at the initial stages of their journey in India. Automated advisory systems are widely implemented in developed financial markets for portfolio management, retirement planning, and wealth management services. However, the adoption level of such services is still low in emerging markets like India. Despite the boom in digital infrastructure, growth of fintech industry in India and the popularity of digital payment, the awareness and financial literacy of such services are at a very low level,(Saxena, Jain, & Mandal, 2022).The study of robo advisory very relevant in India since it can not only shed light on a dire need for financial education, transparency, as well as policy support to spread the adoption of digital financial tools but can also lead to better adoption and usage of such tools. The relevance of robo advisory today is also due to the effect it has on market efficiency and investor behaviour which in turn are the factors of the system. By sticking to set objectives and obeying a structure, an automatic system eliminates the human intervention emotional bias that usually occurs in decision-making. This leads to investment behavior stabilization at the times of market fluctuations and the promotion of long term finance planning. Thus, they contribute to individual financial wellness, plus, to the financial market's general stability and growth.

In the world of digital transformation, financial democratization and fintech innovation, the time for robo advisory is the near future. Its realization by researchers, policymakers and financial service providers is the first step towards the future when they see there the opportunities, the challenges as well as the strategies that can lead to the trust of such technology based services and widen access to them. Hence, the study of robo advisory becomes an important prerequisite to understanding the technological evolution's impact on the relationship between the financial decision making and the technology world today.

Thus, given the rapid growth of digitalization and artificial intelligence in financial services, this study becomes essential. While robo advisory services are widely adopted in developed countries, their acceptance in developing markets like India is still emerging and influenced by cultural, emotional, and technological factors.

This study aims to study the key factors behind the adoption of robo advisory, targeted towards young investors, comparing their trust between robo advisors and human advisors and understanding the psychological drivers behind adoption. By examining investor attitudes, level of financial literacy, and preferences, this research aims to bridge the existing knowledge gap between global and indian adoption of robo advisors, enhance understanding of investor psychology and provide insights for a smoother adoption of robo advisory in India.

II. LITERATURE REVIEW

The field of finance has gone through significant changes in the era of digitalization and technology. One such major change is Robo Advisory. Robo Advisors are automated platforms that use algorithms and data driven models to provide financial advice, portfolio management and investment recommendations. However there are many underlying factors that affect the adoption of Robo Advisory. The factors like the level of financial literacy, knowledge, age, tech familiarity and certain cultural and psychological factors, all influences the adoption of Robo Advisory, specially in developing countries like India.

2.1 Financial Knowledge

Fan and Chatterjee (2020), examined the internal and external characteristics along with attitudinal factors that affect investors decisions and found that individuals with higher financial knowledge are more likely to use robo advisory, than individuals with relatively low financial knowledge.

Yi, Rom, Hassan, Samsurijan, and Ebekozien (2023) found three major factors in determining the investor willingness to adopt robo advisory. They were financial knowledge, trust and perceived usability. They further explained that all three factors are achievable. Financial knowledge can be enhanced by being up to date with market information.

Hidayat-ur-Rehman, Alam, Alsolamy, Alharbi, AlAnazi, and Bhuiyan (2025), found in their study that prior existing knowledge is the key driver in the acceptance of technology and investors with substantial financial knowledge are more likely to recognize the benefits and reliability of robo advisors. They further highlighted that most of the current robo advisory platforms assumes a basic financial literacy of investors, however if they made robo advisors more friendly or provided some support to first time users and to those with low financial knowledge, then the adoption of robo advisory could increase significantly.

2.2 Trust

According to the CFA Institute Global Investor Trust Survey (2020), which covered 15 markets including Australia, Brazil, Canada, Mainland China, France, Germany, India, Japan, Mexico, Singapore, South Africa, United Arab Emirates, United Kingdom, United States, and Hong Kong SAR, only 22% of retail investors trusted robo advisors. Now, trust in robo advisors has increased to 27% among retail investors overall. The survey highlights the importance of trust while investing. When retail investors are asked about whether they are more likely to trust a human adviser or a robo advisor for recommendations specifically, 73% still prefer human advice.

Fatima, & Madhumita(2024), which in their study examined the intention of investors to use the AI-based robo advisor to plan their investments, also highlighted that along with investment knowledge, age, gender, some of the major factors affecting robo advisory adoption were to be trust and anxiety. They highlighted that in younger age group, the factors

affecting the adoption rate were trust, anxiety and preference to human advisors, whereas in older age group (above 45 years), the primary factor was anxiety.

Goswami and Verma (2025) explained how important the trust factor actually is and what are the underlying factors that determine the investor trust level. They classified the factors into three categories, first, technology-related factors (how the robo advisor looks and works), second, Task-related factors (how well it performs in investment related tasks), third, investor-related factors (investor's own characteristics), and found that Robo anthropomorphism (how human like the robo advisor feels) is the strongest factor in building initial trust. This is followed by how perfectly the robo advisors fulfill the investors needs and how the initial risks, like fear of losses, errors, misuse reduces trust level. They also found that Gen Z investors become more willing to use robo advisory if they have trust in technology, the particular firm and they find it easy to use, therefore the service providers should focus on establishing transparency, user friendly, easy to use designs.

Eichler and Schwab (2024), in their article highlights that including behavorial finance in robo advisory could be helpful in improving it's efficiency, also highlights that it's important to build transparency and ethical practices while developing and regulating robo advisory.

Cao, Zwaan, & Wong, V (2025), also found that trust and transparency in algorithms influences investors trust in robo advisory. They also found that word of mouth, social reputation is also important and small companies can face issues in creating such reputation in initial stages. They further suggested that government should step up and collaborate with robo advisors platforms to offer free financial seminars and take initiates in connecting traditional banking with new robo advisory fintech industry.

Gupta, S. (2025) found that trust is the prime factor of adoption, and coupled with hybrid models which include both human and robo financial advisors, clear transparency in algorithms behind robo advisory can enhance the adoption rates significantly.

Cheng, Guo, Chen, Li, Zhang and Gao (2019), found six factors influencing trust, that were reputation, information quality, service quality, service commitment, government regulation and attitude toward AI. Working on these factors can enhance the trust on the company providing robo advisory and also increase the trust in the technology behind robo advisory.

2.3 Age

An industry research, Deloitte insights (2023), found that 75% of millennial respondents were open to using robo advisors to manage their investments. On the other hand, only 43% of baby boomers (people born between 1946 and 1964) surveyed said they were interested in using robo advisors. The lack in the percentage number of baby bloomers suggest that they might lack trust in algorithms used in robo advisors. The research also highlights that robo advisors will be truly prevalent if they manage to serve all age groups. A hybrid approach, where both human and robo advisors are involved will make a significant change in how older people perceive robo advisory.

Depending upon the age, there are different factors that influence the adoption of robo advisory. This is explained by Figà-Talamanca G, Tanzi PM, D'Urzo E (2022) in their study. They highlight that factor affecting the rate of adoption in older generation is it's usefulness, how much value they can drive from robo advisory, how useful they actually are to them. Whereas in Gez Z, the main factor of adoption is ease of usability. If they find robo advisors easy to use, they are more likely to adopt it.

2.4 Familiarity with technology

Belanche, Casaló Ariño, and Flavián (2019) found that the rate of adoption of robo advisory differs depending upon the their familiarity with technology and robots. For those who are already familiar and know how to use technology, the factors influencing the adoption rates are usefulness, how much value they can derive and their own positive attitude towards using robo advisors. Whereas for those who are not familiar with technology the adoption is driven more by social pressure, media and other subjective norms.

2.5 Psychological factors

Cha, Y., & Xiao, F. (2025), pointed out in their study that people tend to judge the working of all robo advisors based on the working of one, because robo advisors are seen similar, in contrast to individual human advisors, who appear to be different. Therefore if one robo advisor performs badly investors assume that others are likely to perform badly too.

2.6 Global vs Indian adoption

When we talk about global vs Indian adoption a huge disparity is observed, the reason for which is not only limited to the technology advancement, but to various other factors like cultural mindset, trust and psychological factors that varies from country to country.

As far as global adoption is concerned, CFA Institute (2016) reported that of the growing number of fintech innovations, robo advisers will have the greatest impact on the financial services industry in the short run (one year) and medium term (five years). According to a member survey by CFA Institute, the global association of investment professionals, an overwhelming majority of respondents, 70 percent, consider that mass affluent investors will be positively affected by automated financial advice tools in the form of reduced costs, improved access to advice, and improved product choices.

According to the World Bank Group (2019), the largest robo advisors in terms of asset under management are Vanguard (US$112 billion), followed by Intelligent Portfolios (US$33 billion) and Betterment (US$14 billion). Robo-advisors are starting to grow in other parts of the world, too. In Europe, there are currently over 70 robo advisors, with 5 of them managing more than €100 million. Emerging economies have also witnessed the emergence of their own robo advisors. For example, the number of robo advisors is growing fast in Asia, driven by an emerging middle class and high technological connectivity. Robo advisors are already present in China, Hong Kong SAR, China, Japan, Singapore; Thailand and Vietnam, among other economies. Other emerging regions also have robo advisors, but their presence is limited so far.

Now when it comes to India only 29.2% of managed assets are managed by robo advisors. Vasylchenko, A. & Bonelli, M. (2023, 17 August). Globally, domestic robo advisors manage approximately 94% of the market, highlighting a significant disparity between the Indian and global markets.

Mahesh, P. (2015, September 30), in The Economic Times newspaper tells about the adoption of robo advisory in ICICI securities. ICICI Securities is registered with SEBI under the Investment Advisors Regulations, 2013. It launched “Track & Act”, a Robo advisory platform that will offer financial planning and tracking for investors. They believe that this online service will appeal to a large community of investors who likes to use online services for everything, be it online shopping or banking. Customers will get a customized plan based on the size of their investments, goal and horizon. For every goal, ICICI Securities will choose the best path from over 2.5 million simulations that are generated using algorithms, for each of customer’s annual investments for these goals.

Vishwanathan, V. (2017, September 29), in LiveMint newspaper compares indian vs global adoption of robo advisors and quotes reviews of various financial experts. Sunil Sharma, chief investment officer, Sanctum Wealth Management says that when we look globally we can see Betterment, Nestegg Solutions Inc., Wealthfront Inc. and Hedgeable, Inc. which are offering leading robo advisory services but when it comes to India no such significant change is noticed, the work is still in progress. Vishwanathan continues saying that financial institutions are becoming aware of the benefits of robo advisory, for example the co-founder of FundsIndia.com, Srikant Meenakshi that offers robo advisory service says that they are in partnership with Axis Securities and there’s a growing acceptance from the industry.

According to him, 15% of his company’s overall portfolio comprises robo advisory services. Similarly, 5nance has an agreement with HDFC Mutual Fund for its robo advisory.

Other Indian robo advisory startups like ArthaYantra, that uses a patented methodology called the Personal Financial Lifecycle Management on its online platform, Arthos. Since its launch in 2008, the site claims to have helped 120,000 customers across more 650 cities and 30 countries. Other companies like ICICI Securities, are building robo advisory products actively , their senior vice-president of investment advisory and customer service, Abhishake Mathur, says that

people are getting used to online services and that they launched their robo advisory product in 2016 and have around 3000-4000 current users.

In addition to investor related factors, prior studies have also highlighted firm level drivers that have supported the expansion of robo advisory services.

Wexler, Oberlander (2021), in their research explained that after 2008 financial crisis, firms wanted to rebuild their image and regain trust, so they started using technology to be reliable. Robo Advisory helped in reaching to more customers, including small investors who could not afford human financial advisors. In all robo advisors and the use of AI was seen as modern and firms started adopting it to be innovative, gain trust and remain relevant.

Tiberius, Gojowy, and Dabić (2022), in their study tried to project how robo advisory will develop in next 10 years, for this purpose experts from different parts of robo advisory industry were asked for their opinions. Based on the data collected, the number of robo advisors used will be increased and their will be used by big banks and financial institutions as part of their brand.

Arenas Parra et al. (2024) examined the emerging field of robo advisory, and found that automated robo investment services has brought a change in the way banks and financial institutions function. Robo advisory has made in possible to serve a large number of people, not just wealthy clients. This was possible because robo advisory services are automated and standardized and automation reduces cost, which allows firms to serve more clients at the same time.

Prior research has examined the impact of robo advisory adoption on investor behavior and portfolio outcomes. D'Acunto, Prabhala, and Rossi (2019), study found that adapters of robo advisory are not much different from non adapters in terms of demographics. The adoption of robo advisory services led to significant diversification benefits, specially to those who were under diversified and also an increase in engagement level. The study also stated that the adaption of robo advisory lead to decline in behavioral biases, including the disposition, trend chasing, and rank effect.

Also when it comes to managing personal finance, technology driven personalized investment advice can prove to be an efficient tool. Sironi, P. (2016), found that the traditional common financial advice is

not adequate in fulfilling complex investor needs. Robo Advisors when combined with goal based investing frameworks and gamification techniques, can significantly improve investor engagement, decision-making and long-term financial discipline. By incorporating behavioral finance, making use of digital platforms, using data analytics, can better help align with investors goals and objectives while also reducing costs and biases.

Although rapid growth of technology, digitalization and the realized benefits of online investing, offers favourable conditions for the growth of robo advisors, in response to the investor hesitation of adopting fully automated investment services, researchers have examined the human versus robo advisory models, highlighting hybrid advisory systems as a potential solution to address the shortcomings to robo advisory.

Brenner and Meyll (2020) in their research concluded that robo advisors can act as partial substitutes to human financial advisors, specially when it comes to providing standardized investment advice and reducing behavioral biases, but they also points out that while robo advisors can be efficient in providing impartial investment advice, they lack in understanding complex financial situations, providing emotional support and providing highly personalized advice. Hence they argue that robo advisors are better suited as compliments to human advisors rather then their replacements and supports a hybrid advisory model.

Agarwal, P, Kapoor, S., Agarwal, S., & Seth (2020) also in their research of Future of robo advisors in investment and wealth management points out that established financial institutions have started incorporating robo advisory in their services often in an attempt to increase their customer base. In the era of growing technology, automation and digitalization will play a significant role in the future, but will not replace traditional human financial advisors, as they continue to stay relevant and important while handling complex and high end financial advisory needs. Several studies have examined robo advisors in comparison with traditional human advisory models, particularly in the context of Millennial investors. Chew, J. (2015), pointed out in their research that robo advisors initially emerged as a response to millennials dissatisfaction towards human advisors which were inaccessible, vague and costly. Robo Advisors by offering easy accessibility, low cost,

user friendly investment services appealed to these young investors and acted as strong alternatives to them. However, the study also notes that despite the advantages of automation, factors such as trust and personalized guidance continued to play a critical role in investment decision making. Thus the study, suggests that the future of robo advisory services is likely to evolve toward hybrid models that combine technological efficiency with human support, emphasizing credibility, transparency and adaptability to investor preferences.

Researchers Tiberius, V., Gojowy, R., & Dabić, M. (2022), used the Delphi method to study the future development of robo advisors. They stated that robo advisory services will continue to expand that will

add competitive pressure on traditional human advisory system. Low fees and ease of use are expected to enable widespread adoption across diverse customer segments, leading to market share losses for conventional advisory firms. While Exchange Traded Funds (ETFs) are projected to remain the dominant investment vehicle, automation is expected to play an increasingly important role in robo advisory services, with varying levels of human involvement depending on the complexity of financial advice.

While existing literature highlights their potential to reduce the cost of financial advice while improving efficiency, quality, and transparency. However, scholars also emphasize the regulatory challenges posed by robo advisors. Baker and Dellaert (2017), in their research states that although robo advisors have the capability to reduce costs, enhance the quality and transparency of investment advice, they create new problems for regulators, since the regulators are used to accessing human advisors. Another risk highlighted in their study is the scale risk. While mistakes by human advisors can affect a limited number of clients, errors in algorithms or working of robo advisors can affect significantly more people, since robo advisors can handle a large number of clients at once. Consequently, their study stresses the need for enhanced regulatory capacities to effectively assess the design, functioning, and impact of automated financial advice.

Torno, Metzler and Torno (2021) also emphasized the need to of transparency when in comes to robo advisors. They systematically reviewed the robo advisory literature and categorized existing studies around three core dimensions: the definition of robo advisory, how people adopt it and how it is designed and delivered. While their findings highlight the robo advisors efficiency, scalability and cost reduction, they state that study around robo advisors are fragmented and scattered around technology, human behavior, laws and regulations, areas which are not well connected with each other. The authors stressed on the need for clearer conceptualization, real data collection on how users adopt robo advisory and deeper research on the algorithms used and their understandability and transparency.

The reviewed literature highlights that robo advisory adoption is influenced by a combination of technological, psychological, demographic and institutional factors. While most of the studies focuses on global adoption and on developed economies of US, Europe, this study aims to analyze the factors that affect the adoption of robo advisory in India and how it differs from the developed markets. Prior studies consistently emphasize the role of trust, perceived risk, transparency, and ease of use in shaping investor attitudes toward robo advisors. Prior research has also shown that demographic variables such as age, financial literacy, and prior investment experience significantly affect adoption intentions. Additionally, global studies indicate growing acceptance of hybrid advisory models that integrate automated systems with human support to address trust and personalization concerns

III. METHODOLOGY

3.1 STATEMENT OF PROBLEM

3.1.1 Background

The advancement of technology throughout the years have evolved the way we operate, from online digital payment services to net banking, we have come a long way, and one such major change is the advancement of robo advisory in the field of finance and investments. Robo Advisors are automated platforms, that collect data from clients usually in a form of online questionnaire and prepares a customized investment plan based on the client's risk level and form of income and assets. Robo Advisory comes with a range of advantages like low cost, easy accessibility, minimal human involvement, which makes them attractive to investors and also to people with low financial knowledge to use and adapt them.

Globally, the popularity of robo advisory is increasing rapidly. According to Fortune Business Insights (2024), global robo advisory market size was valued at USD 8.39 billion in 2024. The global robo advisory market is expected to significantly grow, from USD 10.86 billion in 2025 to USD 69.32 billion by 2032, exhibiting a CAGR of 30.3% during the forecast period. North America dominated the global market with a share of 43.74% in 2024. It also states that the reason behind the rapid advancement of robo advisory is the inclination towards technology, cost effectiveness, ease of use and an increasing demand for automated investment advisors.

When it comes to India, it has grown exponentially in digital payment services, online banking, online trading and other fintech platforms but when it comes to robo advisory it's still in it's nascent stage of development. Though India launched it's first robo advisor in 2009, growth after that has not been that efficient. Indian investment market has a strong preference for human advisors over robo advisors, today also when it comes to handling their money they prefer the advice of a experienced professional. There are also many cultural and psychological factors in India, which comes in the way of adoption of robo advisory. For example factors such as trust issues, lack of awareness, digital financial literacy, age gap, data privacy concerns are common barriers to adoption. Addionally, investment decisions are also influenced by emotional and psychological factors, personal beliefs, preferences and biases, that effect the level of comfort and openness one experiences while using robo advisory. Therefore, in the era of technology and digitalization, it becomes important to study and analysize the factors behind the adoption of robo advisory and the hidden factors that slows the growth of robo advisors in developing countries like India.

3.1.2 Research Problem

Despite the major growth in fintech technology around the world and in India, there adoption level of robo advisors is highly uneven. Developed countries with their sophisticated technology systems has observed major a growth in robo advisory platforms but in developing economies like India, it's still behind, irrespective of the fact that robo advisory comes with several benefits like low cost, ease of use, convenience, speedy investment advice all of which can help an investor grow. This is mainly because of the fact that adoption of robo advisory is not soley dependent on it's advance technology and functionality but also in the way investors perceive and respond to this system. This is the central problem that arises because of the gap between technological advancements and human retention level, which means how fast humans are able to catch on and understand the new tech advancements and comprehend that in their daily life.

Earlier investors were in a habit of using human advisors, face to face consulting, problem sharing, but now with robo advisory it creates a shift from human to robo advisors. This shift raises another problem of trust. Initially it can be difficult for individuals to trust the algorithms behind robo advisors, because investment involve financial risk, and people might be reluctant to invest their hard earned money soley in the hands of a robo advisor. This links us to another problem of financial literacy and familiarity with technology. Individuals with prior financial knowledge or prior knowledge about digital services and the algorithms used behind these system, may adopt these services faster than those you don't possess any prior knowledge or are not familiar with new age technology. Existing review of literature, indicates that having financial knowledge significantly affects the adoption level of robo advisory among individuals and also the tech savvy young generation, showed higher level of adoption, due to their existing tech knowledge and familiarity. Another critical problem is emotional response and investor behaviour, especially at times of market fluctuations. Some investors may prefer human advisors due to their real life lived experiences or some may prefer robo advisors to avoid any biased made decisions or personal preference of human advisors at the time of uncertainity. Understanding the human response as the key factor in the adoption of robo advisory becomes relevant here, as it's still an unexplored area in context of developing countries like India. Additionally, attitudes towards automation also becomes a relevant factor when it comes to adoption of robo advisory services. In developing countries where people tend to have preconceived notions about automation or digital services, specially when it involves managing their money, becomes an interesting problem to study and analyse, the reasons behind it to truly understand the factors behind adoption.

Investment decisions are complex, they involve money, uncertainty and potential risk. When using robo-advisory services, it requires the investor to trust algorithmic recommendations regarding portfolio management, asset diversification and financial planning. It is human nature to question these new

chances at first, when the investor does not have awareness of new digital financial service, and unlike digital payments, digital financial advisory platforms are more complex and they demand certain level of foundational financial knowledge for a smooth understanding, because without a certain level of understanding, investors can't fully rely on these services even though they might want to.

Also, if an investor posses basic knowledge but has certain fear, when it comes to using technology, it might hinder it's adoption. The fear can be of security, data leaking, unreliable recommendations, not being able to trust artificial intelligence services, when it comes to unreliable times, times of uncertainty. Investors might question upto what extend they can actually leave everything on AI, and who will be responsible if something goes wrong.

Therefore, it not only becomes important to study the factors individually, but also collectively, because the factors are linked with one another. One is more likely to trust in robo-advisory if it understands it's working and to understand it working it must possess some financial knowledge.

And when all these requirements are meant, they must not fear to adapt something new and overcome their fear, of using automated financial services. Then only it gives a chance to increase adoption rate.

There are many studies focusing on the adoption of robo advisory in developed countries, there are limited when it comes to the comparison between the adoption level of developed countries and developing countries like India. This study will shed light on the adoption level of robo advisory covering the factors that majority creates difference in the adoption level between the developed and developing markets, like financial literacy, trust, technology, psychological and cultural attitudes. Thus this study aims to answer the overarching problem that is why even with the same level of technology the level of adoption differs and what are the possible factors behind it.

3.2 SCOPE OF THE STUDY

The present research, focuses on the understanding of the adoption and consequences of robo advisors concerning investment decisions among young investors. These generational cohorts are considered very important to study because they are digitally native, technologically literate, and highly information oriented, and thus more receptive to fintech innovations such as robo advisory services. Robo advisors, an AI driven, algorithm based investment advisory platform, have been offering investors automated portfolio management, personalized financial recommendations, and cost-effective solutions-easy access to financial services previously limited to wealthy individuals or clients of traditional financial advisors. Instead of focusing on mere adoption statistics, this study examined how psychological, behavioral, cultural, technological, and demographic factors interact to influence the adoption decisions in India in comparison with developed countries in order to understand global patterns of adoption and cross cultural variations.

This paper aims at offering a holistic view of adoption, barriers, enablers, and behavioral intentions that could potentially inform fintech development, policy-making, and investment strategies for young investors.

3.2.1 Geographical Scope

The major focus is on India, a country seeing a rapid alteration in its financial ecosystem with increasing mobile and internet penetration, increasing fintech services, and increasing digital literacy among the young population. India provides a unique research environment as it combines the dynamics of an emerging market with a technologically savvy young population, hence providing a rich context to investigate adoption behavior. It will also help to analyze what are the other factors that affect adoption when things like technology, accessibility and financial needs are met.

3.2.2 Population Scope

The research will focus on young investors, more from the age of 18 to 35 years old. This gives a diverse population of targeted investors, firstly because this population consists to investors who are more familiar with technology and have been using technology regularly, specially people aged from 18 to 25 years old. This provides a population which is not new to digital products, so it's easier for them to understand and adopt robo-advisory.

This specific range of population also exposes us to middle aged people who are entering into early stages of wealth creation, and therefore may look for platforms where they can grow their money effectively. This makes the targeted population apt as it exposes us to the view of potential investors who are eager to grow their money , and may look for simple and cost efficient ways and since, robo-advisory makes investment, easy and simple with less human involvement and lower fees, these automated financial advisory platforms might appeal to this range of population. This range of population will also help us identify which factors affect them according to their age. For example, for someone around the age of 20 years, the issue might be accessibility and for someone around the age of 30 years, the issue might be reliability and above 45 years, it can be the lack of awareness or knowledge to understand new digital products.

Therefore in a way, this population gives us a more comprehensive view in understanding the actual factors behind adoption.

3.2.3 Topical Scope

The research encompasses several themes that need consideration while understanding the adoption process of robo-advisors:

Awareness and Understanding:

The research helps to determine to what extent young investors are aware about robo-advisory systems, how they work, and what are their limitations and benefits. Awareness is a first step towards adoption because one cannot adopt what they are not aware about. The research also tries to find out whether investors are able to distinguish between traditional financial advisors and technology-based advisors using AI.

Trust and Perceived Risk:

Trust plays an essential role in adoption, particularly in financial matters that impact personal information and financial loss. This research focuses on the trust that investors have on robo-advisory platforms regarding the risks associated with errors in algorithms, as well as their fear of cybersecurity threats in respect to their financial information. Based on research in behavioral finance, the research will investigate how trust and risk are interrelated in behavioral intention and adoption.

Technological Readiness:

The analysis evaluates digital literacy, availability of mobile internet-connected devices, familiarity with fintech apps, and previous experience with AI-based services, which are imperative in understanding the relative ease of use and relative usefulness of robo advisors. All these variables are essential in understanding how technology capability functions as a mediating factor.

Adoption

Adoption considers a conceptual process that involves several stages, namely awareness, interest, trial, and usage. This was used to determine the critical barriers or drop off points, such as trust, complexity, or previous experience, that may show hesitation in adoption. This will help us form a basic understanding to address issues behind adoption.

3.3 OBJECTIVES OF THE STUDY

Based on the topic that is the factors behind adoption of robo advisory and the literature review the objectives to the study are:

1: To examine the impact of trust on the adoption of robo-advisory services.

Trust is an essential determinant of any kind of financial decisions, anyone makes in their life. One of the reasons people are skeptical in investing their money is because it comes with risk, uncertainty, and long term planning of the future.Traditional financial advisors have enjoyed the trust of the investor owing to the direct interaction, experience, understanding and ability to make personalized recommendations based on the particular situation of the investor.

On the contrary, robo advisors make use of algorithms, data analysis, and predefined models to provide investment advice. Although robo advisors provide consistency, transparency, and rule-based decision making, they can appear lacking in

emotional intelligence and personal responsibility to some investors. The trust exhibited by investors towards robo advisors and human advisors, and the factors influencing such trust, are investigated in this research.

The research focuses on important points associated with trust including perceived competence and expertise, reliability and predictability and accountability and transparency. The research would determine whether investors believe robo advisory services have enough competence to handle our investment properly and whether algorithmic outputs are perceived to be correct and impartial. The research would cover points associated with transparency because robo advisory platforms have been transparent regarding portfolio and risk information.

The study also takes into consideration the concerns dealing with the protection of data, algorithms' flaws, and the need for human oversight, which might limit the level of trust among investors towards robo advisors. Through a comparison of the different perceptions of trust, the researchers seek to gain insights on how the divergent levels of trust affect the willingness of investors to use the services of the robo advisors.

2. To study the impact of financial literacy on the adoption of robo-advisory services.

Financial literacy is very important in making investment decisions in robo advisory or other investment vehicles since robo advisories require their users to understand basic financial notions like risk/return trade-offs, asset allocation, diversification, and long term investment planning. Moreover, robo advisory investment vehicles function in a way that utilizes algorithms and computer programs for making investment decisions. Investors with little financial literacy may find this technology based investment decision method complex or untrustworthy. It is also important to understand that investment decisions made with little consideration of fundamental financial notions and practices may result in distrust and skepticism in new investment vehicles like robo advisory investment vehicles. Moreover, financially literate individuals will feel comfortable with robo advisory investment vehicles since they will analyze and understand their benefits of cost-effectiveness, transparency, and accessibility.

Therefore, the purpose of this research paper is to examine the level of investors' awareness, confidence, and acceptance of robo advisor services as moderated by their level of financial literacy. This will enable the identification of knowledge gaps in the investors' education and will offer insights to the financial industry to develop an investor-friendly robo advisor system.

3. To identify the psychological factors that influence the adoption of robo advisors

The adoption of robo advisory services cannot be based on technological efficiency alone; there are underlying psychological elements that are used to guide the perceptions of the investors.

The study aims to identify what are the factors that affect the adoption level, when basic criteria of technology, financial knowledge and financial needs are met. These factors can include components such as fear, anxiety, fear of technology, fear of future losses because of leaving

important financial matters completely in the hands od AI, preconceived notions aout AI, need of human competence when it comes to handling their money, and many more.

The study also aims on identifying how can factors such as a established familiarity of suing technology, the ease of use may affect differently to different age groups. For instance a young investor of 18 years old may perceive robo-advisory to be cost efficient and easy to use because they already know how to operate technology, but to someone above 40 years of age this same factor familiarity with technology might be a negative factor. They might not be open to use the same services because they are familiar with technology and have to make greater efforts to understand and adopt it.

Preconceived notions and perceived risk might be another psychological reasons hindering adoptions. These include issues like bad experience with technology, unreliability and lack to transparency in the working of these automated platforms and the responsibility in times of uncertainty and loss. These factors can affect anyone, irrespective of age.

Moreover, the perceived usefulness militates knowingly towards adopting it. Investors can adopt the robo-advisory system if they feel it helps enhance investment performance, facilitate decisions, and generate financial insight. The greater the

perception of usefulness and the degree of familiarity with technology, the stronger the perceived behavioral intentions towards adopting it.

By identifying and examining the above-mentioned psychological elements, the study attempts to provide an explanation for why some investors are so welcoming to the concept of robo investment assistance, whereas others tend to be apprehensive towards the technology. This will allow fintech companies to formulate a plan to make the concept less anxiety-provoking for people.

This objective compares the trends in adoption of robo advisory platforms in India with the trends in other international markets. Developed countries have experienced wider adoption due to

4. To study the combined impact of trust, financial literacy and psychological factors on the adoption of robo advisory

This objective aims to evaluate the combined effect of trust, financial literacy and psychological factos such as fear, has on adoption. While these three individually have their own perceptions, studying the combined effect of these three will help us get a more comprehensive understanding of the factors behind adoption. For example trust with investors is a factor to consider, and trust with investment can be improved through a hybrid approach that also takes advantage of human investment professionals to verify and confirm investment recommendations made available by algorithms. This hybrid approach also mitigates the psychological issues that come with the use of robo-advisors. These may include fear of technology, loss of control, and a lack of clarity concerning automated investment decisions. The investor may possess financial literacy about digital financial services, but that does not automatically imply that the investor will start trusting these automated services immediately. Similarly, if the investor exhibits high trust level but lacks the foundational knowledge , they may face difficulty in understanding the working behind robo-advisory, it's functionality , and algorithmic workings and for this reason may be hesitant to adopt these services.

Thus, these three go hand in hand when it comes to increasing the adoption of robo-advisory.

By analyzing the combined effect of all three factors the study aims to find the relative importance of relative importance of each factor and also get understanding from a broader perspective. This provides a deeper analysis into what actually goes behind adoption, and what are the actual factors that facilitate the growth and what are the factors that hinder the growth of robo-advisory.

3.4 RESEARCH QUESTIONS

RQ1: What key factors influencing investors' decision to adopt robo advisory services?

The key influencing factors for the usage of robo advisory services by investors is the trio of cost efficiency, convenience, and accessibility. All these components have a crucial role to play in influencing the behaviors of investors.

Cost Efficiency is the main contributing factor since robo advisories are known to have lower costs compared to human financial advisors. This is an attractive aspect for investment advisory services since it makes the service more affordable, especially for small and medium investors who may not always have the resources to hire the services of human financial advisors.

Convenience is another key consideration that plays an extremely significant role in adoption. With the help of the services provided by robo advisory platforms, investors are given the freedom to access investment recommendations, monitor their investments, and take investment decisions at all times

through online or mobile interface facilities. There are no time restrictions and the need for personal consultation.

Accessibility is a consideration that guarantees financial advice is accessible to a wider range of people. Robo-advisors can be considered as filling the gap for people who may have limited access to financial advice in smaller towns or areas where human advisors are limited. These may have user friendly platforms that can allow first time investors access to financial advice.

The adoption of robo advisory services cannot be based on technological efficiency alone, there are underlying psychological elements that are used to guide the perceptions of the investors. The research objective tries to address the issue of the major psychological components that can encourage or demote the use of the robo advisory services. These components are trust, risk perception, technology anxiety, perceptions of usefulness, trust in technology and familiarity with technology.

Through the examination of these variables, the research will have a complete comprehension of the forces that drive the adoption of the robo advice service by the investors. In sum, this study encompasses not only the technological side of adoption but also has included behavioral and perceptual constructs to develop a complete and holistic impression about what drives adoption and acceptance in robo advisory**.**

RQ2: Does financial literacy significantly influence investors' intention to adopt robo-advisory services?

Financial literacy is an important factor in influencing investors' receptiveness to robo advisory investment solutions. Investors who possess greater financial literacy skills will generally feel more comfortable about their knowledge of financial concepts, their ability to understand recommendations made in relation to financial portfolios, and their ability to evaluate risk and return options. This makes them more receptive to financial recommendations offered by robo advisory platforms.

On the other hand, financially illiterate investors may find robo-advisors complicated or dangerous, leading to lower adoption intention. They simply may not comprehend the automated investment recommendations provided by the robo-advisors or lack confidence in the ability to make informed decisions. Instead, they may want human advisors who can explain the concepts in simpler language.

Moreover, Financial Literacy is accompanied by other factors that influence adoption, like trust, perceived usefulness, and ease of use. Literate investors recognize the value added by cost efficiency, convenience, and ease of access provided by robo-advisors. Thus, the adoption probability is further bolstered by literate investors. Research has revealed that a high level of financial literacy is positively related to technology adoption in the financial industry and robo-advisory services.

In summary, the current research acknowledges the role of financial literacy as a critical behavioral component which shapes awareness and adoption trends for robo-advisory systems. The impact of varying literacy rates on adoption can thus serve as a guide for improving engagement with robo-advisories.

RQ3: Does hybrid advisory model results in better adoption of robo advisory?

One technology that can be an important enabler in the adoption of robo advisory technology is the hybrid advisory model that utilizes both human financial advice and algorithm-driven robo advisory technology. This approach mitigates many issues that may hinder the full adoption of digital technology for investment advice.

Trust with investors is also a factor to consider, and trust with investment can be improved through a hybrid approach that also takes advantage of human investment professionals to verify and confirm investment recommendations made available by algorithms. Many investors will feel comfortable with investment decisions made available to them electronically as long as there is a human to explain and clarify any queries they may have and resolve any issues related to volatility incurred during investment decisions.

The hybrid approach also mitigates the psychological issues that come with the use of robo-advisors. These may include fear of technology, loss of control, and a lack of clarity concerning automated investment decisions. With human intervention, the investor gets emotional comfort, explanation of complex investment issues, and education of the investor in relation to algorithm-driven decisions. This enables the investor to feel comfortable using the robo advisor platform.

Moreover, the hybrid model ensures easier integration. This is possible since investors who earlier used the advice of human professionals for investment can get used to features of the robo advisory system. This will boost the rate of integration compared to the completely automatic system since the population of India has a preference for human contact.

On the whole, the hybrid advisory model enables a better degree of confidence and satisfaction among investors while helping serve as a stepping stone for general acceptance of digital investment services. Through efficient mitigation between

human advice and technology, the model encourages a smoother transition of investors into robo advisory services rather than solely on the technology itself.

3.5 HYPOTHESIS OF THE STUDY

H0: Trust does not impact on the adoption of robo advisory services.

Trusting in the acceptance of robo advisory services by investors depends critically on investors' belief in systems that provide services automatically rather than on a one to one basis.

On a one to one basis, the investors are able to interact with the financial advisors, they are able to communicate their problems more effectively, which automatically increases their trust and it creates a better understanding between the advisor and the investor. To achieve this dynamic setting in a robo-advisory system can be tricky. There the investors are suddenly replaced with algorithms and automated recommendations. They may have a hard time adjusting to it, that's why it becomes so important to study trust as a factor, and to understand how to increase it, specially for the companies offering these services. Their concerns are further intensified by the concerns related to privacy, data security, cybersecurity risk and the absence of human judgement to validate their decisions, reduces their willingness to trust in robo-advisory.

Therefore, it's important to build trust and enhance the investor experience by trust building activities like robust security measures, maintaining transparency, explaining the algorithms used behind robo-advisory, so new time investors may understand and are able to better comprehend these services and thus, able to trust them in the future.

The importance of this hypothesis lies in the fact that trust is not just a supporting factor but can be a main determent when it comes to adoption. Investors can be sensitive in adopting new services which involves risking their money and if they can't trust it , then they will be hesitant to adopt it. Therefore, the first step toward adoption can be building trust in these services.

Almost every new technology face skepticism at first, but it is only through consistent trust building initiatives, also at times backend by government support, does the trust in them increases. When the investors feel that they are protected and there is proper law compliance then it increases their willingness to trust these automated financial advisory services.

H0: Financial literacy does not impact the adoption of robo-advisory services.

Financial literacy is largely associated with investors understanding of financial services. When it comes to investing, even the traditional financial advisory system demands a certain level of conceptual knowledge. Robo Advisory expects a certain knowledge of risk allocation, expected returns and asset diversification. Investors who already have a foundational might grasp the concept and working of robo-advisory more easily then others, who have a hard time understanding these concepts. Moreover the investors who posses higher financial literacy are able to effectively operate robo-advisory platforms and are able to assess the advantages of using robo-advisory like fast speed, low fees, minimal third party involvement, which overtime might reduce the uncertainty, they have regarding robo-advisors.

In contrast, those who exhibit lower financial literacy, might continue seeing these technology driven services as not trustworthy, limiting themselves to their advantages. Moreover it will continue the misconception that technology and AI services, can't be fully trusted and is ineffective. Therefore to study the impact of financial knowledge on the whole investor experience becomes crucial. This hypothesis, therefore aims to examine the role oof investor education in increasing the robo-advisory adoption rate.

H0: Psychological factors does not impact the adoption of robo-advisory services.

Psychological reasons are important factors influencing investment attitudes towards using robo advisory systems. These factors include perceived risk, loss aversion, attachment to traditional investment practices, and acceptance of technological innovation. Investors also have a preference for human financial advisors due to the emotional comfort, personalized interaction, and control offered by human advice. Emotional dependence on human interaction can lower the level of trust towards automated systems, even when advisory systems are objective and analytical, unlike humans.

Conversely, investors embracing innovations, comfortable with digital technology, and trusting decision making by computers will be more inclined to adopt a robo advisor. A more favorable attitude towards technology, risk, and convenience can be shown to contribute to adopting robo advisors. The proposed hypothesis emphasizes that investor behavior is determined by more than just rational money concerns, as it is also determined by human behaviors.

H0: Trust, Financial Literacy and Psychological factors do not have a combined effect on adoption of robo-advisory services.

This hypothesis analysis the overall impact of the three factors namely trust, financial literacy and psychological factor mainly fear, has on the adoption of robo-advisory. Adoption of robo-advisory is a complex process, and it involves examining the effect of factors simultaneously, not only individually. The three factors could be interlined with one another. For example, when it comes to increasing trust one method can be to increase the financial literacy, but even the financially literate investors may have preconceived notions or a prior bad experience with technology based platforms, which may be stoping them to use these services. Another method of increasing trust can be by tightening security measures, increasing transparency, which in turn reduces the fear in people's mind toward AI.

Therefore in a way, all these factors affect adoption simultaneously and it becomes important to understand, it's combined effect on adoption, because at the end it is not one factor that affects the adoption but multiple factors combined.

Therefore this hypothesis seeks to determine whether these factors together have a significant influence on the adoption rate, giving a more comprehensive view of factors that goes behind adoption.

3.6 RESEARCH METHODOLOGY

Methodology is important part as it offers different ways for gathering, analyzing, and interpretating the data.

Research Design

The present study adopts a descriptive and analytical research design to examine the adoption of robo advisory services among young investors in India. The descriptive component of the research design helps presenting a picture of level of awareness, perception and usage patterns of robo advisory platforms. There are a number of things that will be considered in order to develop an understanding of how comfortable or familiar investors are with automated financial advisory services, and to what extent they currently use these services, as well as their general feelings toward the use of automated financial advisory services. The current use of the various automated financial advisory services will also be evaluated to understand whether there are any measurable standards or behaviors related to the automated financial advisory services to develop an understanding of the adoption of automated financial advisory services. The research will provide a descriptive analysis of the current trends of automated financial advisory service use, as well as an even deeper analytical approach to determine what the various factors (e.g., trust in the robo-advisor, perceived risk, financial literacy, cost competitiveness) about automated financial advisory services will have on adopting that automated advisory service. In addition to getting a better understand of the various factors that are likely to influence the adoption of automated financial advisors, the research will provide substantial qualitative information that will help establish how these factors are likely to impact the decision-making process regarding whether or not to adopt an automated financial advisory service.

Sampling and Data Sources

The statistical methods used in this study (e.g., correlation, structural equation modelling) are based on the collection of a sufficient-sized sample to enable the identification of relationships between variables and support the research objectives. In this study's sample, the number of respondents is 145, which is large enough to be able to use the advanced statistical methods and allow for a significant amount of meaningful data to be collected, assessed and reported. The majority of the respondents are younger than average, which adds an additional dimension of relevance to the study due to their familiarity with technology and the fact that they are more likely to adopt new forms of digital and financial services than the average older investor. Thus, the younger respondents in the sample will help provide the research with data amply supportive of achieving its stated objectives.

Data Collection Method

The research method for this study was a structured questionnaire administered as an online survey using Google Forms, which was the most suitable choice for this research topic based on the fact that the research was digitally based and the target population would also be digitally-based. This questionnaire captures several dimensions of investor behavior and identifies various adoption drivers. For example, the questionnaire contains questions about how aware investors currently are of robo-advisory services, how much consumers trust using automation rather than human advisors, the perceived levels of risk and benefit, levels of financial literacy, and intentions to use such services.

Secondary Data Sources

Along with the primary data collected from the study, this study also uses secondary data from trusted sources such as peer-reviewed journals and published research articles, industry reports, financial publications, and various online databases. The secondary data helps to build the study's theoretical framework and to put the analysis in context.

Tools and Techniques of Analysis

The analysis of the data is done through the use of descriptive statistics, correlation analyses, and structural equation modeling techniques.

Descriptive statistics are used to present an overview of the data and the respondents profile. It helps in measuring certain aspects of the respondents like level of awareness, financial knowledge, including measures such as means, medians and frequency distribution.

Correlation analysis is employed to examine the relationships between key variables. It helps in analyzing if there exists a positive or negative relation between the selected variables, namely, trust, fear and financial knowledge. For instance, it helps in identifying whether higher levels of financial literacy results in greater adoption of robo-advisory services, or whether trust significantly influences the adoption level. This technique provides insights into the strength and direction of relationships between variables.

In this study, SEM was used to examine the effect of trust, financial literacy and fear on the Adoption of Robo-Advisory, in investment decisions. It was used to study and understand the relationship between different variables and to understand the impact of independent construct on the adoption of robo-advisory services in investment decisions.

Ethical Considerations

Ethical considerations are an important part of the research process, ensuring that the study is conducted with integrity and respect for participants. In this study, several ethical principles are strictly adhered to throughout the data collection and analysis process.

Participation in the survey is entirely voluntary, and respondents are made to understand the role of the research, before responding. Informed consent is obtained to ensure that participants are aware of how their data will be used.

The study maintains strict confidentiality and anonymity of respondents, by not collecting any personal information in the survey.This helps in building trust and encourages participants to provide honest and accurate responses.

The findings were reported objectively, and the interpretation of the individual findings was based on the actual data collected. Also, all of the data from the secondary sources was appropriately cited and acknowledged to prevent plagiarism and ensure the academic integrity of this study

3.7 Limitations of the Study

While this study utilizes a comprehensive methodology, there are still specific limitations that affect how the results can be interpreted.

Restriction on Sample Size:

The sample for this study consists of only young investors. Therefore, no older investors were included in this sample, thus excluding any factors that would affect their adoption behavior or their rates of adoption.

Geographic Limitation:

The geographic area from which the data was collected was limited to India, therefore any analyses performed with the collected data may not represent the entire population of India. In addition, other regions within India do not contain significant differences compared to other regions within India.

Self-Reported Data:

The data collected was based on the perceptions of the respondents through a survey and therefore they were susceptible to survey bias or over-reporting of their financial literacy levels, or their intentions to behave as they do compared to actually behaving as they are intended.

Limited Set of Adoption Factors:

Even though the study tries to exmine different factors affecting adoption, it limits itself to three main factors, namely trust, financial knowledge and fear, leaving behind several other factors like perceived risk, familiarity with technology and much more.

Rapid Evolution of Technology:

In light of the rapid developments in the field of digital finance and robo advisory technology, the applicability of the research outcome may change over time as developments in the field of robo advisory continue.

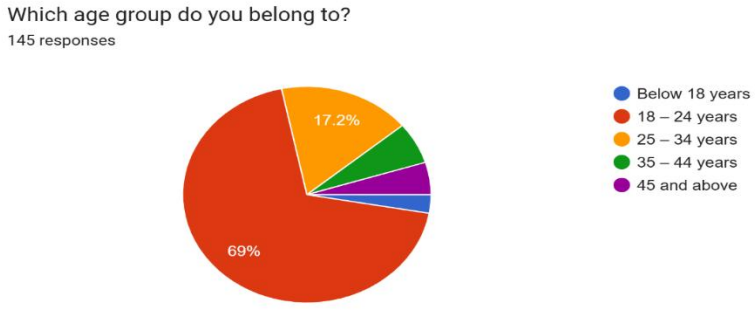
3.8 Data Analysis

This chapter gives an account of data analysis that was conducted on the data obtained for the study. For this purpose, a survey in the form of a questionnaire was developed using Google Forms. The questions contained in the survey try to assess the existing level of financial literacy, awareness of investors regarding the robo advisory services, level of trust, preferences, and behavior that can affect the use of robo advisory services. The survey was distributed through online platforms among academicians and peers in order to access the targeted respondents between the age group of 18 to 45 years. Statistical methods have been used to analyze the data.

3.8.1 Respondents Demographics

The following section gives an overview of the demographics of the respondents, which include their age, experience, and awareness about the robo advisors.

Age-wise Distribution:



More precisely, most respondents 70% , fall within the 18 to 24 age brackets, while there were 17% of people aged 25–34 years, which indicates that young adults constitute the primary focus group in the sample population. Young adults usually tend to use various digital financial services; therefore, this age group should be considered an essential and relevant one when analyzing their perceptions.

The high concentration of respondents in the age of 18-24 years, suggests that the study captures the perceptions of young adults who are generally more into technology and remain updated with the new trends. This group is characterized by greater technological adaptability, more openness to AI services,

a basic understanding when it comes to technology, less fear in adapting to new AI concepts and a willingness to learn and explore new digital services.

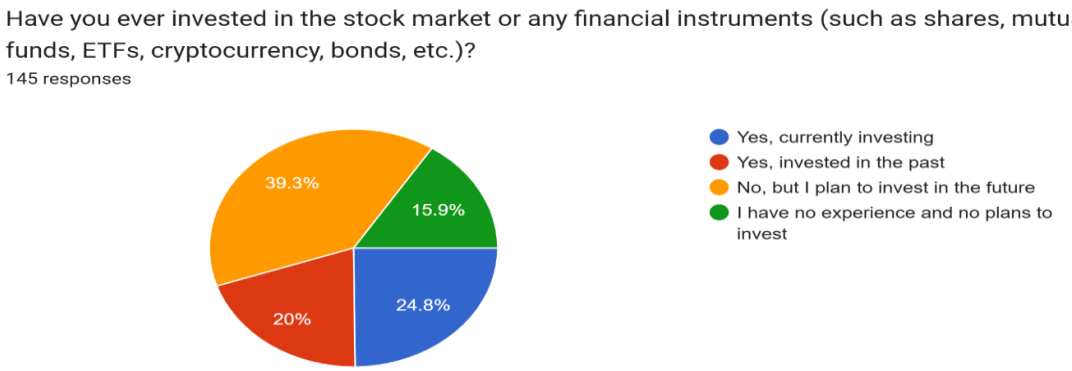
Their prior exposure to digital payments, digital investment platforms, app based financial management solutions, makes them relevant target population.

The representation of respondents from the age of 25-34 years of age, makes the category further relevant as this population of adults are in the phase of life where they start their early of wealth creation, future savings, financial planning of their children and retire planning. They might seek reliable platforms where they can invest and grow their money, and if they understand the concept of robo-advisory, these automated financial platforms might appear quit appealing to them.

When in comes to the comparatively lower representation of respondents from older age groups, it indicates that perceptions of middle aged and senior investors are less reflected in the study. Older investors may demonstrate different behavioral patterns, including greater preference for traditional financial advisory models, stronger reliance on human interaction, and comparatively lower comfort with automated financial services which involves decision making in important matters involving their money. Therefore, while the present findings provide meaningful insight into robo advisory adoption among digitally active younger investors, they may be more reflective of the attitudes of younger demographics rather than the broader investor population across all age groups.

Overall, the age distribution suggests that the study sample is largely drawn from a young and a digitally engaged population, which is of high relevance when it comes to study the factors behind adoption of a service which involves high use of artificial intelligence and is technology driven.

Investment Experience:

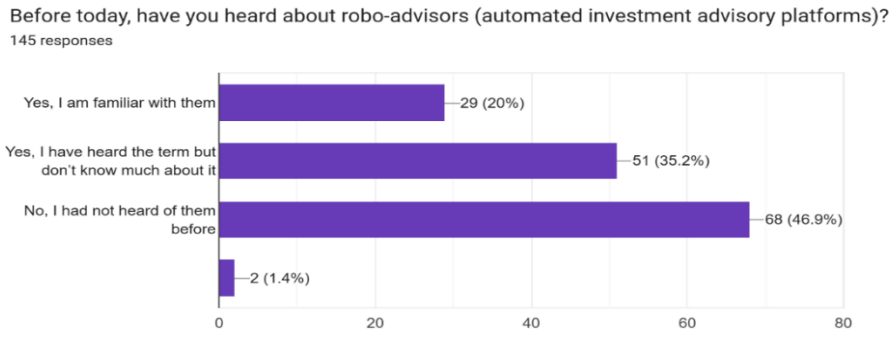


In addition, according to the gathered data, 25% of respondents are currently investing, 20% have done it before, and almost 40% will do it in the future. Thus, different levels of experience can contribute significantly to analyzing and interpreting collected information.

More than half of all survey participants plan to invest money in the future, which is especially important because it demonstrates a developing interest of the target population in finances and investment products. The target audience consists of young people willing to grow their investments. Therefore, such individuals might consider the platform being

convenient, fast, cost-effective, safe, and beneficial for them. Robo-advisors allow users to automatize the whole process of investment. Therefore, such platforms can be extremely appealing to investors.

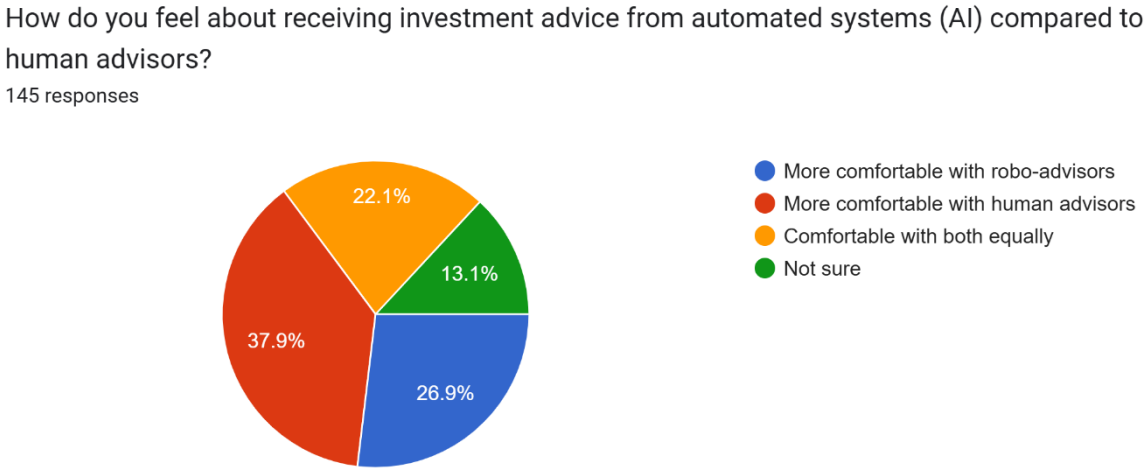
Robo-Advisory Knowledge:



When questioned about their previous knowledge of robo-advisors, 46% claimed that they did not know what robo-advisors are, 35% have heard about them but do not understand how they work, and 20% know about them well. This point is extremely relevant because awareness can be regarded as a fundamental prerequisite for adoption. That means the reason why there might be a lack of adoption even if technology is accessible can be informational rather than technological or economic. Since some of the investors are not aware of the existence of robo-advisors, they are unlikely to use them regardless of the high level of their financial literacy and the ability to adapt to innovations.

In other words, people do not want to use something that they do not understand or that seems risky to them. This consideration has important practical implications since it highlights the necessity to increase the efforts related to educational campaigns.

Investment Advice vs Human Advisors



As for the chart, it provides an insight into the perception of respondents about getting investment advice from robo-advisors compared to human financial advisors. One should note that 145 respondents took part in the research process; therefore, there is a certain number of people, which provides researchers with the opportunity to obtain valid results. On a general note, it is important to highlight that there is a visible trend towards a preference for human advisors; however, there is also a significant tendency to accept robo-advisors. Thus, one can conclude that it can be viewed as the transitional period in the development of financial services.

One should mention that the majority of respondents, which is about 37.9%, have a stronger preference for human advisors. It seems quite obvious that this is one of the prevailing preferences, which is caused by different factors. First of all, people are still more accustomed to interacting with humans rather than robots. There is a lot of emotional aspect involved in financial issues; therefore, humans are viewed as a preferable choice among investors. In addition, it is possible to mention that humans will be able to help investors understand their behavior. For example, in some cases, people make irrational decisions when investing their money because they are guided by emotions rather than logic. Therefore, it is necessary to understand what causes such decisions. Another reason why people opt for humans could be associated with their ability to analyze macroeconomic trends and make certain decisions according to their observations. Thus, it is possible to state that investors might place a higher degree of trust in human financial advisors since they have qualitative judgment and do not rely on numbers only. As a result, this explains why people are willing to trust their money to human financial advisors even now.

As for other respondents who showed a stronger interest in robo-advisors, one should pay attention to the fact that 26.9% of people preferred robo-advisors. It seems like there is a specific category of customers who find using robo-advisors more appropriate for their needs. This group includes young adults who are interested in technology and want to automate some aspects of their lives.

is possible to say that robo-advisors eliminate any possibility of making errors because they do not depend on humans' mood or behavior.

With users becoming increasingly comfortable with using digital financial tools (whereas mobile banking products, online trading platforms & automated investment services) will positively impact the level of trust that users have in AI-based systems. Many robo-advisors are also viewed as a more objective and reliable resource than human advisors (which can lead to emotional and irrational behaviors').

The second category of users has the same trust level in both robo-advisors and human advisors (22% of respondents). Users in this hybrid category will play an important role in shaping the direction of future financial advisory services. These users may also see value in both types of services and therefore will use them in conjunction with each other. Robo-advisors provide many efficiencies and expand the potential reach of advisory services, whereas human advisors have their own unique and complementary characteristics, such as personalization, emotional intelligence and strategic thinking.

As this segment continues to grow, there is increased acceptance of hybrid advice models, which exist when the two delivery methods (technology & human) are integrated together to provide enhanced value to clients. In a traditional hybrid model, robo-advisors may be used to conduct routine activities like portfolio maintenance and asset allocation, while human advisors focus more on long-term financial planning, building client relationships and educating and supporting clients with behavioral coaching. The combination of these two activities would allow robo-advisors and human advisors to compensate for their respective weaknesses and to enhance the overall value proposition provided to clients.

According to data compiled, the unsure category reflects that robo-advisors continue to gain popularity, but that there is still a relatively large portion of the population who need to know more about robo-advisors or need to feel more comfortable before using these services. Factors that may affect a respondent's willingness to use robo-advisors include concerns about data security and privacy; so, measures must be taken by the fintech industry in order to provide both regulatory guidelines and trust-building features that will help increase adoption.

The data indicates that preferences in the sample of respondents were widely spread rather than polarized. While human advisors continued to be the most preferred way to obtain financial advice, almost one-half (49%) of the responding sample was either comfortable with robo-advisors (27%) or equally comfortable with either (22%). Therefore, there is substantial potential for integrating some form of AI-based financial advising within the market.

These findings reveal a fairly equal preference for traditional versus technology-centric methods, which demonstrates a transformation of the financial advisory business. The financial services industry as a whole is now undergoing a digital transformation or digital evolution, where innovation is impacting the manner in which services are delivered and consumed. This also corresponds with global trends as robo-advisory platforms have all been rapidly growing due to advances in artificial intelligence (AI), machine learning (ML), and big data analytics.

With respect to demographic considerations, although the survey data did not directly provide a demographic description of the recipients, an assumption can be made based on the findings related to digital exposure; younger individuals and those who have increased experience using digital channels will have a greater propensity to select robo-advisors or hybrid advisory models while older individuals and those with limited technical experience will have a greater propensity to select traditional advisors. This generational gap is an important determinant in adopting fintech solutions and warrants consideration in future research studies.

The results of this survey, could help us understand things from a two-way perspective. One being that firms who continue to rely only on traditional advisory services and include no new methods of robo-advisory, might fail to attract the young generation in the long run, in this time of growing technology and a generation that embrace technology. Now from the point of view of firms who do undertake new digital financial products might face problems of trust, in the initial stage. Therefore it might be implied that firms that adopt a hybrid model, could blend both the use of technology and human expertise in their business.

The data shows that trust is the most important factor when it comes to investment. The level of trust that a person has in their provider is what determines whether the person will accept them. In order to build trust with robo-advisory services, developers must create transparent algorithms, explain clearly how their investments work, and maintain strong security measures..

Another important finding is that people feel concerned about their investment decisions because they are risky and uncertain. When faced with risk, investors seek for reassurance.. Human financial advisors are often viewed as being better at assisting clients with risks because they can provide context around their decisions and can be emotionally supportive. However, as technology continues advancing, the wayinvestorse view robo-advisors would likely shift as AI has proven it can perform complex tasks.

Finally, the data indicates a need for increased regulation in regards to robo-advisors. As more people

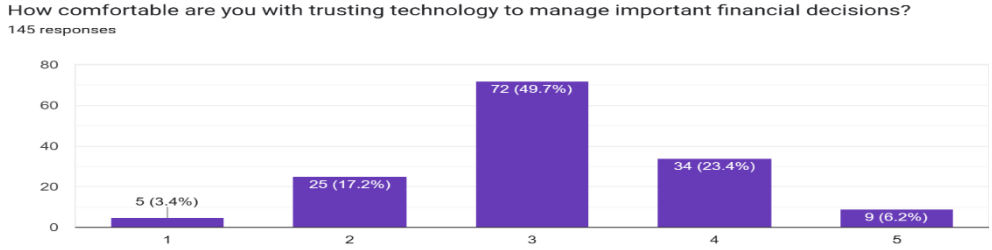
choose to invest in automated investment platforms, ensuring that these platforms are reliable, fair, and accountable is critical..

In conclusion, the analysis of the data shows that there is a complex and changing viewpoint on how investor will look on financial advisory service. While people still prefer human advisors, they are becoming more willing to use robo-advisors because they have found them to be more efficient, more accessible and less expensive.

The analysis also indicates that the financial services industry is positioned at a turning point where it will need to change from traditional forms of investment advice to more technological-based methods. As people become more aware of and trust robo-advisors, and technology improves, we would expect to see an increase in the use of robo-advisors; however, the need for human interaction will remain, especially when it comes to complex and risky forms of investment.

Overall, the analysis of the data provides an in-depth understanding of the ways investors exhibit their choice of investment advisory services, as well as reinforces the importance of maintaining flexibility and innovation while providing a customer-driven solution to investors within a very rapidly growing financial advisory industry.

Trusting Technology



Findings of the survey regarding comfortability associated with trusting technology in making important financial decisions indicate very moderate caution displayed by the respondents in Part 1. Responses exhibit significant indicated willingness to seek technology assistance for financial decisions, however,

exhibit moderate degree of hesitance with regard to technology's ability to be solely relied upon for decision-making. Using the 5-item Likert scale, 145 respondents provided usable data. The results, therefore, provide substantial data that illustrates how respondents position themselves on the continuum of strong distrust to strong trust regarding their willingness to trust technology for making significant financial decisions.

One significant finding from the survey is the very high degree of clustering of survey results at Likert Scale Point 3 (indicating neutral or ambivalent). As shown on the results, the midpoint (Point 3) contains 72 of the 145 persons surveyed (49.7% of total). Therefore, we find that nearly half of all respondents were at neutral/ambivalent with regard to their willingness to entrust technology to assist them in making high-stakes financial decisions. The survey did not reflect respondent willingness to either fully endorse technology as a means of making high-stakes financial decisions (confidence) or to fully reject technology as a means of making high-stakes financial decisions (skepticism). Instead, based on the survey results, it appears virtually all persons surveyed adopt a "wait-and-see" approach toward technology; meaning, while many persons indicate belief in technology to assist them with financial decision-making at some level, none of them believe technology is ready to assist them with high-stakes financial decisions.

There are several interpretations of central neutrality. One possibility is that the public's view is changing as they gain more exposure to financial technology—such as robo-advisors, algorithmic trading systems, and AI budgeting tools—but they need to build experience and the knowledge necessary for a strong degree of trust before doing so.

Alternatively, the neutrality can be indicative of an intention or balancing act by respondents in that they are aware of both the efficacies and risks of financial technology-based systems. Financial decision-making inherently involves personal risk and since individuals delegate their finances to automated systems, this creates concerns around transparency, accountability, and error. Thus, the neutrality of the responses does not reflect indifference as much as it does thoughtfulness resulting from awareness of risk.

Beyond the midpoint, the responses reflect greater levels of comfort than discomfort towards financial technology. Of the total sample of 140 (n=140), there were 43 respondents (approximately 29.6%) who reported values of 4 or 5, indicating comfort. Of the comfort respondents, 34 respondents (23.4%) indicated a level of 4 confidence with technology, while 9 respondents (6.2%) indicated strong confidence (5).

The data indicates the portion of the population that would rather utilize technology in making financial decisions than rely on expert advice is roughly equal to the number of individuals that would prefer to

have a face-to-face meeting with an advisor before making any significant financial decisions; however, the number of individuals who are completely committed to using technology for their financial decision-making appears to be on the same basis. In this case, when you look at the drop from 23.4% at Level 4 to 6.2% at Level 5, you can see there is a significant psychological distance that exists. Therefore, transitioning from being "generally comfortable" utilizing technology for financial decision-making and being "currently using" technology requires an arguably higher level of confidence than if you were to have some insight into how reliable the system is, how successful your previous experiences have been, and understanding how the technology you use works.

On the other hand, the population of individuals who have used technology for financial decision-making but are not comfortable (both Level 1 and Level 2) were significantly smaller than those who are comfortable using technology (Level 3, Level 4, and Level 5) in making these financial decisions (n=30 or 20.6% of sample). Of the respondents who were in the uncomfortable or distrustful group, only five (3.4%) would fall into Level 1, and 25 (17.2%) would fall into Level 2. The difference between levels of strength in Level 2 and Level 3 contrasts strongly when compared with the differences between Levels 4 and 5 on the comfort side as the differences were all moderate in nature. Indirectly, at the very end of the continuum, when combined, they represent a relatively small percentage of respondents, indicating there is not a large number of people that are completely unwilling to use technology to help them make financial decisions. Skepticism is often expressed in less extreme forms as the issues are most likely not absolute but more likely to be situational in nature.

Overall, the distribution of the scores is typically bell-shaped, with a neutral average but slightly skewed toward comfort. This indicates that the respondents are usually cautiously optimistic, but not yet completely skeptical. If an average score could be computed from the data, it would likely be above the midpoint of 3; this again would support the view that there is a low positive bias. However, the heavy percentage of neutral scores suggests that it is essential to consider what factors lead respondents to be hesitant. Therefore, for researchers and practitioners, it implies that greater adoption of financial technology will occur if not only functionality improves but also trust through transparency, education, and user empowerment develops.

One of several factors that likely influences respondents' attitudes toward financial technology is the perceived complexity of financial technology systems. Many people may be uncertain how an algorithm makes a decision regarding investment management or credit evaluation. As a result, they may not trust the outcomes from the algorithm as fully as they could if they understood the algorithm's operation. Therefore, to build trust through the use of financial information technology, an "explainable system" is vital. If a system can provide clear and comprehensible explanations to users regarding its process and

recommendations, it is more likely to gain the confidence of users.

A high number of neutral or not all responding could mean people aren’t resistant to using advanced technologies but rather to poor communication about them.

Another factor is perceived risk. Financial decisions generally include an element of uncertainty and loss, so consumers may be hesitant to give away their decision-making position in those situations. Even though technical solutions would be more accurate and efficient than traditional solutions, consumers could still think that the risk associated with failure is much greater than the potential benefit associated with successful use of the technology. Consequently, consumers with low or novice familiarity level with digital resources are much more likely to feel comfortable using digital resources than those who have familiarity. Therefore, the data shows a slight skew towards having comfort with technology has caused some consumers to have accepted the risk; however, one-half of respondents still show some level of doubt.

Trust in technological advancements is very much affected by societal and cultural influences. An example would be that individuals raised in very digital surroundings will likely be more comfortable with automation and using data for decision-making than those with little experience with technology. Likewise, trusts in the financial institutions of the world (the bank, technology companies, or regulatory authorities) have an impact on how people will trust the reliability of financial technologies. If the users feel that these technology systems are well-regulated with oversight, then it is likely that users will be more prone to trust them. On the opposite spectrum, if users do not trust the privacy of their data or

question if there are any security breaches or unethical practices, that will negatively impact their level of trust. The relatively low number of responses to having a high level of trust in the data may suggest ongoing questions in those areas.

These findings have significant implications for both technology developers and policymakers. From a technology provider perspective, the challenge is turning neutral users into users who have high confidence to adopt new technologies. This may include (1) improving user's interface (2) providing educational resources/explanations around the recommendation(s) the technology provides (3) providing a hybrid option with the automated recommendation & a human checking the recommendation. Providing platforms where the users are able to see the algorithmic recommendations and make modifications and changes to the decision(s) made by the algorithm(s) may help to bridge the gap between total automation versus manual intervention (providing users with a sense of control over the technology(s) will likely decrease perceived risks and increase feelings of trust).

The data indicates to policymakers that constructing clear regulatory frameworks is necessary to ensure the safety and fairness of financial technology. Transparent standards for data usage, algorithms, and consumer protections would be instrumental in establishing trust among citizens. Education and initiatives focused on improving financial literacy and digital literacy could give individuals more confidence in using technology. These neutral responses indicate that many individuals will be persuaded once they receive enough information and assurances.

The external events' effect on people's trust in technology should also be examined further. People's trust in technology may be affected by public perception due to negative external events; for example, high-profile algorithmic failures, data leaks, or financial fraud may lead to diminishing public trust and, consequently, lower response distributions. The inverse could occur following successful use cases and media coverage, resulting in consumers' heightened confidence and encouragement of use. The information shared here is a single point in time, and it will require continued monitoring to fully illustrate these dynamics.

In addition to external influences on people's perceived trust in technology, the interpretation of results includes limitations of the research conducted to date. The use of a Likert-type scale allows for a basic measure of overall attitudes toward trust; however, it does not measure the complexity of how participants might have arrived at their answers. For example, if a participant has selected a neutral response, this could be due to the participant's uncertainty, lack of opinion, or belief that it is dependent on the situation. Additionally, the Likert-type scale did not differentiate between various types of financial decisions, neither of which is likely to be comparable in the areas of risk or complexity. Trusting

a technology-based application to manage a simple budgeting process may differ greatly from trusting that technology to plan for one's retirement needs or to conduct large investment transactions. Future research could provide insight into this differentiation by utilizing more specific questions.

The data reveals that while technology is being accepted as a tool for making financial decisions, significant work remains to establish trust; many people are unsure about their opinions due to their own experiences, knowledge, and factors outside of their control.

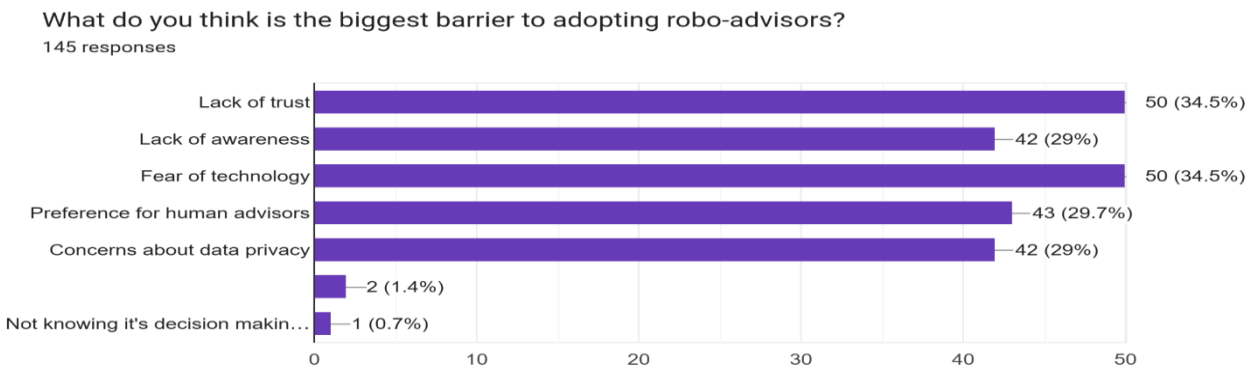
Efforts should be made by all parties involved in building confidence in technology systems by addressing areas of uncertainty and reinforcing benefits. Therefore, individuals have a lot to gain from using financial technology but have not yet made up their minds about whether to adopt it as we currently define trust.

As such, the results of the survey indicate that there is a large degree of ambivalence concerning the use of technology and its potential to impact decision-making in a positive way; while the percentage of respondents expressing "high" degrees of trust is quite small, the low level of "low" degrees of trust indicates that there is still an opportunity for development and enhancement of the improvements provided through technology.

The results of the survey provide several opportunities for targeted interventions to improve trust with respect to the use of technology for financial decision making.

As financial technology continues to develop and advance, its future success will be contingent on technical efficacy, and the ability of these technologies to develop, earn and maintain consumer trust. The results of this survey provide a foundation on which to understand those factors that will influence the development, adoption, and success of financial innovations; they also highlight the critical need for a consumer-oriented approach to the development and implementation of financial innovations.

Barriers to adoption



When asked about the barriers to adoption, the data revealed that there are certain psychological, informational and trust related factors affecting adoption.

One significant factor is revealed to be trust, over 34% respondents reported that hesitate to trust robo advisors when it comes to managing their money. This may arise from the uncomfortness in passing the financial control completely to technology.

Another important factor cited is fear, reported by the same portion of respondents(34%). Fear may arise from being unfamiliar with technology and discomfort from using digital financial products. It may also arise from the fear of data leak, security and reliability of these platforms.

Another close factor is preference to humans, selected by nearly 30% of the respondents. This highlights the human nature of trusting humans and being more comfortable with humans, then with artificial

intelligent services, which lacks human involvement. This also highlights the value and trust based on traditional financial system and how the whole structure of robo-advisory lacks relational and advisory depth, the personalized interaction and the emotional reassurance offered by traditional financial advisory system.

Around 29% of respondents reported lack of awareness as a barrier. This suggests that this portion of the respondents are not aware of the working of robo-advisory and what all benefits it can give. This creates a gap between financial knowledge and marketing outreach and stops those investors who might be eager to use these automated services from acquiring their benefits.

Similarly, 29% reported concerns about data privacy. Given the sensitive nature of financial data, apprehensions about cybersecurity, data misuse and confidentiality remain significant deterrents to adoption. It is crucial for robo advisory platforms to establish themselves as reputable providers and to fortify their security in order to spur the growth of adoption. Among the major findings, behavioral or perceptual factors dominate over functional barriers The major barriers to robo-advisory adoption are trust, comfort with technology and having some level of human contact. Research shows that there is not only one single reason for not adopting robo-advisory services, but rather an amalgamation of psychological factors that include knowledge deficits and risk perceptions.

3.8.2 Descriptive Analysis

The results of descriptive analysis form the first empirical layer of this study and provide an overview of the overall data set obtained during analysis, that is 145 valid respondents. This level of completeness provides a high level of confidence in the quality of data used in descriptive analysis, with no missing values for any of the records. Consequently, the descriptive analysis can produce credible statistical results without being affected by poor statistical quality that might be created by missing values or by using estimation methods for missing values. Description of the data using basic descriptive measures, including mean, median, mode, standard deviation, and range, allows for a detailed understanding of central tendency and dispersion of user perception and behavior.

Table 1: Descriptive Statistics

	FINANCIAL LITERACY	FEAR	ADOPTION	TRUST
Valid	144	144	144	144
Missing	0	0	0	0
Mode	1.586	2.537	2.002	3.030
Median	2.000	3.000	2.000	3.000
Mean (arithmetic)	2.146	2.868	2.073	3.090

	FINANCIAL LITERACY	FEAR	ADOPTION	TRUST
Std. Deviation	0.771	0.653	0.555	0.759
Minimum	1.000	1.000	1.000	1.000
Maximum	4.000	4.000	3.000	5.000

Four variables are used in and visualized as a structural model that will provide appropriate foundation for analysis of their relationships to one another: trust, fear, financial literacy and adoption.

Overview of Research Variables

Each of these four variables will help to explain how users view and act within the total financial system.Trust describes how much users have confidence in the system, while Fear describes their level of worry or risk they see with regard to using the system. Financial Literacy is the knowledge and understanding of financial concepts and finally, Adoption is whether or not the user has actually used or accepted the system. All four of these variables are interrelated and together have a significant impact on whether users decide to adopt a system or not.

Central Tendency Analysis

Analysis of the Central Tendencies provides a hierarchy of the variables from an overall mindset perspective of the respondents. The average trust rating of 3.09 indicates that respondents copiously had a moderate level of trust in the system and did not have an absolute or overwhelming confidence level in that system. Moderate trust levels generally indicate either that there is some uncertainty concerning the system or that respondents have little or no lengthy experience using that product. In addition to Trust, Fear has a mean of 2.87, indicating that while respondents are aware of possible risks and fearful, those fears are generally not significant or paralyzing. Moderate fear indicates the cautiousness of the respondent to use the product. Respondents' Financial Literacy has a mean of 2.67, showing that the respondents have only limited or basic knowledge of financial concepts as they relate to the system. The significance of this is that this represents a limitation to the respondents' ability to make informed decisions and thus contributes to their hesitancy to utilize the system. The most important thing to take away from the results regarding Adoption is that there is an average value of 2.07 for Adoption, which indicates a significant difference between actual usage or adoption of the system, as compared to the perceived psychological and cognitive elements related to the system. This difference indicates that there is a gap between the level of trust and understanding by respondents, and the level of active adoption of the system by the respective respondents. To illustrate how these responses are being distributed, the median and mode values along with the mean. The median for both Trust and Fear are equal to 3, indicating that the distribution of scores were fairly evenly distributed throughout, i.e. there were half of the respondents who answered below the median value of 3, as well as half of the respondents who answered above the median value of 3. This is emphasized by the fact that the majority of respondents responded to the midpoint or neutral options on the response scale, as there are many mode values clustered around the respective median values. The results demonstrate a high degree of agreement among mean, median, and mode, indicating a normal distribution with little to no skewness.

The standard deviation and range analyze the consistency of these responses across all variables. The low standard deviation values indicate that all responses were clustered together around the mean value with a high degree of agreement among all participants in the sample. Adoption was the least variable (standard deviation of, showing that low level adoptions are stable throughout the sample instead of due to the effects of large outliers)

In addition, the Maximum Level of Adoption indicates a maximum of 3.00 which means even the best users demonstrate low levels of acceptance. Because of the stable and symmetrical distribution of this data, the results are considered reliable, thus providing a solid basis for the rest of the structural and correlation analyses. To better understand the individual aspects of the study from a behavior standpoint, it is imperative to go beyond the individual statistic level and consider the comparative means of the variables.

The ranking indicates how the respondents have ranked their priorities in different aspects of their experience including Trust, Risk and Knowledge, relative to the actual behaviors in which they engaged. The Top Priority is Trust with a mean of 3.09 that indicates that Trust is the predominant factor affecting the perceptions of the sample group. The next two priorities after Trust are Fear and Financial Literacy which are very close to Trust, Adoption is the least prioritized variable within the sample. The low ranking of Adoption by users indicates that although users have a general level of confidence in the system and a minimal level of knowledge about the system, they are not actively using it.

It implies that how people perceive a service has significantly greater weight than what they actually do with that service in this type of setting. This also implies that how an end user thinks about using the system, their mental and emotional relationship to a service is not sufficient to override feelings of inertia against using that service. One of the most interesting things to note about the above data is the continuous gap between what users believe they will do and how they actually behave, which creates a "perception-action gap", as shown by the large difference between the mean for Trust (3.09) and the mean for Adoption (2.07). A rational behavior model would suggest that there would be some measurable relationship between having some level of trust in the service and some degree of adoption. According to the data, end-users may see the service as being trustworthy but lack a strong enough motivation to begin using the service.

Many different rationales exist to support this disconnect. Although users may believe in the security features of the system, they might still find it difficult to use because the interface is not so friendly when considering how the service benefits their daily lives. In some cases, users have become conditioned to using the existing methods and thus do not understand why they should switch to a new platform regardless of perceived trustworthiness. This demonstrates that a positive perception does not automatically translate into the actual usage of the new system and hence, establishing a positive image is only one requirement. The role of fear in this dataset has a mean value of 2.87, which represents a cautious awareness mode for the respondents. Respondents do not view the perceived risks of using the system as overwhelming enough to prevent them from using it completely. Nonetheless, they do not feel comfortable enough to use it with complete confidence. They will likely hesitate before doing so. Fear is not the primary reason for lower adoption rates (despite moderate levels of fear and lack of high intensity levels).

Even if organizations were able to create an environment of low user fear, user adoption rates may still be lower due to other factors i.e., lack of motivation, usability issues, etc.

A concept with a mean of 2.67, financial illiteracy has been identified as an explicit cognitive barrier affecting the participants. While the users possess enough knowledge to form a basic opinion and develop a fair level of confidence in using the system, their potential to act upon that knowledge is restricted by their lack of understanding of how to actually use the system. This is an important characteristic of the users' behavior in that because simply having knowledge does not necessarily translate into action. Users can find themselves with a basic understanding of either the theoretical benefits or the functional capabilities of a system, but still may not feel comfortable using it until they learn how to do so. The existence of a knowledge gap may also contribute to users avoiding using a system, thereby increasing its perceived level of complexity. When users have a low level of literacy, the perceived cost of acquiring the necessary skills to effectively operate a system increases, thereby decreasing their willingness to use the system, even though there may be a high level of trust in the system's security. Consequently, the results of this survey suggest that the transition from awareness to adoption requires more than simply providing information; but rather, implementation of strategies to develop simpler user experiences and reduce users' cognitive effort needed to participate in the system.

There is support for the fact that the findings gathered throughout the entire dataset exhibit consistent results with low variability in the 144 valid responses provided. In conjunction with this, the low standard deviation demonstrates that there is a high level of agreement among respondents, enhancing the overall reliability of the descriptive conclusions made in this phase of the analysis. Thus, the consistency of the gap between perception and actual adoption represents more than simple coincidence or the effect of sampling biases, it reflects a pattern of behavior that warrants more detailed examination. The remainder of the analysis will use these reliable descriptive findings as a basis to identify the nature and extent to which the variables studied are related through a correlation analysis, with a specific emphasis on identifying the specific relationships that may exist to explain the disconnect between cognitive perceptions and actual behaviors. Ultimately, the results from this descriptive analysis indicate that there are stable, highly consistent responses within the dataset to clearly identify a divide between cognitive perceptions and actual behaviors.

The closeness of the variables' mean and median values indicates an even distribution of the data reducing the chance that study outcomes are affected by extreme outliers or unusual patterns in a person's response. This shows a very stable series of responses, particularly on the Adoption component. The close range and low standard deviation of the data indicate that nearly all of the 144 subjects relate similarly to their low or limited use of the system. Therefore, the descriptive statistics tell us that while subjects have overcome psychological barriers of moderate trust and general awareness, they still face behavioral inertia. Thus, the primary barriers to system adoption will not likely be to further develop trust and lessen fear, but to effectively resolve real-world usability and situational limitations that keep individuals from fully utilizing or adopting the system. A thorough analysis of the central tendency and variability in this dataset will provide an adequate basis for proceeding with the correlation analysis of the strength and direction of relationships among these variables.

3.8.3 Correlation Analysis

After assessing each variable with descriptive statistics, the analysis shifts to how these constructs interact. Correlation analysis, using Pearson's correlation coefficient, determines how changes in one variable are statistically related to changes in another. In this research, the coefficient values map the internal logic that governs user behavior, ranging from -1 to +1. A positive correlation means that when one factor, like knowledge, increases, another factor, like trust, also often increases. By identifying these links, the study can go beyond simple summaries and start pinpointing which psychological precursors are most closely linked to the desired outcome of system adoption.

Table 2: Correlation Matrix

		TRUST	FEAR	ADOPTION	FINANCIAL LITERACY
TRUST	Pearson's r	—			
	df	—			
	p-value	—			
FEAR	Pearson's r	0.352	—		
	df	142	—		
	p-value	<.001	—		
ADOPTION	Pearson's r	0.175	0.041	—	
	df	142	142	—	
	p-value	.036	.624	—	
FINANCIAL_LITERACY	Pearson's r	0.633	0.328	0.060	—
	df	142	142	142	—
	p-value	<.001	<.001	.478	—

The first finding that stands out from the matrix is the strong relationship between Financial Literacy and Trust, with a 0.633 coefficient. This demonstrates a strong positive correlation between the two, indicating that the level of knowledge positively influences the level of trust or confidence in one's ability to manage their finances. In contrast, Adoption shows weak or no correlation with almost all other variables. Trust has a weak correlation to Adoption at 0.175, and very weak correlations for Fear (0.041) and Financial Literacy (0.060). Consequently, these variables measured by this study are not a determinant of participants' actual adoption of the system. This quantitative evidence supports the previous descriptive analysis of a "perception-action gap" and indicates that adoption is likely affected by external or situational influences beyond the scope of psychological constructs alone.

The correlation matrix reveals that the most important relationship examined within this study is between financial literacy and trust with regards to digital platforms; with positively strong coefficient of 0.633. This indicates that as users improve their knowledge regarding how financial systems operate, their level of confidence regarding the platform's overall reliability grows stronger. This finding holds importance for the study as knowledge forms the basis of perception. Users who are informed are much more likely to become users who have confidence in that system. However, this strong relationship between literacy and trust does not extend to behaviors of use. Although confidence is derived from knowledge, neither financial literacy (0.060) nor trust (0.175) exhibits strong relationships with the actual use of digital finance. This suggests that there is a structural bottleneck which is demonstrated by the fact that while the confidence building phase of education works, the action taking phase does not work. The education establishes a user's confidence in a digital finance platform, it does not establish enough confidence for that user to believe it is worth their time or effort to use the platform on an ongoing basis.

The Role of Fear in the Correlation Framework

The manner in which fear relates to other variables highlights the user's emotional condition while going through the adoption phase. Trust has a moderate positive correlation (0.352) with fear and financial literacy has a similar correlation (0.328) with fear. A positive correlation between trust and fear may initially appear to result from having opposing forces, but when it comes to fintech, there is an implication of "educated apprehension" due to increased familiarity. Therefore, as users gain financial literacy and develop more trust regarding the system, they become more aware of potential risks when conducting digital transactions. Thus, the fear they experience comes from having engaged with the system as well as developed an understanding rather than from a lack of knowledge; nonetheless, the level of fear does not influence the adoption process; thus, fear's correlation with the adoption variable is an inconsequential (0.041). This indicates that although users have concerns, fear does not drive decisions to adopt or not adopt.

The most significant conclusion drawn from the correlation matrix is that there is not a strong driver of Adoption across this dataset, while Trust is the strongest correlating attribute with Adoption at a value of 0.175, which falls into the weak category. Trust, Awareness, and Risk Mitigation were not major contributors to user behavior for this dataset. Therefore, these quantitative findings further validate the "perception-behavior gap". If there are no Trust or Knowledge based reasons for driving Adoption, nor will Fear (risk) be a barrier, then there must be other latent variables that will influence Adoption. Possible examples of such variables include ease of use, immediate practical need, or social influence from peers. Correlation findings winnow down which attributes do not drive Adoption and emphasize the importance of practical usability versus mere psychological sentiment. The strength of relationships provides insight into the hierarchy of influences represented in the model as illustrated by the data indicating a clear flow for the relationship between Financial Literacy to Trust, with moderate association to Fear, establishing a knowledgeable but cautious perception of a user. However, this flow fails at this point because the relationship is considered too weak to drive Adoption.

Table 3: Summary of Relationship Strengths

Relationship Path	Correlation Coefficient	Qualitative Strength
Financial Literacy → Trust	0.633	Strong
Trust → Fear	0.352	Moderate
Financial Literacy → Fear	0.328	Moderate
Trust → Adoption	0.175	Weak
Financial Literacy → Adoption	0.060	None/Negligible
Fear → Adoption	0.041	None/Negligible

The data indicates that there is a strong body of evidence indicating the existence of a psychological foundation like trust and knowledge for using the system among users, this does not translate into sufficient behavioral momentum for system usage at this time. The data collected from 144 individuals suggest that, in order for adoption to ramp up, efforts must transition away from a purely informational strategy and toward addressing the pragmatic, as well as environmental barriers that separate a trusting user from an active user. The correlation evidence is also cause for further investigation into why the existing psychological paths, especially the strong connection between knowledge and trust, do not result in actual usage of the system.

When comparing the results of our statistical analysis relating Financial Literacy (FL) to Building Trust (Trust), we can observe both a positive correlation and identification of a dead end in the behavioral chain of building trust. The disconnection between correlations illustrates how individuals can cross through the cognitive phase of the adoption process, but hit a wall in terms of transitioning to active use behavior.

Moreover, these results indicate that the study participants possess a relatively high level of perceived trustworthiness in the system they are evaluating, but relatively low levels of perceived necessity and/or ease of use. The low correlation value between Trust and Adoption (r = .175) points to a major issue in traditional models which indicate that trust is the principal factor driving a person's decision to use a new technology. In this instance, however, trust is primarily a passive state to study participants trust is the necessary condition to preclude total rejection of the technology, but does not provide sufficient motivation for long term continued use.

The correlation matrix has an interesting nuance in the mild positive correlation between Financial Literacy and Fear (r = 0.328). Typically, in many tech environments, increased education reduces anxiety. However, as respondents gain greater Financial Literacy, they also slightly increase their level of anxiety. This indicates that with knowledge about the financial system comes a greater awareness of its risks and complexities rather than reducing them. Therefore, users' increase in Financial Literacy does not make them braver, it just makes them more vigilant. The level of vigilance corresponds with the positive and moderate correlation between Trust and Fear (r = 0.352). Users that trust the system tend to be the most aware of the risks associated with that system. These two traits create a profile of a sophisticated user who has a lot of confidence combined with a little caution. However, the correlation analysis suggests that the confidence/caution balance will not have a significant impact on the likelihood of adopting the system, as the correlation between both Trust and Fear is not statistically significant with respect to actual adoption factors. As a result, psychological friction due to fear is not what prevents users from utilizing the system. Rather, it is because users do not see any pull factors that would make the use of the system vital to their daily lives. It is worth reiterating that the correlation analysis showed virtually no relationship between the two variables of Adoption and Fear.

To enhance adoption of AI Writing, future research and organizational interventions must alter the external environment/system around it rather than merely relying upon psychological and/or education-based approaches. The important missing link between moderate trust and active participation for users will be created by improving the practical application, convenience, and overall user experience of AI Writing. Analysis of the correlation matrix shows that there is currently a structural obstructive element to the research model at the Perception and Behavioral phases. Although there is a clear statistical correlation (r = 0.633) indicating that Financial Literacy and Trust have an appropriate flow of information providing confidence, this conveys through to the Adoption construct. It would appear that there may be some belief that when users are involved with mental simulations. They appreciate how much value and reliability will be provided through Financial Literacy and Trust; however, there appears

to be insufficient supporting motivation for them to fully incorporate AI Writing into the normal course of their daily lives.

The slight correlation between Adoption and all other variables and particularly, the 0.175 value with Trust show that usage does not relate with opinion building. In other words, in "Internal Motivators"(trust and knowledge) are not aligned with External Actions(adoption). This indicate that the system might be perceived as a theoretical invention rather than a necessity. As trust is intellectual for those participants and does not represent a high enough value to alter previously ingrained behavioral trends that would be dependent on a greater set of variables that are outside of this model and on time restraints and the habitual behavior. Financial Literacy has a decent relation with Fear and is a valuable indicator of the "Informed Caution" mindset for the 144 participants. In usual consumer behavior models where the increase of knowledge decreases the perceived risk, in this specific set of data, knowledge on the financial system and its mechanisms led the user to an increase of awareness and a cognitive on guard state; the user is not afraid in a traditional sense, but is aware of the risks related to digital financial systems. However, the correlation matrix proves that this vigilance is not a factor to the low adoption ($r=0.041$ between Fear and Adoption) If the user was scared from the system, there would have been a high negative correlation; as instead the correlation matrix demonstrates a neutral relationship; that is the user is capable of feeling moderate fear and still use the system or not feel any fear at all and still not use the system. Therefore, the low mean value on Adoption of 2.07 is not related to the "functional avoidance" caused by Fear, but rather the absence of "functional attraction" because there is a lack of perceived utility or a bad user experience. The last indicator that should be highlighted from the correlation matrix is the near absence of relation between the variable Adoption and the cognitive dimensions of the study. In fact, Financial Literacy relates with Adoption by a negligible 0.060. Therefore, mathematically, it is undeniable that a fully knowledgeable user is not more likely to adopt the system than an entirely unknowledgeable user. This leads again to the previous conclusion, that the 144 valid participants are currently in a state of unrealized potential, where they have trust and knowledge for the system, but lack the behavior for it. This stability of the 144 valid user implies that future attempts to increase adoption of the system are not based on educating and increasing the system trustworthiness, as those levels are already reaching the moderate-high level, and should be focused on the last mile, i.e. on the functional convenience and usefulness.

3.8.4 Model Fit Assessment

The following fit indices were considered to determine how well the structural model was fitted: SRMR=0.000, RMSEA=0.000, CFI=1.000, and TLI=1.000. These values are satisfactory to determine that the proposed structural model has excellent fit.

Table 4: Model Fit Indices

Fit Index	Recommended Value	Obtained Value
SRMR	< 0.08	0.000
RMSEA	< 0.08	0.000
CFI	> 0.90	1.000

Fit Index	Recommended Value	Obtained Value
TLI	> 0.90	1.000
NFI	> 0.90	1.000
IFI	> 0.90	1.000

3.8.5 Structural Equation Modeling

Data collected through the survey was analyzed using Structural Equation Modeling (SEM).

Structural Equation Modeling (SEM) is a statistical technique used to analyze relationships between multiple variables simultaneously. It combines factor analysis and regression analysis to examine how independent variables influence a dependent variable. In this study, SEM was used to examine the effect of trust, financial literacy and fear on the Adoption of Robo-Advisory, in investment decisions. It was used to study and understand the relationship between different variables and to understand the impact of independent construct on the adoption of robo-advisory services in investment decisions. The SEM analysis was carried out by examining regression estimates, residual covariances, residual variances and the structural path diagram, which collectively provide insight into the adequacy and explanatory power of the proposed model.

Regression Coefficients

Regression Coefficient is used to examine how the independent variables: trust, financial literacy and fear affects the dependent variable adoption.

Table 5: Regression results of Trust, Fear and Financial literacy on Adoption

							95% Confidence Interval	
Outcome	Predictor		Estimate	Std. Error	z-value	p	Lower	Upper
ADOPTION	TRUST		0.130	0.065	2.008	.045	0.003	0.258
	FINANCIAL LITERACY		0.022	0.060	0.362	.717	-0.096	0.139
	FEAR		-0.021	0.074	-0.277	.782	-0.166	0.125

In the above table, The coefficient (β), represents the direction and strength of the relationship between a dependent variable and an independent variable. The findings indicate that trust (β = 0.130, SE = 0.065, z = 2.008, p = 0.045, 95% CI [0.003, 0.258]), positively influence the adoption rate and is statistically significant for the adoption of robo advisory services, suggesting that individuals that find robo advisors reliable and trust worthy are more likely to adopt their services and that that investor confidence in transparency, reliability and security plays an important role in shaping the adoption behavior. With a p-value of 0.045, which is less than the standard threshold of 0.05, the relationship between trust and adoption is considered significant. The positive coefficient further suggests that an increase in trust leads to an increase in adoption behavior. This implies that individuals are more likely to adopt a system or service when they perceive it as reliable and trustworthy.

Behavioral explanations of this finding is also crucial. Oftentimes, individuals are faced with uncertainty when making decisions that have real world implications and the availability of complete information may be limited. In these instances, trust can act as an alternative to overcome complexity and relieve risk. Individuals feel confident in their decisions when they trust a given system even though they do not have complete knowledge and understanding about all the technical or financial aspects of that system. Trust serves as a substitute for uncertainty and serves to facilitate emotional confidence, thus making the decision process easier and more fast. Therefore, this behavior is likely to be the key reason for the prominence of trust as a significant influence on adoption.

The findings also indicates that financial literacy exhibits a slightly positive but statistically insignificant affect on the adoption. ($\beta = 0.022$, SE = 0.060, z = 0.362, p = 0.717, 95% CI [-0.096, 0.139]). Though the coefficient suggests a positive relation between financial literacy and adoption, the effect is not statistically significant, suggesting that financial literacy is not the sole decider of the adoption rate of robo advisory services. While it may increase the understanding of robo advisors, it alone is not sufficient in determining or increasing adoption.

This finding introduces us to a new concept that , even though someone is financially literate and can understand certain concepts easily it doesn't mean that they will act upon it. There might be other barriers that might be stoping them, like lack of confidence, fear, perceived risk. This challenges the common belief that increasing financial knowledge will result in better financial decision and adoption level.

The study also identifies that fear has a negative and statistically insignificant relation with the adoption ($\beta = -0.021$, SE = 0.074, z = -0.277, p = 0.782, 95% CI [-0.166, 0.125]). It suggests that concerns like data security, privacy, transparency discourage investors from using these automated services. The negative coefficient indicates that if fear increases, the adoption rate decreases, and the p-value indicates that the effect is not strong enough, that is insignificant in the present sample.

Another possible explanation of this finding is that, when investor start trusting these services, and their trust and comfortability level increases, it may reduce fear. When investors are confident and secure, fear holds less importance in the decision making process and the level of fear in the respondents might not be sufficient enough to create a significant effect on adoption,

Residual Covariance

Residual Covariance shows the relationship that exists between the chosen variables, namely: trust, financial literacy and fear.

Table 6: Residual Covariance

						95% Confidence Interval	
Variables		Estimate	Std. Error	z-value	p	Lower	Upper
TRUST - FINANCIAL LITERACY		0.107	0.000			0.107	0.107
TRUST - FEAR		0.173	0.000			0.173	0.173
FINANCIAL LITERACY - FEAR		0.044	0.000			0.044	0.044

In the above table the residual covariance between trust and financial literacy was estimated at 0.107, indicating a weak positive relation between the two variables. This indicates that those respondents who have higher financial literacy, may show slightly higher trust in robo-advisory platforms.

Trust and fear exhibited a weak positive covariance (0.173), indicating some relation between the two. . Financial literacy and fear showed a very weak positive covariance (0.044), showing minimal relation between the two variables.

Overall, the covariance results indicate that the independent variables are distinct, and show limited shared relations. Trust and financial knowledge has a positive relation, indicating individuals with slightly high knowledge indicates higher level of trust, but the strength of the relationship remains low, indicating that these variables remain highly independent.

The relationship between fear and financial literacy is weak, suggesting that knowledge ,is not enough to effect the adoption behavior.

These findings highlight an important aspect of human behavior: individuals do not always act in a perfectly rational manner. Emotional factors often coexist and influence decisions in different ways.

Residual Variance

The residual variances indicate that some variability in the variables remains unexplained, which suggests that there are factors other than the one proposed in the model, affecting the adoption of robo-advisory.

Table 7: Residual Variance

						95% Confidence Interval	
Variable		Estimate	Std. Error	z-value	p	Lower	Upper
ADOPTION		0.296	0.035	8.485	< .001	0.227	0.364
TRUST		0.572	0.000			0.572	0.572
FINANCIAL LITERACY		0.590	0.000			0.590	0.590
FEAR		0.424	0.000			0.424	0.424

In the table above, the residual variance for adoption is 0.296 ($p<0.001$), which suggests that after trust, fear and financial literacy, there are also other factors not included in the present model, that affects the adoption. These factors could be, awareness, ease of use, technology acceptance, income level, risk appetite, previous investing experience etc.

The residual variance for Trust is 0.572, which suggests that trust varies among respondents and the variance is not fully captured by the model. This unexplained variability might be attributed by other factors such as prior experience, cybersecurity concerns, brand reputation.

Residual variance observed for financial literacy is 0.590 and fear is 0.424, indicating there are parts of variability unexplained by the model. The additional factors influencing these constructs could be educational background, digital familiarity, fear of artificial intelligence, fear of losing money, unfamiliarity with fintech, lack of human interaction etc.

The variance estimates provide important insights into the distribution and variability of each variable within the sample. Financial literacy and trust shows higher variance compared to adoption and fear, indicating that there is a wide range of responses among individuals in terms of their knowledge and level of trust.

When it comes to adoption it exhibit lower variability, this suggests that investors will exhibit similar adoption behaviors despite the presence of different factors. This could imply that adoption decisions are influenced by a common factor, such as trust, which has less variability in behavior.

The human aspect of this variation is the real diversity that exists in the world. Not everyone has the same level of confidence, knowledge or emotional reaction to adoption. For example, persons may be highly knowledgeable but lack trust; while others may not have a lot of knowledge but nonetheless adopt with confidence.

Alignment of Findings with Research Objectives:

The present study sought to examine the individual and combine effect of trust, fear, financial literacy on the the adoption of robo-advisory. For this purpose the study employed descriptive statistics, correlation and Structural Equation Modeling (SEM), so that the findings will effectively be related with the objectives.

The first objective was to examine the extent to which trust impacts the adoption of robo advisory services and the findings revealed trust to be a significant factor influencing the adoption rate.

The descriptive statistics reveal that trust recorded the highest mean score (Mean = 3.090**)** among all variables considered in the study. A higher mean value suggests that respondents consider trust as an important factor while evaluating these automated services, indicating that respondents generally displayed a comparatively favorable perception toward trust related dimensions of robo-advisory services, such as reliability, transparency, compliance with the law and confidence in AI services.

The correlation analysis further reinforces this finding. A positive and statistically significant correlation was observed between Trust and Adoption ($r = 0.175$, $p = 0.036$), which indicates that greater level of trusts results in higher level of adoption. When investors are confident about using these services, in their functionality, credibility, working and security, they adopt these services much faster, resulting in overall increase in adoption level.

The SEM regression results provide stronger empirical support for this relationship. Trust was found to exert a positive and statistically significant effect on Adoption ($\beta = 0.130$, $p = 0.045$). The positive beta coefficient, further indicates that when trust in these services increases, it is linked with increase in investors willingness to adopt these services. The statistically significant p-value confirms that trust is not merely associated with adoption but acts as a meaningful predictor of adoption behavior within the structural model.

Thus, the findings indicates trust to a significant factor influencing adoption level, and the first step in increasing the adoption should be increasing the trust through strong credibility, reliability, security, easy accessibility, easy to use interface and regulatory compliance. All these play a central role when it comes to increasing the trust level. Thus, the first objective of the study is achieved, with empirical evidence confirming the significant influence of trust on adoption behavior.

The second objective was to study the impact of financial literacy on the adoption of robo-advisory services. The descriptive statistics results, indicate that financial literacy recorded a mean score of 2.146, reflecting a moderate to comparatively lower level of financial understanding among respondents in relation to the other variables studied. This suggests that the awareness, financial concepts, new investment tools and knowledge about the updated digital financial services, are still moderate and developing in the sample population.

Correlation analysis shows a weak positive relationship between financial literacy and adoption indicating that although financially literate individuals may display slightly greater willingness to adopt robo-advisory services, the relationship is relatively weak. However, an important observation from the correlation matrix is the strong positive correlation between financial literacy and trust ($r = 0.633$, $p < 0.001$). This suggests that those who have higher levels of financial literacy, shows greater trust in these services, indicating that financial literacy can be used as a tool to increase the trust, which in turn increases the adoption level.

This relationship gives an important insight into the adoption process. Financial Literacy can influence the adoption process indirectly through trust. Financial Literate individuals can better understand the working behind the algorithms, automated mechanisms, portfolio diversification and operational functioning of robo-advisory platforms. Therefore, rather than influencing directly, financial knowledge influences indirectly by increasing investor confidence and understanding of these automated financial services.

The SEM results indicate that financial literacy has a positive coefficient ($\beta = 0.022$) but the relationship was statistically insignificant ($p = 0.717$). This further indicates that financial literacy may not be the sole and direct predictor when it comes to adoption, but with it's strong association with trust, it acts as a supporting factor shaping investor perception.

The third objective was to identify the psychological factors, particularly fear, that influence the adoption of robo advisors. Descriptive statistics indicate that fear recorded a mean score of 2.868, reflecting a moderate level of psychological concern among respondents. This indicates that certain level of concerns/worries may exist in the investors perception when it comes to using services with artificial intelligence. These types if concerns may arise from uncertainty that comes when human decision making is shift to algorithmic decision making, the human judgement, fear of financial losses, security concerns and the general hesitation towards technology driven financial tools.

The correlation analysis reveals a very weak positive association between fear and adoption ($r = 0.041$), suggesting that there is a small relation between psychological factors and adoption behavior in the present sample of the study. The SEM regression results further show that fear has a negative coefficient ($\beta = –0.021$), suggesting that when fear increasing, the willingness to adopt the automated financial services decrease, but the relationship remains was statistically insignificant ($p = 0.782$), indicating that fear did not emerge as a strong independent predictor of adoption within the present model.

Although there might be some psychological issues regarding robo-advisory services, the level of adoption does not rely only on psychological reasons alone. The fourth objective was to determine how the combination of the three variables, namely, trust, fear and financial literacy work together to influence adoption level. The SEM framework helped by measuring the simultaneous impact of all three variables in a single structural model. The overall model fit indices demonstrate excellent fit, with Comparative Fit Index (CFI = 1.000) and Tucker-Lewis Index (TLI = 1.000), indicating that the proposed model correctly. represents the observed data and provides a strong basis for interpretation.

When the variables were analyzed in combination, trust was the strongest and statistically significant contributor to level of adoption, while financial literacy and fear had lower overall impacts. Thus, even though there are several different factors that play a role in how investors see robo-advisory services, trust is the predominant variable in final decision to adopt these services.

The results of the residual covariance analysis also found limited shared variance among the independent constructs, so for this reason , trust, financial literacy and fear can be considered to be separate and distinct factors with some relationships to each other. The estimates of residual variance also suggest that there are other considerations of technology readiness, perceived usefulness of service, awareness of service, investor's experience and familiarity with the use of digital financial services that could also effect an investor's decision to adopt robo-advisory services.

When examined collectively, trust emerged as the strongest and statistically significant factor influencing adoption, while financial literacy and fear demonstrated weaker direct relations. This indicates that although multiple factors shape investor perceptions, trust acts as the primary one influencing final adoption decisions. Residual covariance analysis also indicates limited shared variability among the independent constructs, suggesting that trust, financial literacy and fear remains distinct factors while showing some interrelationships. Residual variance estimates further indicate that some variability in adoption remains unexplained by the present model, suggesting that are additional determinants such as technological readiness, perceived usefulness, awareness, investment experience and digital familiarity might also contribute to robo advisory adoption.

Overall, the combined analysis confirms that investor adoption of robo advisory services is influenced by a mix of factors, both financial and pyschological, with trust emerging as the dominant driver of adoption behavior.

IV. RESULTS AND DISCUSSION

The data set of 144 respondents, indicates that trust is the major driver behind adoption of robo-advisory for young Indians. The result of the regression shows that, a positive and statistically significant relationship exists where, a higher score in trust indicates higher usage of the automated system. Current trust levels have a moderate mean score of 3.090 which is the highest mean score across all variables. This implies that adoption is yet far away, while the mental frame work has been successfully built by Fin-Tech. Inspite of the presence of the perception on the need of this technology, there is a paradox between action and behavior. While financial literacy was positively correlated with trust, its direct influence was insignificant. With a literacy mean of 2.146 it appears, education has taught them on what robo-advisors offer, however have not convinced them with the necessity and benefit to start using these, hence suggesting that only increased financial literacy is not sufficient to alter the behavior. Fear and technology anxiety does not seem to be a deterrent, with a moderate

mean fear score of 2.868, a negative and insignificant correlation with usage, it further appears that a positive association exists between trust and fear signifying an alert yet not anxious state and indicating that users await utility more than the vanishing of fear. The other finding that is crucial is the fact that the fear exhibited by users (mean 2.87) has a very little bearing on the actual adoption decision. Common understanding is that perceived risk and fear is the primary hindrance when it comes to new technologies. However, with a near zero correlation coefficient of fear with adoption (r = .041), this hypothesis proved false for this data set, signifying that users are not held back by emotional hesitancy. In other words, users have reached a state of "normalized caution" where, users have a moderate amount of risk concerns yet it does not affect their final behavioral outcome and users will probably proceed with a factor that they deem fit, rather than continuing to wait for fear to vanish. Thus, organizational efforts which only focus on risk communication and the elimination of user fear will only have declining success in increasing actual adoption. The overall low correlation between each of the studied variables with the final adoption is a vital finding, that there exists a significant other unknown variable, or factors that drive adoption rather than the ones studied, here implicitly pointing towards practical benefits such as efficiency, cost and user experience, that might drive the young Indian investors towards adoption. Current financial literacy scores at a moderate 2.67 level imply that the users are adequately informed about the benefits of using robo-advisory but are not yet willing to commit and integrate it with their existing methods. This could mean that they know what they want to know but not know how to use it. The most significant conclusion is the presence of an overall "Perception-Action Gap" that prevails across all respondents; it is established that the users are aware and trust the system; however, these perceptions are functionally disconnected from the actual usage behavior. This perception-action gap seems to be more prevalent with low variability in actual usage scores (SD=0.555); it implies that the sample has failed to move on from the cognitive stage to the operational one. The implication is that the conventional 'funnel' model where awareness leads to trust, and trust leads to usage, is broken; and that users have evaluated the system and decided in favor but stopped short of integrating. In essence, the barriers are not in the mindset of the user but in the system itself and the behavioral context of the user. So, till the 'perceived value' transforms into a 'necessity of use' robo-advisory may see no significant increase in adoption rates. This conclusion strongly advocates a move beyond just information and awareness, as clearly indicated, the gap persists despite moderate trust. Finally, it is important to note that the low correlation coefficient with the final adoption implies that there are other "invisible" factors (e.g. System ease of use, convenience) not considered in this research that drives the actual adoption decision. In other words, for a user to adopt, the "value proposition" has to be overwhelming. If an individual trusts a system but it is complex to use or not easily accessible, he/she will opt for familiar, conventional methods, due to which the perception that leads to a purchase intent does not translate to action. The most evident structural linkage is a correlation between financial literacy, trust and fear; were, financial literacy fuels trust which in turn fuels fear, signifying an 'informed fear'.

What's significant here though is that this pathway is 'self-contained'. It leads to a cognitive judgment (formation of an opinion) but exerts no pressure on the adoption variable. The analysis thus proves that user behavior isn't just a single linear flow, but rather a series of discreet modules. The 'What I think' module is (Literacy Trust) while the 'What I do' module is (Adoption). Since these are not currently linked in this study the finding shows that it doesn't follow that success in one module would translate into action on the other module. The results indicated that adoption rates were low (mean 2.07) which is consistent with behavioral inertia/established habits. Since users trust and know a decent amount there is nothing inherently wrong with using the existing systems so they are not being rejected, but rather there is a "status quo bias". Users will use existing methods unless the benefits are clearly greater, as their current method requires zero additional cognitive or physical effort. The finding thus suggests that adoption involves getting rid of "frictions of change" rather than merely adding positives. It would seem the "cost" associated with learning and integrating the new system is higher than the perceived "reward" they would receive with only moderate trust levels among the 144 users. The study therefore shows adoption to be behavioral not informational-it requires the user's habits to be disrupted via superior convenience and immediate positive reinforcement. Delving deeper into the finding we find that the participants can be categorized as being in a state of "informed vigilance".

Financial Literacy is significantly (but moderately) positively correlated with Fear ($r=0.328$), so it is clear that as users increase their Financial Literacy they don't increase their sense of security and willingness but their perceived risk with the system. This means that Financial Literacy in this case has acted as a double-edged sword within the context of the study; while it is the strongest driver of Trust ($r=0.633$) it is also the factor which seems to have contributed most significantly

to the negative effect in the users, and left them in a state of neutral cautiousness. This is a significant finding in that it appears to be responsible for moderate trust levels (3.09) as opposed to high ones. Since users have high Financial Literacy their moderate trust levels can be explained by their heightened awareness of risk. Since this trust is informed not blind it require much more "proof" in the form of usage to convert to a feeling that will drive adoption. This psychological state for the 144 respondents represents one of equipoise-users trust enough to believe the system exists, but know enough to not put full faith into it and thus remain in a state of behavioral stasis. This finding demonstrates a flaw in purely informational drivers of behavior, the finding indicates that since the test subjects are moderately literate and trust the system they will now not adopt the system simply because they "know" about it, and therefore their score on Adoption must be near zero ($r=0.060$). This implies for this particular population, adoption is not a matter of gaining knowledge, but rather experiencing the system's utility. Users have still not seen any tangible use or benefit in using the system that their existing knowledge doesn't already account for, thus adoption continues to be a future goal. This implies that the learning curve/implementation barriers for the 144 subjects is high enough to still warrant sticking with previous methods since the leap from knowledge to action is not simply a leap of information but a "behavioral leap." The key finding here has to do with the 'ceiling effect' exhibited by both Trust and Adoption. Despite the fact that knowledge strongly impacts Trust, we only see a mean Trust of 3.09 and a maximum observed value on adoption of 3. This suggest the sample as a whole does not show signs of being completely confident or fully utilizing the system. Even with optimal conditions the sample appears to exhibit a reluctance to become full users. This means that the current system is likely not robust enough to meet the needs of the respondents to elevate beyond simply interacting with it on a basic level; they trust enough to use it when absolutely necessary, but do not feel the need to use it for the bulk of their financial needs. This 'sub-optimized' adoption represents a critical finding, suggesting that the methods of implementation are at their most successful now and some form of increased utility would be required to reach a higher adoption level. Ultimately these key findings represent a complex set of internal logics that govern the behavior of the respondents. While users appear rational in their judgments (using Financial Literacy to develop trust), they do not appear entirely rational in their actions, as a higher score on Trust doesn't automatically translate into action. The most evident takeaway is that it is not Fear, or Trust, or even Knowledge which is holding back adoption but rather a "Perception-Action Gap," in which Adoption will only move if an

external force encourages it through direct demonstration. Behavioral stasis appears to be a significant finding for this particular group, as the observed low standard deviation for the Adoption variable (0.555) and observed score maximum never exceeding 3 means that the 144 users interviewed behave in the same manner regarding adoption of the system. This implies the barriers to adoption are system-wide not individual. Whether a user has a high level of Financial Literacy or a high Trust value their actual behavior is indistinguishable. The system is thus not providing sufficient behavioral motivation, and is sitting at a low-use equilibrium whereby it cannot influence the target behavior. Habitual resistance combined with perceivability proved to be the gate keepers.

Since Trust and Financial Literacy are at already reasonable levels and don't correlate to Adoption, this indicates that the users are not intentionally staying away out of malice or doubt, but rather, that there's no immediate incentive "of least resistance" that is convincing enough to get users to abandon their current system. In fact, the study confirms that users are by their nature thrifty and that simply believing a system is trustworthy (mean 3.09) is not enough to make users switch if they perceive the behavioral change is too much work. Clearly, then, the "cost of switching" is a large, unobserved construct causing Adoption to remain flat. All in all, the results of the study point to a multi-faceted disconnect between how the users perceive the system, and how they actually use it. It has been shown that while the cognitive route (Financial Literacy => Trust) is working fine, the behavioral route is completely blocked. While neither Fear nor Trust is acting as the significant factor that's either blocking or propelling adoption, respectively, these result in Adoption remaining in a perpetual state of equilibrium. Overall, the most important finding of this study is the dominance of the "Perception-Action Gap" as the feature of the dataset. This suggests that the system will continue to suffer from a low adoption rate unless its design is shifted to focus away from psychology or education and entirely toward utility and behavioral ease. These findings serve as the basis for the final section of this paper: discussing strategic and policy implications.

V. CONCLUSION

The present study was undertaken to study the factors behind the adoption of robo-advisory services, in developing countries like India. India in particular has gone through a major development in the financial sector and has brought major changes

like digital financial payments, digital lending platforms, internet banking and mobile wallets etc, one such change was the emergence of robo advisors. Though robo-advisory entered India in 2009 through FundsIndia and was later adopted by of several fintech platforms such as Groww, Zerodha, and Kuvera, it's adoption rate remained low. In such an emerging economy, the adoption of robo-advisory services was still low as compared to the developed countries, which led to the question of why is there a difference and what are the possible factors that might be hindering in the development of these services. While robo advisory was more data driven and technology dependent, it lacks in comprehending the cultural and psychological factors that might hinder it's adoption rate. This created space to study about the factors such as trust, financial knowledge, fear that might be affecting it's adoption. The study's main objectives included to study investor trust in robo advisors and human advisors, to study the impact of financial literacy and to study the psychological factors like fear, anxiety about automated services, that affects it's adoption. In order to examine this , the study included three main hypothesis that trust does not impact on the adoption of robo advisory services, financial literacy does not impact the adoption of robo-advisory services and psychological factors does not influence the adoption of robo-advisory services. To examine the objectives and test the hypothesis, a survey was prepared, in form of questionnaire designed through google forms. The questions included in the survey tends to measure the current level of financial knowledge, investor awareness about robo advisory, trust levels, preferences and behavioral factors influencing the adoption of robo advisory services and was circulated to the target population of 18-45 years old. To analyse the data collected, the study employed descriptive statistics, correlation matrix and used Structural Equational Modeling (SEM) to analyse the impact of different variables, including factor and regression analysis. SEM was used to examine the effect of trust, financial literacy and fear on the adoption of Robo-Advisors.

Trust was found to have a statistically significant positive effect on adoption of robo advisory services, meaning, when investors had a high degree of trust toward robo advisory services, it is expected that they will adopt these services. Financial literacy was found to have a positive effect on adoption which suggests, financial knowledge might assist investors to grasp and adapt new fintech services. Fear was found to have a negative and statistically insignificant effect toward adoption which means, there may be certain fear or aversion regarding the automated advisory services, however this does not appear to have an influence toward the decisions taken.

Overall, the results imply, that trust plays a crucial role in driving the adoption of fintech services The findings of the present study suggest the burgeoning role that behavioral and perceptual variables are playing in the Robo advisory services adoption

The research reveals that among the examined variables, (trust, financial literacy, and fear), trust was found to have a positive influence over Robo advisory services adoption. In other words, investor confidence toward automated financial services needs to be higher for their adoption rate to increase. It is only when investor would feel comfortable about this issue they will likely engage with these services. The trust level could be influence by multiple factors such as transparency, reliability of algorithm-based advice, security, and regulation aspect of financial services. As investors have greater faith in these platforms for reliable and secure reasons the number of investors who will adopt automated services will increase in a significant way. Furthermore, it can be observed that financial literacy has a positive but statistically insignificant association with the adoption of robo advisory services within the present research scope Although it has a positive relation, meaning that it would help in the understanding of these services, but it alone would not be sufficient for increasing the adoption rate, suggesting that adoption decisions are likely influenced by a broader combination of technological, psychological and contextual factors.

The study further indicates that financial literacy shows a positive relation with adoption, but it had a statistically insignificant effect on adoption within the present sample. Although it has a positive relation, meaning that it would help in the understanding of these services, but it alone would not be sufficient for increasing the adoption rate, suggesting that adoption decisions are likely influenced by a broader combination of technological, psychological and contextual factors.

Similarly, psychological concerns represented through fear showed a weak negative relationship with adoption, suggesting that apprehensions relating to automation, lack of human interaction, perceived investment risk or uncertainty regarding technological systems may influence investor decisions when it comes to adapting these services.

In all the study concludes that building trust remains the first and foremost step in increasing the adoption rate, it can be increased through building a strong financial knowledge base, increasing awareness and then building the people's trust in them. Trust remains central to increasing the adoption specially in emerging digital financial ecosystems where the acceptance of these kinds of automated financial services is still emerging. Therefore trust in artificial intelligence is a crucial factor in adoption, whereas perceived risk acts as a barrier, reinforcing the need for enhanced transparency, regulatory oversight and trust building initiatives.

Recommendations

Based on the findings of the study, it is recommended to fintech companies to include trust building mechanisms in their processes to increase the adoption of robo advisory. They should understand that first people have to understand these services and trust them in order to adapt them. The companies to should build easy to use interface for the users, increase the reliability of their platforms, show greater transparency in algorithmic workings, portfolio management, risk assessment etc. Besides they can foster trustworthiness through steady performance by educating people on its transparency of operation, benefits, enhancing cybersecurity practices, and ensuring compliance with the regulators.

Given that trust proved to be a significant factor affecting adoption, the main efforts ought to be directed towards building the confidence of the investors in automated financial services. Along with this, improving awareness, financial literacy and user experience may help further boost acceptance of robo-advisory services. Companies may even consider implementing a hybrid advisory model which provides automated recommendations along with minimal human intervention for first-time users who may be hesitant in entirely relying on automated processes. Although financial literacy may not have emerged as statistically significant in this study, it remains a key element of investor decision making. Increasing awareness and comprehension of digital financial tools can alleviate hesitation and boost the adoption of robo-advisory platforms. For this purpose, financial institutions, market regulators and literacy bodies should take the necessary steps, like starting teaching basic concepts related to investment to new time investors like risk assessment, asset allocation, ways to manage a automated portfolio. These steps will make the investor gain more confidence, and they will be able to make better decisions about using technology driven advisory services.

Moreover, a foundational knowledge could be a first step in increasing the trust in automated services. Increased awareness about the easy working of robo-advisory, it's advantages, are important when in comes to increasing adoption. In the current scenario, many potential investors would not know the benefits of robo-advisory, such as low cost, fast speed, simplified process and no direct involvement of a third part. Once people become aware of certain advantages, robo-advisory can be quite appealing to them. This can be achieved through many ways in the era of digitalization and growing social media, like organizing digital media campaigns, informative workshops, content creation about the benefits of robo-advisory, these can be crucial steps in influencing the potential investors about robo-advisory and it's benefits of comparative low cost, and ease of use.

These steps would result in greater exposure of robo-advisory services, that will help investors to overcome their hesitation. Some of the steps that authorities, like policymakers, financial regulators,could contribute are making clear regulatory norms, strict disclosure standards, strict customer protection measures, proper compliance regarding data security and data protection. When people feel protected and backend by law, they are able to overcome their prior hesitation and prior beliefs regarding technology driven platforms more easily, and they could take these services easily.

By taking these steps, regulators create a protective and positive attitude towards technology, and also contributes to further innovation, while ensuring investor safety and stability. Therefore, a comprehensive approach of gaining trust, strengthening investor education, establishing a strong regulatory system, maintaining transparency could help to achieve greater growth of robo-advisory adoption in the long run.

For providing more insightful measures in increasing adoption, future research should focus on collecting data from diverse sample sizes and cover geographical sections, like metro cities, tier 1, tier 2 cities of India itself. Also, while exploring different concepts and factors behind adoption to consider more aspects of behavioral and technical issues that may arise during adoption.

The present study focused on 3 variables impacting investor choice of robo-advisory services: trust, financial literacy and psychological fear. These 3 factors give a meaningful insight into investor's decision of investing via robo-advisors but a real-world investor behavior also involve a lot many more factors like perceived usefulness, easy usability of financial technology and financial literacy in terms of financial instruments, awareness about Fintech services and income, etc. A more holistic approach which considers such additional variables could lead to a better explanation of the behavior of investors. Diverse groups and sample sizes such as that of varying ages and varying demographics will be valuable in identifying various impact factors. Every individual responds to digital financial instruments and devices according to their social standing and demographic group; larger sample sizes will add to the generalization of such findings. There are several shortcomings present in this study, primarily, that of self-reported data in a questionnaire. Data obtained from surveys can be subjected to various biases and misinterpretations on the part of the participants. A respondent can simply give answer they consider to be appropriate for that time. Despite such issues, the study adds significantly to understanding the investors' adoption behavior towards robo-advisory services. It is expected to serve as an invaluable reference in both the academic and financial world. Practical Implications for the financial services sector clearly show that current user acceptance (2.073) is likely low, not because people are not aware (nearly 55% have heard of robo-advisors), but because they fail to transition from interest to action. Given that trust is the only variable statistically significant at $p < 0.05$ ($p=0.045$), financial sector professionals and FinTech developers need to shift away from generic education campaigns and focus on demonstrably establishing the trustworthiness of their platforms.

When it comes to financial literacy with a mean of 2.146, it is observed that respondents struggle to understand certain complex financial concepts, making them opt for personal attention of human advisors. In order to solve this issue, companies offering robo-advisory should focus on creating a user friendly interface, which is easy for new time as well as regular investors. They could also focus on automating complex investment tasks such as asset allocation and risk assessment to create a smoother investment experience.

When it comes to young investors, they are observed to be sensitive towards their time and response to convenience. Therefore, the companies offering robo-advisory should focus on making their platforms time saving and convenient. Some steps that such advisory platforms could undertake to increase convenience are establishing 24/7 chat support, personalized alerts, automated SIP investing, and automated portfolio management.

Lastly, the findings suggest that there is a strong need for institutional support to validate this new type of financial advisory technology. Since trust is found to the key factor affecting adoption, support form well established institutions, financial bodies and strong regulatory framework, would bridge the gap and the hesitation in people's mind of these digital products

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